

Impact of Reproductive Health Counseling on Premarital Women's Knowledge Regarding Healthy Pregnancy Preparation: A Study in Tlogosuryo, Malang

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ABSTRACT

High maternal mortality highlights the need for premarital reproductive health counseling. This study evaluated its impact on healthy pregnancy preparation knowledge in Malang. A pre-experimental design sampled 35 premarital women (Jan–Feb 2026). The intervention was a 90-minute session covering maternal nutrition, reproductive health, and danger signs. Data were analyzed using the Wilcoxon signed-rank test. Pre-counseling, 68.6% of respondents had poor knowledge. Post-counseling, 80.0% achieved good knowledge. The Wilcoxon test yielded a significant p-value of 0.000 ($p < 0.05$), demonstrating that reproductive health counseling exerts a significant positive effect on enhancing knowledge. Structured premarital counseling effectively mitigates knowledge gaps. Active participation is highly recommended to improve maternal outcomes.

Keywords: Counseling, Knowledge, Premarital Women, Pregnancy Preparation.

I. Introduction

A premarital couple represents the foundational cornerstone of a future family, necessitating thorough health preparation before entering wedlock. Such preparation is crucial to ensuring that women can navigate pregnancy and childbirth safely, ultimately fostering a healthy, prosperous, high-quality future generation. Consequently, the first pregnancy is a pivotal phase in the female reproductive cycle that requires optimal readiness and meticulous planning by prospective parents (Oktaemilianti et al., 2021). To safeguard this reproductive transition, couples are increasingly required to undergo a series of premarital screenings or checkups. In Indonesia, these premarital screening procedures are formally recognized as an integral component of sexual and reproductive health rights. The implementation of these screenings, frequently conducted by local public health centers (Puskesmas), evokes various community responses, notably regarding client satisfaction with the services rendered by healthcare professionals (Arifah et al., 2022).

On a broader scale, the urgency of premarital health preparation is underscored by severe public health indicators. Globally, the World Health Organization (WHO, 2020) recorded a staggering maternal mortality rate (MMR) of 211 deaths per 100,000 live births, alongside 26 million cases of obstetric complications out of 117 million normal deliveries. Nationally, Indonesia's Central Bureau of Statistics (BPS) documented 189 maternal mortality cases in 2023. A major upstream factor heavily contributing to these high maternal mortality figures is the profoundly low level of reproductive health knowledge among premarital couples. This educational deficit triggers severe adverse consequences, including the transmission of infectious diseases, unplanned pregnancies, fetal abnormalities, and life-threatening gestational or labor complications. Furthermore, public risks are compounded by the reality that an individual who appears visually healthy may unknowingly act as a carrier for hereditary or infectious diseases (Fifit et al., 2022).

To mitigate these maternal health risks, interventions must shift further upstream, targeting individuals during adolescence, young adulthood, and the premarital stage rather than waiting until a pregnancy has occurred (Depkes RI, 2020). In response, the Indonesian Ministry of Health instituted the Reproductive Health Program for Premarital Couples under the Sub-directorate of Reproductive Age Health. This program implements structured Communication, Information, and Education (IEC) strategies designed to enhance reproductive literacy and prepare couples physically for conception. While premarital women must understand reproductive functions to achieve safe gestations, premarital men are equally expected to maintain good health and actively participate in pregnancy planning (Depkes RI, 2020). Sociological evidence confirms that adapting to motherhood is a complex cognitive and social learning process for women of all ages; hence, the parental role is executed significantly better when individuals possess strong baseline knowledge regarding pregnancy readiness (Tamang et al., 2021).

At the regional and local municipality levels, optimizing pregnancy readiness among premarital women stands as a vital public health focus, particularly within the Tlogosuryo area in Malang. Health institutions and religious authorities have actively collaborated to implement reproductive health counselling services for premarital women. This targeted counselling delivers essential education regarding premarital nutrition, mandatory clinical screenings, family planning, the prevention of sexually transmitted infections, and maternal danger signs. Alongside counselling, physical screenings—such as hemoglobin measurements, immunization tracking, infectious disease testing, and nutritional status assessments—are conducted to facilitate early detection and provide medical referrals for high-risk pregnancies. Furthermore, Puskesmas and the local Religious Affairs Office (KUA) host structured premarital classes (kelas catin) to enrich couples' physical, mental, and social readiness. This cross-sectoral integration between the Department of Health, BKKBN, and the Ministry of Religion ensures that reproductive health education is securely embedded within the mandatory administrative prerequisites for marriage.

Despite these comprehensive structural frameworks, a substantial gap persists between policy design and community execution. While empirical research, such as that by Indar Gaiya (2025), demonstrates a highly significant relationship between premarital counselling and healthy pregnancy preparation, field realities often paint a different picture. A preliminary study conducted by the researcher in Tlogosuryo, Malang, revealed that 8 out of 10 premarital women lacked detailed, accurate knowledge concerning healthy pregnancy preparation. This deficit primarily stemmed from passive health-seeking behaviors, as these women rarely sought reliable health information online or utilized professional counselling services. Driven by this problematic localized gap, the researcher was compelled to investigate this matter further. Therefore, the primary purpose of this study was to determine the precise influence of reproductive health counseling services on premarital women's knowledge regarding healthy pregnancy preparation in Tlogosuryo, Malang.

II. Methods

Research Design and Setting

This study utilised a quantitative approach with a pre-experimental design, specifically a one-group pretest-posttest design (pre-experiment without a control group). This design was selected to measure the direct baseline knowledge of the participants before the intervention and evaluate the changes immediately after the treatment. While the absence of a control group is acknowledged as a limitation in isolating the intervention from external historical factors, this design was deemed the most feasible approach given the programmatic constraints and the ethical necessity of providing immediate health education to all available premarital women during the timeframe. The study was conducted in the Tlogosuryo region, under the administrative jurisdiction of the Lowokwaru District Religious Affairs Office (KUA), Malang, East Java, Indonesia.

Time and Period of the Study

The research was actively carried out over a two-month period, spanning from January to February 2026. This timeframe encompassed the coordination phase, participant recruitment, pre-intervention assessments, implementation of counselling sessions, and post-intervention evaluations.

Variables of the Study

Two main categories of variables were isolated in this research:

Independent Variable: The implementation of reproductive health (Kespro) counseling services designed specifically for premarital women.

Dependent Variable: The premarital women's knowledge and literacy regarding healthy pregnancy preparation.

Population, Sample, and Sampling Technique

The target population for this study comprised all premarital women registered for marriage at the Lowokwaru District KUA, specifically those residing or marrying within the Kelurahan Tlogosuryo territory during the designated research period.

The study employed accidental sampling (a non-probability sampling technique where respondents are selected based on their convenient availability and accessibility to the researcher at the time of data collection). Through this method, a total sample size of 35 premarital women who met the inclusion criteria was obtained during January and February 2026. Although non-probability accidental sampling limits the generalizability of the results to the wider population of premarital women in Malang, it served as a practical strategy to capture the immediate target cohort visiting the KUA office.

Research Instrument

The primary data collection tool was a structured, self-administered questionnaire developed based on standard indicators for premarital reproductive health and pregnancy preparation. To ensure comprehensiveness, the questionnaire evaluated specific, detailed indicators across four core domains: 1) Premarital Nutrition: Chronic Energy Deficiency (KEK) prevention, iron and folic acid supplementation, and ideal body mass index (BMI) for conception; 2) Preconception Screenings: The importance of blood tests (Hb levels), torch screenings, and TT (Tetanus Toxoid) immunisation status; 3) Family Planning: Birth spacing and reproductive anatomy readiness; 4) Pregnancy Danger Signs: Early detection of severe preeclampsia, vaginal bleeding, and hyperemesis gravidarum.

To ensure measurement accuracy, the instrument underwent rigorous validity and reliability testing prior to deployment. The knowledge levels were subsequently categorized using standard thresholds into three levels: Good, Sufficient, and Poor.

Data Analysis

The collected data were cleaned, coded, and processed using statistical software.

Descriptive Statistics: Frequency distributions and percentages were calculated to describe the demographic characteristics and summarized the pretest and posttest knowledge categories.

Inferential Statistics: Since the data consisted of ordinal categorical classifications (knowledge levels) from a single group measured twice, a non-parametric approach was required. The Wilcoxon signed-rank test was deployed to analyze the significance of the difference between the pre-test and post-test scores. The threshold for statistical significance was strictly set at a p-value of less than 0.05 ($p < 0.05$).

Ethical Considerations

To safeguard human subjects, this study strictly adhered to international bioethical standards. The research protocol successfully passed an institutional ethical review board evaluation, securing formal ethical clearance prior to field execution.

Before the distribution of instruments or the initiation of counseling, all 35 participants were provided with a clear explanation regarding the study's benefits, lack of physical risks, and administrative purposes. Prospective respondents were explicitly informed that their participation was entirely voluntary and that they reserved the right to withdraw at any stage without penalty. Written informed consent (*lembar persetujuan*) was obtained from all participating premarital women. Additionally, strict data anonymity and confidentiality protocols were enforced by omitting personal identifiers from all analysis sheets and storing records securely.

III. Results and Discussion

Results

Effect of Reproductive Health Counselling Services

The primary objective of this study was to evaluate the change in health literacy regarding healthy pregnancy preparation among premarital women before and after receiving structured reproductive health (Kespro) counselling services. Based on the longitudinal tracking of 35 respondents, cross-tabulation data paired with non-parametric inferential analysis were generated to measure this direct intervention effect.

The baseline data collected during the pre-test phase showed that a clear majority of the premarital women possessed a limited understanding of preconception health. However, data collected during the post-test phase, immediately following the reproductive health counseling intervention, demonstrated a prominent shift toward higher knowledge categories.

To determine whether this observed descriptive upward shift was statistically significant, a Wilcoxon signed-rank test was executed. The inferential analysis yielded an asymptotic significance value of 0.000 ($p < 0.05$). Because the calculated p-value falls well below the standard alpha threshold of 0.05, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is officially accepted. This statistical outcome proves that the implementation of structured reproductive health counselling services exerts a highly significant positive effect on enhancing knowledge regarding healthy pregnancy preparation among premarital women in Tlogosuryo, Malang.

General Overview of the Research Site

This research was anchored within the Tlogosuryo area, which serves as a major residential sector and a primary arterial road hub situated inside the Tlogomas Subdistrict, Lowokwaru District, Malang City, East Java, Indonesia. Functionally, this strategic location is highly recognised as one of the largest student housing and residential clusters in Malang due to its direct geographical proximity to major prominent universities, including the Universitas Muhammadiyah Malang (UMM), Universitas Islam Malang (Unisma), and Universitas Tribhuwana Tunggaladewi (Unitri).

Characteristically, Tlogosuryo embodies a dynamic blend of educational environments, religious institutions, and local creative economies. The daily socioeconomic activities of the population are heavily dominated by student housing rentals (boarding houses), diverse culinary ventures, and non-formal educational centres such as student-focused Islamic boarding schools (pesantren). Philosophically, the name "Tlogosuryo" is derived from native natural elements, combining "Tlogo" (meaning a lake or ancient water spring) and "Suryo" (meaning the sun). This nomenclature deeply reflects the historical landscape of the Tlogomas territory, which has long been documented as an area abundant in ancient heritage water springs.

Demographic Characteristics of Respondents

To provide context for the primary findings, the baseline demographic profiles of the 35 premarital women registered at the Lowokwaru District Religious Affairs Office (KUA) within the Tlogosuryo area were compiled. The evaluated demographic indicators included age, educational background, and employment status.

As detailed in Table 4.1, the data revealed that more than half of the sampled individuals were positioned within the prime reproductive and matrimonial age bracket of 25–30 years old (19

individuals, 54.3%). Regarding educational attainment, the vast majority of the premarital women had completed a minimum of secondary education, holding a high school diploma as their highest qualification (30 individuals, 85.7%). Lastly, the employment data indicated that a slight majority of the respondents actively worked as private sector employees (19 individuals, 54.3%), while the remaining participants operated independent private businesses or commercial ventures (16 individuals, 45.7%).

Table 1. Demographic Characteristics of Respondents

No.	Demographic Indicator	Frequency (f)	Percentage (%)
1	Age Bracket		
	< 25 years old	12	34.3
	25–30 years old	19	54.3
	31–35 years old	4	11.4
	Subtotal	35	100.0
2	Educational Level		
	High School (SMA/Equivalent)	30	85.7
	Bachelor's Degree (S1)	5	14.3
	Subtotal	35	100.0
3	Employment Status		
	Private Sector Employee	19	54.3
	Private Entrepreneur / Self-Employed	16	45.7
	Subtotal	35	100.0

Knowledge Levels of Healthy Pregnancy Preparation Prior to Counseling (Pre-Test)

The baseline assessment of reproductive health literacy was evaluated using a pre-test questionnaire before any intervention took place. As shown in Table 4.2, the pre-test results indicate that the baseline knowledge among the 35 premarital women in Tlogosuryo was heavily critical. A vast majority of 24 individuals (68.6%) fell into the poor knowledge category, while only 8 individuals (22.9%) scored as sufficient, and a small minority of 3 individuals (8.6%) possessed a good initial understanding of healthy pregnancy preparation.

Table 2. Knowledge Levels of Healthy Pregnancy Preparation Prior to Counseling (Pre-Test)

No.	Knowledge Classification	Frequency (f)	Percentage (%)
1	Good	3	8.6
2	Sufficient	8	22.9
3	Poor	24	68.6
	Total	35	100.0

Knowledge Levels of Healthy Pregnancy Preparation Following Counseling (Post-Test)

Following the completion of the reproductive health counseling intervention, an identical post-test assessment was administered to evaluate changes in health literacy. As described in Table 4.3, the post-test results illustrate that the health literacy levels of the premarital women improved substantially. Almost all respondents (28 individuals, 80.0%) successfully achieved a good level of knowledge, while the remaining 7 individuals (20.0%) reached a sufficient level, leaving no respondents (0.0%) in the poor knowledge category.

Table 3. Knowledge Levels of Healthy Pregnancy Preparation Following Counseling (Post-Test)

No.	Knowledge Classification	Frequency (f)	Percentage (%)
1	Good	28	80.0
2	Sufficient	7	20.0
3	Poor	0	0.0
Total		35	100.0

Cross-Tabulation Matrix and Inferential Statistical Analysis

To track individual shifts in health literacy, the pre-test and post-test data were cross-tabulated and analyzed using the Wilcoxon signed-rank test. As modeled in Table 4.4, out of the 24 premarital women who initially scored poorly, 17 individuals (48.6%) successfully upgraded their knowledge to the good tier, and 7 individuals (20.0%) advanced to the sufficient tier after receiving counseling. Meanwhile, all respondents who started with sufficient knowledge also advanced to the good category. The Wilcoxon test confirmed this positive shift with an exact p-value of 0.000 ($p < 0.05$), formally establishing that reproductive health counseling services exert a statistically significant influence on enhancing premarital women's knowledge in Tlogosuryo, Malang.

Table 4. Cross-Tabulation Matrix and Inferential Statistical Analysis

Baseline Knowledge (Pre-Test)	Post-Test: Good	Post-Test: Sufficient	Post-Test: Total	Wilcoxon Test Result
Good	3 (10.0%)	0 (0.0%)	3 (8.6%)	Asymp. Sig. (2-tailed): 0 (Significance level < 0.05)
Sufficient	8 (22.9%)	0 (0.0%)	8 (22.9%)	
Poor	17 (48.6%)	7 (20.0%)	24 (68.6%)	
Total	28 (80.0%)	7 (20.0%)	35 (100.0%)	H1 Accepted

DISCUSSION

Identification of Knowledge Regarding Healthy Pregnancy Preparation Prior to Reproductive Health Counseling (Pre-Test)

The baseline findings of this study revealed that prior to the implementation of reproductive health (*Kespro*) counseling services, the majority of premarital women in Tlogosuryo, Malang, demonstrated a poor level of knowledge regarding healthy pregnancy preparation. This baseline assessment evaluated critical areas of preconception literacy, including the necessity of premarital medical screenings, structured family planning, the prevention of sexually transmitted infections (STIs), and the recognition of obstetric danger signs. According to Notoatmodjo (2020), knowledge is the cognitive result of an individual's sensory perception toward a specific object. In light of this concept, the initial deficit in health literacy among these respondents stems from a chronic lack of exposure to accurate, systematic, and comprehensive reproductive health information. Consequently, before the intervention, the participants were unable to optimally grasp the clinical significance of preconception readiness and proactive pregnancy planning.

Interestingly, the demographic profile indicated that more than half of the respondents were positioned within the prime reproductive and matrimonial age group of 25–30 years old. Theoretically, age is a critical determinant in the formation of cognitive capacity; as an individual matures, their cognitive processing, comprehension, and analytical patterns expand, leading to improved knowledge acquisition (Budiman & Riyanto, as cited in Gracia, 2022). However, this study underscores a distinct gap between biological maturity and health literacy. Although the premarital women in Tlogosuryo

possessed the psychological and developmental maturity associated with their age group, their baseline knowledge remained insufficient due to a lack of structured educational channels. This finding implies that age-associated intellectual maturity cannot compensate for a lack of explicit health communication.

This baseline deficit is further exacerbated by educational and environmental disparities. Educational backgrounds shape an individual's capacity to access, interpret, and internalize complex medical information. Respondents with limited educational attainment often face substantial barriers in navigating reproductive health resources, directly contributing to their poor understanding of preconception care and maternal risk mitigation.

Furthermore, environmental conditions and lack of experiential knowledge play a critical role. A community environment that lacks open discourse regarding reproductive wellness restricts the natural flow of scientifically valid information. Because the vast majority of these premarital women were entering marriage without prior gestational experience, their understanding of pregnancy was purely theoretical and highly superficial. This systemic vulnerability emphasizes the urgent need for institutionalized reproductive health counseling as a structured educational platform to empower future mothers before conception occurs.

Identification of Knowledge Regarding Healthy Pregnancy Preparation Following Reproductive Health Counseling (Post-Test)

In contrast to the baseline metrics, the post-test results demonstrated a profound transformation, with almost all premarital women achieving a good level of knowledge following the reproductive health counseling intervention. The American Counseling Association defines counseling as a professional relationship that empowers diverse individuals, families, and groups to accomplish mental health, wellness, education, and career goals. Guided by this principle, the structured counseling sessions deployed in this study effectively enhanced the respondents' health literacy because the process was highly directed, interactive, and tailored to individual preconception needs. This professional dyad fostered dynamic, bidirectional communication, allowing the premarital women to not only absorb vital health concepts but also clarify deeply rooted misconceptions in real time.

This cognitive progression was significantly optimized by the participants' primary age distribution (25–30 years old). Re-examining Notoatmodjo's (2020) framework on sensory learning, the post-intervention success occurred because individuals in this developmental stage possess mature cognitive facilities, enabling them to process and retain new information with high efficiency. The counseling sessions deliberately engaged multiple senses by combining verbal explanations and interactive discussions with visual learning aids, such as structured leaflets and multimedia presentation slides. This multisensory educational approach created a meaningful learning experience, facilitating a comprehensive understanding of healthy pregnancy guidelines.

From a public health perspective, the substantial improvement observed in the post-test emphasizes that reproductive health counseling functions as a powerful tool for upstream prevention. The curriculum extended beyond basic terminology to actively equip premarital women with practical insights into gestational risks, complication prevention, and the long-term benefits of premarital medical screenings. By improving cognitive readiness, the counseling service transformed passive participants into informed decision-makers who are aware of their own health status and that of their partners.

The integration of lectures, Q&A sessions, and physical media aligns with progressive health education models which state that active participation maximizes educational outcomes. Ultimately, premarital counseling serves as a strategic intervention hub in Tlogosuryo, Malang, granting structured

access to previously inaccessible reproductive education and effectively establishing a strong cognitive foundation for planned, safe motherhood.

The Influence of Reproductive Health Counseling Services on Premarital Women's Knowledge Regarding Healthy Pregnancy Preparation

The cross-tabulation analysis between the pre-test and post-test phases illustrated a prominent positive shift in health literacy thresholds among the 35 premarital women in Tlogosuryo, Malang. Prior to the intervention, 68.6% of the participants scored poorly; however, following the reproductive health counseling, nearly half of the entire sample size successfully migrated from the poor to the good knowledge tier. Item-level analysis revealed that during the pre-test, the majority of respondents consistently failed item number 3, which evaluated the critical nature of maternal-fetal health and the necessity of routine medical checkups during gestation. Post-intervention data confirmed that this specific misconception was fully resolved, with respondents demonstrating a clear understanding of maternal wellness and the clinical importance of Antenatal Care (ANC) visits.

Bivariate analysis utilizing the Wilcoxon signed-rank test confirmed that this upward shift was highly significant, yielding an exact p-value of 0.000 ($p < 0.05$), thereby validating the alternative hypothesis (H_1). This statistical confirmation proves that reproductive health counseling services exert a significant positive influence on premarital women's knowledge. This outcome aligns with previous research conducted by Gaiya (2025), which similarly established a highly significant correlation between structured premarital counseling and healthy pregnancy readiness.

These empirical results are strongly supported by established counseling theories. The Division of Counseling Psychology characterizes counseling as an objective process designed to help individuals overcome developmental barriers and achieve optimal personal growth. Within this study, the counseling intervention operated as a systematic educational vehicle that enabled participants to transcend their baseline cognitive limitations. By establishing a professional, supportive relationship, the counselor successfully facilitated bidirectional communication that was far more effective than conventional, passive information distribution. The intervention fulfilled the primary goals of clinical counseling: fostering self-awareness, illuminating personal health risks, and empowering autonomous, healthy behavioral choices.

The success of this intervention is also deeply rooted in the core ethical and operational tenets of counseling, specifically the principles of openness, voluntariness, and active engagement. Because the premarital women participated openly and voluntarily, they were highly motivated during the interactive Q&A sessions. This active participation allowed their cognitive depth to advance through Bloom's taxonomy—shifting from basic recognition (*know*) to comprehensive articulation (*comprehension*), and finally to practical intention (*application*).

IV. Conclusion

Based on the research findings and comprehensive discussions presented in the previous chapters, the following conclusions can be drawn:

- Prior to receiving reproductive health (*Kespro*) counseling services, the baseline knowledge regarding healthy pregnancy preparation among premarital women in Tlogosuryo, Malang, was highly insufficient, with the vast majority categorized as Poor (24 individuals, 68.6%).

- Following the implementation of the structured reproductive health counseling intervention, the participants' health literacy experienced a substantial increase, resulting in almost all respondents being categorized as Good (28 individuals, 80.0%).
- Reproductive health counseling services exert a highly significant positive influence on enhancing knowledge of healthy pregnancy preparation among premarital women in Tlogosuryo, Malang. This is empirically validated by the non-parametric inferential analysis using the Wilcoxon signed-rank test, which yielded an exact significant p-value of 0.000 ($p < 0.05$), thereby formally confirming the success of the intervention.

Recommendations

1. Policy Improvement

- **Institutional Synergy:** The Ministry of Religious Affairs (KUA) and the Ministry of Health (Puskesmas) should formalize a mandatory regulatory framework requiring premarital reproductive health counseling as a prerequisite for marriage registration.
- **Standardization:** Develop a standardized national premarital health education module that integrates physical, nutritional, and psychological readiness for pregnancy.

2. Health Service Delivery

- **Optimizing Counseling Formats:** Community health centers (*Puskesmas*) should scale up structured counseling methods, shifting from passive pamphlet distribution to interactive 90-minute digital or face-to-face modules that comprehensively cover maternal nutrition, screening, and danger signs.
- **Early Detection Integration:** Incorporate immediate preconception screenings (such as Hb testing for anemia and Chronic Energy Deficiency screening) directly into the premarital counseling schedule at the local level.

3. Future Research

- **Methodological Expansion:** Future studies should employ a randomized controlled trial (RCT) design with a control group to isolate the direct effects of the intervention from external factors.
- **Long-Term Follow-Up:** Longitudinal research is recommended to track whether increased knowledge effectively translates into behavioral changes, healthier adherence during pregnancy, and reduced maternal complication rates.

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