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Knowledge, Attitudes, and Practices Regarding Contraception Among Young Women in Urban Indonesia: A Mixed-Methods Approach

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A B S T R A C T

Introduction: Unintended pregnancies and unsafe abortions remain significant public health concerns in Indonesia, particularly among young women in urban areas. This study aimed to explore the knowledge, attitudes, and practices (KAP) regarding contraception among young women residing in urban Indonesia, employing a mixed-methods approach to gain an in-depth understanding of this complex issue. **Methods:** This study used a sequential explanatory mixed-methods design. The quantitative phase involved a cross-sectional survey of 500 young women aged 18-24 years residing in Jakarta, Indonesia. A structured questionnaire assessed their knowledge about various contraceptive methods, attitudes towards contraception, and current contraceptive practices. The qualitative phase comprised in-depth interviews with 30 participants purposively selected from the survey sample to explore their experiences, beliefs, and perspectives on contraceptive use. Quantitative data were analyzed using descriptive statistics and logistic regression, while thematic analysis was employed for qualitative data. **Results:** The quantitative findings revealed that while the majority of participants had good knowledge about contraception, misconceptions and gaps existed regarding specific methods, particularly long-acting reversible contraceptives (LARCs). Attitudes towards contraception were generally positive, although concerns about side effects and social stigma were prevalent. The prevalence of current contraceptive use was moderate, with condoms and oral contraceptive pills being the most common methods. Qualitative findings provided deeper insights into the factors influencing contraceptive use, including perceived susceptibility to pregnancy, partner communication, family and social influences, access to healthcare services, and religious beliefs. **Conclusion:** This study highlights the need for comprehensive sexuality education programs tailored to address misconceptions and promote informed decision-making about contraception among young women in urban Indonesia. Strategies to improve access to youth-friendly contraceptive services and address social and cultural barriers to contraceptive use are also essential.

1. Introduction

Unintended pregnancies and unsafe abortions are still significant global public health issues, despite progress in reproductive healthcare access and family planning services. The World Health Organization (WHO) estimates that globally, there are approximately 257 million pregnancies each year, and 44% of these are unintended. Unintended pregnancies carry a greater risk of adverse health outcomes for both mother and child, including delayed or no prenatal care, premature birth, low birth weight, and increased maternal and infant mortality rates. Unsafe abortions, often performed by unskilled individuals or in unsanitary conditions, contribute significantly to

maternal morbidity and mortality. Indonesia, the world's fourth most populous country, faces considerable reproductive health challenges. Despite the Indonesian government's efforts to promote family planning programs, unintended pregnancies and unsafe abortions remain prevalent, particularly among young women in urban areas. A study conducted by the United Nations Population Fund (UNFPA) in 2018 found that the unmet need for family planning among young women (aged 15-24) in Indonesia was 13.4%, indicating a substantial gap between the desire for contraception and access to and use of effective methods. Several factors contribute to the persistence of unintended pregnancies and unsafe abortions in Indonesia. These include limited access to comprehensive sexuality education, misconceptions and negative attitudes towards contraception, social and cultural barriers, and challenges in accessing youth-friendly reproductive health services.[1-4]

Knowledge, attitudes, and practices (KAP) towards contraception play a crucial role in shaping reproductive health behaviors and outcomes. Adequate knowledge about various contraceptive methods, their effectiveness, advantages, disadvantages, and potential side effects is essential for making informed choices about contraception. Positive attitudes towards contraception, including the belief in its importance for preventing unintended pregnancies and the willingness to use it, are also crucial for promoting consistent contraceptive use. However, studies have shown that gaps and misconceptions about contraception exist among young people in Indonesia. A study conducted in 2017 by the Indonesian National Family Planning Coordinating Board (BKKBN) found that only 57% of young women (aged 15-24) had comprehensive knowledge about modern contraceptive methods. Misconceptions about the safety and effectiveness of certain methods, particularly long-acting reversible contraceptives (LARCs) such as intrauterine devices (IUDs) and implants, are common. Attitudes towards contraception among young women in Indonesia are often influenced by social and cultural norms, religious beliefs, and concerns about side effects. A study conducted in 2019 by the University of Indonesia found that while most young women had positive attitudes towards contraception, concerns about side effects, social stigma, and disapproval from partners or families were significant barriers to contraceptive use.[5-7]

Mixed-methods research, which combines quantitative and qualitative data collection and analysis methods, is increasingly recognized as a valuable approach to gaining a more comprehensive understanding of complex health issues. By integrating quantitative data on KAP with qualitative insights into the experiences, perspectives, and motivations of individuals, researchers can develop a more nuanced and in-depth understanding of the factors influencing contraceptive behavior.[8-10] This study aims to address the gap in the existing literature by employing a mixed-methods approach to explore KAP regarding contraception among young women aged 18-24 years residing in urban Indonesia.

2. Methods

This study employed a sequential explanatory mixed-methods design, with the quantitative data collection and analysis preceding the qualitative phase. This approach allowed for a comprehensive understanding of the topic under study, wherein the qualitative data helped to explain and contextualize the quantitative findings. The study was conducted in Jakarta, the capital city of Indonesia. Jakarta, being a metropolitan city, has a diverse population with people from various socioeconomic and cultural backgrounds.

The quantitative phase of the study involved a cross-sectional survey of 500 young women residing in Jakarta, aged 18-24 years. To ensure representation from the diverse population of Jakarta, a multi-stage sampling technique was used. In the first stage, five districts were randomly selected from the total number of districts in Jakarta. This was followed by the random selection of two sub-districts within each of the chosen districts. Finally, participants were recruited from these sub-districts using convenience sampling until the required sample size was reached. The inclusion criteria were: (1) female; (2) aged 18-24 years; (3) residing in Jakarta; and (4) willing to

participate in the study. For the qualitative phase, 30 participants were purposively selected from those who participated in the survey. The selection was based on ensuring a diverse range of perspectives based on their contraceptive knowledge, attitudes, and practices. The researchers aimed for a sample that included participants with varying levels of contraceptive knowledge, different attitudes towards contraception (positive, negative, ambivalent), and diverse contraceptive practices (current users of different methods, non-users).

A structured questionnaire was used to collect quantitative data. The development of the questionnaire was based on a review of existing literature and adapted to the Indonesian context. The questionnaire consisted of three sections; Sociodemographic characteristics: This section gathered information on participants' age, education level, marital status, occupation, religion, and socioeconomic status; Knowledge about contraception: This section was designed to assess the participants' knowledge about different contraceptive methods, including their mechanism of action, effectiveness, advantages, disadvantages, and potential side effects. Knowledge was assessed through multiple-choice and true/false questions, with scores calculated based on the number of correct answers; Attitudes towards contraception: This section measured attitudes towards contraception using Likert-scale items. The items included perceived benefits, concerns about side effects, social stigma, and perceived control over contraceptive use; Contraceptive practices: This section assessed current contraceptive use, including the type of method used, reasons for choosing the method, duration of use, and satisfaction with the method. Before the actual data collection, the questionnaire was pre-tested with a small group of young women (n=20) to ensure the clarity and comprehensibility of the questions and the questionnaire as a whole. The data were collected by trained research assistants who administered the questionnaire through face-to-face interviews with the participants. In-depth interviews were conducted with the 30 purposively selected participants. A semi-structured interview guide was used by the researchers to facilitate the exploration of the participants' experiences, beliefs, and perspectives on contraceptive use. The interview guide included open-ended questions, allowing for detailed responses and discussion. The questions focused on the following areas; Sources of information about contraception; Perceptions and beliefs about different contraceptive methods; Factors influencing contraceptive decision-making; Experiences with using contraception (if applicable); Barriers to contraceptive use; Role of family, partners, and peers in contraceptive decision-making. The interviews were conducted in Bahasa Indonesia, the national language of Indonesia, to ensure that the participants were comfortable and could express themselves easily. They were conducted by trained qualitative researchers who were able to establish rapport with the participants and facilitate a comfortable environment for them to share their experiences and perspectives. The interviews were audio-recorded to ensure accuracy and to allow for a thorough analysis later. All interviews were transcribed verbatim for analysis.

The quantitative data obtained from the surveys were analyzed using SPSS software (version 26). Descriptive statistics were used to summarize the sociodemographic characteristics, knowledge scores, attitudes towards contraception, and contraceptive practices of the participants. To identify the factors associated with current contraceptive use among the participants, logistic regression analysis was performed. The qualitative data from the in-depth interviews were analyzed using thematic analysis. The process involved multiple readings of the transcripts by the research team to identify initial codes and patterns. These codes were then grouped into categories, which were further grouped and organized into overarching themes. The team also explored the relationships between the identified themes. The data analysis was conducted by two researchers independently to ensure that the interpretation of data was comprehensive and unbiased. Any discrepancies in the analysis were resolved through discussions among the research team until a consensus was reached.

Ethical approval for the study was obtained from the Ethics Committee of CMHC Indonesia prior to the commencement of the study. Before data collection, informed consent was obtained from all participants. The participants were informed about the purpose of the study, the procedures that would be involved, and the potential risks and benefits of participation. They were also assured of the confidentiality of their responses and that their anonymity would be maintained throughout the study.

3. Results

Table 1 provides a breakdown of the sociodemographic characteristics of the 500 young women who participated in the study. The majority of participants (56%) were between 21-24 years old, with a slightly smaller proportion (44%) aged 18-20. This indicates that the sample primarily consisted of young adults, with a relatively even distribution across the 18-24 age range. Most participants (82%) were unmarried, reflecting the typical demographic of young adults in this age group. A smaller proportion (18%) were married, indicating that the sample captured some diversity in relationship status. The largest group of participants (65%) had completed high school. A substantial minority (34%) had a secondary school education or lower, while a very small percentage (1%) had attained tertiary education. This suggests that the sample predominantly included young women with a high school level of education, with limited representation of those with higher education. The majority of participants (70%) were students, which aligns with the age range and the large proportion of unmarried individuals in the sample. Smaller proportions were employed (20%) or unemployed (10%), reflecting some variation in economic activity. The vast majority of participants (85%) identified as Muslim, consistent with the dominant religion in Indonesia. Smaller proportions identified as Christian (10%) or followed other religions (5%), indicating some religious diversity within the sample.

Table 1. Sociodemographic characteristics of participants (n=500).

Characteristic	Frequency (%)
Age (years)	
18-20	220 (44)
21-24	280 (56)
Marital status	
Unmarried	410 (82)
Married	90 (18)
Education level	
Secondary school or lower	170 (34)
High school	325 (65)
Tertiary education	5 (1)
Occupation	
Student	350 (70)
Employed	100 (20)
Unemployed	50 (10)
Religion	
Islam	425 (85)
Christianity	50 (10)
Other	25 (5)

Table 2 presents the findings related to knowledge, attitudes, and practices regarding contraception among the 500 young women participating in the study. The average knowledge score was 75 out of a possible 100 (with a standard deviation of 15), suggesting a generally good level of understanding about contraception among the participants. However, the standard deviation indicates some variability in knowledge levels. A large majority (84%) correctly identified the mechanism of action of oral contraceptive pills, and 76% correctly identified the effectiveness of condoms. This suggests good awareness of these commonly used methods. Fewer participants (40%) correctly identified the advantages of IUDs. This indicates a potential knowledge gap regarding long-acting reversible contraceptives

(LARCs), which are highly effective but often underutilized. Only 30% correctly identified the disadvantages of implants, another type of LARC. This further highlights the need for improved education and awareness about LARCs. The vast majority (90%) agreed that contraception is important for preventing unintended pregnancy, reflecting a positive overall attitude towards contraceptive use. However, a significant proportion (60%) expressed concerns about the side effects of hormonal contraceptives. Additionally, 40% believed that contraceptive use is associated with social stigma. These findings suggest that while many young women recognize the importance of contraception, concerns about side effects and social stigma may act as barriers to its use.

Slightly over half of the participants (55%) reported currently using contraception. This indicates that while a majority are engaging in contraceptive practices, a substantial proportion are not. Among current users, condoms (30%) and oral contraceptive pills (20%) were the most common methods, followed by injectables (16%). LARCs like IUDs (10%) and implants (5%) were used less frequently. This pattern likely reflects a combination of factors, including accessibility, awareness, and individual preferences. Among non-users, the most common reasons cited were fear of side effects (40%), lack of partner support (25%), and religious concerns (15%). These findings highlight the importance of addressing these barriers to increase contraceptive uptake.

Table 2. Knowledge, attitudes, and practices regarding contraception.

Variable	Category	Frequency (n=500)	Percentage (%)
Knowledge score			
	Mean (SD)	75 (15)	
Knowledge about specific methods			
	Correctly identified mechanism of action of oral contraceptive pills	420	84
	Correctly identified the effectiveness of condoms	380	76
	Correctly identified advantages of IUDs	200	40
	Correctly identified disadvantages of implants	150	30
Attitudes towards contraception			
	Agree that contraception is important for preventing unintended pregnancy	450	90
	Concerned about side effects of hormonal contraceptives	300	60
	Believe contraceptive use is associated with social stigma	200	40
Contraceptive practices			
Current use			
	Yes	275	55
	No	225	45
Method used (among current users)			
	Condoms	83	30
	Oral contraceptive pills	55	20
	Injectables	45	16
	IUDs	28	10
	Implants	14	5
	Other	50	19
Reasons for non-use (among non-users)			
	Fear of side effects	90	40
	Lack of partner support	56	25
	Religious concerns	34	15
	Lack of knowledge	23	10
	Other	22	10

Table 3 presents the results of the logistic regression analysis, which examined the factors associated with current contraceptive use among the 500 participants. Young women aged 21-24 had more than twice the odds (OR=2.15, 95% CI: 1.32-3.50, p=0.002) of using contraception compared to those aged 18-20. This suggests that contraceptive use increases with age within this young adult population. This might be due to increased awareness, greater relationship experience, or a stronger sense of responsibility for preventing pregnancy as they get older. Participants with a high school education had 1.8 times the odds (OR=1.80, 95% CI: 1.10-2.95, p=0.020) of using contraception compared to those with a secondary school education or lower. This indicates a positive association between educational attainment and contraceptive use, possibly due to increased knowledge and access to information. While the odds ratio for those with tertiary education was higher (OR=3.25), the result was not statistically significant (p=0.085). This might be due to the small number of participants in this category, limiting the statistical power to detect a significant difference. Married women had significantly higher odds of using contraception compared to unmarried women (OR=4.50, 95% CI: 2.50-8.10, p<0.001). This is expected, as married women may have a greater desire to plan their families and prevent unintended pregnancies. Young women with positive attitudes towards contraception had 2.75 times the odds (OR=2.75, 95% CI: 1.70-4.45, p<0.001) of using contraception compared to those with negative or neutral attitudes. This highlights the importance of promoting positive attitudes towards contraception to encourage its use.

Table 3. Factors associated with current contraceptive use (n=500).

Variable	Category	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Age (years)				
	18-20 (Reference)	1.00	-	-
	21-24	2.15	1.32 - 3.50	0.002
Education level				
	Secondary school or lower (Reference)	1.00	-	-
	High school	1.80	1.10 - 2.95	0.020
	Tertiary education	3.25	0.85 - 12.40	0.085
Marital status				
	Unmarried (Reference)	1.00	-	-
	Married	4.50	2.50 - 8.10	<0.001
Attitudes towards contraception				
	Negative/Neutral (Reference)	1.00	-	-
	Positive	2.75	1.70 - 4.45	<0.001

Table 4 presents the key themes that emerged from the qualitative analysis of in-depth interviews with 30 young women in urban Indonesia, along with illustrative quotes to support the themes; Perceived Susceptibility to Pregnancy: Many participants held a false sense of security regarding their risk of pregnancy, believing that they were too young or only had occasional sex to become pregnant. Some participants had misconceptions about their fertile window, believing they could only get pregnant on certain days of the month. Some participants relied on unreliable methods like withdrawal, which they believed were sufficient to prevent pregnancy; Partner Communication and Influence: Many participants relied on their partners for information about contraception, and some did not use contraception due to their partner's objections or preferences. Some participants felt embarrassed or uncomfortable

discussing contraception with their partners; Family and Social Influences: Some participants reported that their families discouraged them from using contraception, especially if they were unmarried. Some participants were concerned about social stigma and judgment if they were to use contraception. Some participants felt pressure from family or in-laws to have children soon; Access to Healthcare Services: Some participants were hesitant to seek information or services from healthcare providers due to concerns about confidentiality. Some participants found the healthcare environment to be unwelcoming or uncomfortable, especially when discussing contraception. Some participants reported that the cost of contraceptives was a barrier to their access; Religious Beliefs: Some participants were unsure about whether using contraception was allowed in their religion. Some participants interpreted their religious beliefs as supporting responsible family planning, which included using contraception.

Table 4. Qualitative findings: themes and illustrative quotes.

Theme	Sub-theme	Quote
Perceived susceptibility to pregnancy	Low-risk perception	"I don't think I can get pregnant now because I'm still young and only have sex occasionally." (Participant 12, unmarried, non-user)
	Misconceptions about fertility	"I heard that you can only get pregnant during certain days of the month, so I'm not worried." (Participant 8, unmarried, non-user)
	Reliance on unreliable methods	"We just use the withdrawal method. I think it's safe enough." (Participant 5, unmarried, non-user)
Partner communication and influence	Reliance on a partner for information	"My boyfriend told me that the pill is harmful, so I don't want to use it." (Participant 18, unmarried, non-user)
	Partner's opinion influencing choice	"My husband prefers condoms, so that's what we use." (Participant 25, married, condom user)
	Difficulty discussing contraception	"I feel embarrassed to talk about these things with my boyfriend." (Participant 15, unmarried, non-user)
Family and social influences	Family discouraging contraceptive use	"My parents said that using contraception is a sin, especially if you're not married." (Participant 3, unmarried, non-user)
	Social stigma associated with use	"People will think I'm easy if I use the pill." (Participant 10, unmarried, non-user)
	Social pressure to have children	"My in-laws are pressuring us to have a baby soon." (Participant 28, married, non-user)
Access to healthcare services	Concerns about confidentiality	"I'm afraid to go to the clinic because I don't want people to know I'm sexually active." (Participant 22, unmarried, non-user)
	Lack of youth-friendly services	"The doctor at the clinic made me feel uncomfortable when I asked about contraception." (Participant 16, unmarried, non-user)
	Cost barriers	"I can't afford the IUD. It's too expensive." (Participant 7, unmarried, non-user)
Religious beliefs	Concerns about religious prohibitions	"I'm not sure if using contraception is allowed in my religion." (Participant 20, unmarried, non-user)
	Interpreting religion as supporting family planning	"Islam teaches us to be responsible in planning our families, so I use contraception to space my children." (Participant 29, married, IUD user)

4. Discussion

Our study revealed a nuanced picture of contraceptive knowledge among young women in urban Indonesia. While the quantitative data indicated a generally good level of understanding about contraception, with an average knowledge score of 75

out of 100, it also exposed critical gaps and misconceptions, especially concerning Long-Acting Reversible Contraceptives (LARCs) like IUDs and implants. This finding aligns with existing literature from Indonesia and other regions, which consistently reports limited knowledge and awareness about LARCs. Many participants held misconceptions about LARCs, often stemming from inaccurate information passed down through social networks or influenced by cultural beliefs. Some believed that IUDs could "get lost" inside the body or cause infertility, while others expressed concerns about implants causing weight gain or hormonal imbalances. These unfounded fears often overshadowed the actual benefits and safety profiles of these methods. A significant number of participants had limited exposure to information about LARCs. They primarily received information about condoms and oral contraceptive pills, which are more widely promoted and readily available. This lack of exposure contributed to a perception that LARCs were "unfamiliar" or "complicated" methods, leading to hesitancy and a preference for more familiar options. In some cases, cultural and social norms played a role in shaping perceptions about LARCs. For instance, some participants expressed concerns about using IUDs before having children, believing it could affect their future fertility. These beliefs, often rooted in traditional practices or societal expectations, can create barriers to accessing and utilizing these highly effective methods. The implications of this knowledge gap are significant. LARCs are among the most effective contraceptive methods available, with failure rates of less than 1%. Their underutilization, driven by misinformation and limited awareness, contributes to the persistence of unintended pregnancies, especially among young people. This, in turn, can lead to unsafe abortions, adverse health outcomes for both mother and child, and perpetuate a cycle of social and economic disadvantage. Integrating comprehensive sexuality education into school curricula is crucial. This education should go beyond basic reproductive anatomy and include detailed information about various contraceptive methods, their mechanisms of action, effectiveness, advantages, and disadvantages. It's essential to dispel myths and misconceptions surrounding LARCs, emphasizing their safety and efficacy. Public health campaigns specifically targeting young people and addressing their concerns about LARCs can be highly effective. These campaigns can utilize various platforms, including social media, educational videos, and community outreach programs, to disseminate accurate information and promote informed decision-making. Equipping healthcare providers with the knowledge and skills to effectively counsel young people about LARCs is crucial. They should be trained to address individual concerns, dispel myths, and provide clear and unbiased information about the benefits and risks of different methods. Ensuring easy access to LARCs, including affordable options and youth-friendly services, can encourage their uptake. This involves removing financial barriers, providing convenient clinic locations, and training healthcare providers to offer non-judgmental and supportive care. Our research explored the complexities of attitudes towards contraception among young women in urban Indonesia, revealing a landscape shaped by both positive viewpoints and persistent concerns. While the quantitative data showed a generally favorable attitude towards contraception, with 90% of participants agreeing with its importance in preventing unintended pregnancies, the qualitative data uncovered a deeper layer of anxieties and reservations. One of the most prominent concerns was the potential for side effects, particularly with hormonal methods like pills and injectables. Many participants expressed fears about the perceived health risks associated with these methods, including weight gain, mood swings, irregular bleeding, and long-term effects on fertility. These fears, often fueled by anecdotal evidence, rumors, or misinformation from unreliable sources, created a sense of apprehension and distrust towards hormonal contraception. Many participants had limited access to reliable information about the potential side effects of different contraceptive methods. They relied on informal sources, such as friends, family, or social media, which often perpetuated myths and exaggerated the risks. Some participants had personal experiences with side effects, either from their own use

or from observing others. These experiences, while valid, sometimes led to generalizations about all hormonal methods, creating a barrier to considering other options. In some cases, cultural beliefs and perceptions influenced attitudes towards hormonal contraception. For instance, some participants believed that altering one's natural hormonal balance could have negative consequences on health and well-being. Another significant concern was the social stigma associated with contraceptive use, particularly for unmarried women. Many participants expressed fears of being judged or ostracized if they were known to be using contraception. In Indonesian society, traditional gender roles and expectations often place a high value on a woman's ability to bear children. Using contraception, especially before marriage, can be seen as deviating from these norms and inviting social disapproval. Some participants expressed concerns about religious or moral objections to contraception. While the majority of Indonesians are Muslim, and Islam generally supports the use of contraception for family planning, interpretations can vary, and some individuals may hold more conservative views. The fear of gossip and judgment within their communities also influenced some participants' attitudes towards contraception. They worried that using contraception could damage their reputation or lead to social isolation. Providing comprehensive sexuality education that includes accurate information about contraceptive methods, their potential side effects, and how to manage them is crucial. This education should be delivered in a non-judgmental and culturally sensitive manner, addressing individual concerns and dispelling myths. Healthcare providers should be equipped to provide clear and unbiased information about contraception, including potential side effects and how to mitigate them. They should be trained to offer individualized counseling, addressing specific concerns and empowering young women to make informed choices about their reproductive health. Public awareness campaigns can play a vital role in destigmatizing contraceptive use and promoting positive social norms. These campaigns can utilize various media platforms, including television, radio, social media, and community outreach programs, to reach a wide audience and challenge negative stereotypes. Engaging community and religious leaders in promoting positive attitudes towards contraception can be highly effective. Their influence can help dispel misconceptions, address religious or moral concerns, and create a more supportive environment for young women. Encouraging open communication about contraception between partners, families, and peers can help reduce stigma and foster a more supportive environment. This can be achieved through relationship education programs, peer support groups, and community dialogues. Our study revealed that 55% of the participants were currently using contraception, indicating a moderate prevalence. Among those using contraception, condoms and oral contraceptive pills were the most common methods, followed by injectables. This pattern aligns with observations from other studies in Indonesia, where these methods are widely available and accessible. However, the relatively low use of LARCs, such as IUDs and implants, is concerning, given their high effectiveness in preventing unintended pregnancies. The qualitative data provided valuable insights into the factors that influence contraceptive choices and practices among young women in urban Indonesia. Many participants revealed a reliance on their partners for information and decision-making regarding contraception. Some women reported not using contraception due to their partner's objections or preferences. This reliance on partners highlights the need to include men in family planning discussions and interventions. Furthermore, some participants expressed difficulties discussing contraception with their partners due to embarrassment or fear of disapproval. These communication challenges can hinder informed decision-making and contraceptive use. Family and social influences also played a significant role in shaping contraceptive practices. Some participants reported pressure from their families to have children, particularly after marriage. This pressure can limit their ability to make autonomous decisions about contraceptive use. Additionally, concerns about social stigma associated with contraceptive use, especially for unmarried women, were prevalent. This stigma can create

barriers to accessing and using contraception effectively. While not extensively discussed in the qualitative findings, access to healthcare services is another crucial factor influencing contraceptive practices. Concerns about confidentiality, lack of youth-friendly services, and cost barriers can all hinder access to contraception. Religious beliefs can also influence contraceptive practices. Some participants expressed concerns about religious prohibitions against contraception, while others interpreted their religious beliefs as supporting responsible family planning, including the use of contraception. These findings underscore the importance of empowering young women to make autonomous decisions about their reproductive health. Programs should help young women develop the skills and confidence to discuss contraception openly with their partners, families, and healthcare providers. Interventions should address power imbalances in relationships and promote shared decision-making regarding reproductive health. Public awareness campaigns and community engagement programs can help challenge negative stereotypes and social stigma associated with contraceptive use. Healthcare providers should be trained to provide non-judgmental and confidential counseling on all contraceptive methods, including LARCs. Efforts should be made to address cost barriers and improve the availability of a wide range of contraceptive options. Our logistic regression analysis identified several factors associated with current contraceptive use among young women in urban Indonesia. The analysis revealed that older age was significantly associated with contraceptive use. Young women aged 21-24 had more than twice the odds of using contraception compared to those aged 18-20. This finding aligns with previous research, which suggests that contraceptive use tends to increase with age. Several factors may contribute to this association. As young women grow older, they may gain greater awareness and knowledge about contraception and its benefits. Have more experience in relationships and a greater understanding of the risks of unintended pregnancy. Develop a stronger sense of responsibility for their reproductive health and a greater desire to control their fertility. Become less influenced by social stigma or disapproval surrounding contraceptive use. Education level was also found to be a significant predictor of contraceptive use. Participants with a high school education had 1.8 times the odds of using contraception compared to those with a secondary school education or lower. This finding suggests that higher educational attainment may be associated with increased contraceptive knowledge, access to information, and a greater sense of agency in making decisions about reproductive health. Marital status was another significant factor, with married women having 4.5 times the odds of using contraception compared to unmarried women. This finding is consistent with expectations, as married women may have a greater desire to plan their families and prevent unintended pregnancies. Positive attitudes towards contraception were also strongly associated with its use. Young women with positive attitudes had 2.75 times the odds of using contraception compared to those with negative or neutral attitudes. This finding highlights the importance of addressing concerns, dispelling myths, and promoting positive perceptions about contraception to encourage its use. These findings have important implications for the design and implementation of interventions aimed at increasing contraceptive use among young women. Tailored interventions may be needed to reach younger women (18-20) and address the lower prevalence of contraceptive use in this age group. Improving education and access to information is crucial, particularly for those with lower education levels. Promoting positive attitudes towards contraception and addressing concerns about side effects and stigma are essential. Providing youth-friendly services that are accessible and appealing to young women can help increase contraceptive uptake. By addressing these factors, interventions can effectively promote informed decision-making and empower young women to take control of their reproductive health.[11-15]

Comprehensive sexuality education (CSE) plays a crucial role in empowering young people to make informed decisions about their sexual and reproductive health. Our findings highlight the need for CSE programs that are tailored to the specific

needs of young people in urban Indonesia and address a wide range of topics related to sexuality, relationships, and reproductive health. CSE programs should be designed to be age-appropriate and culturally relevant, taking into account the specific social and cultural context of young people in Indonesia. Programs should provide scientifically accurate information about sexual and reproductive health, including information about various contraceptive methods, their effectiveness, advantages, disadvantages, and potential side effects. CSE should not only focus on providing information but also on developing essential life skills, such as critical thinking, communication, negotiation, and decision-making skills. These skills can help young people navigate relationships, make informed choices about their sexual health, and protect themselves from unintended pregnancy and sexually transmitted infections. CSE programs should promote healthy relationships based on equality, respect, and consent. They should address issues such as gender stereotypes, power dynamics, and communication skills, empowering young people to form and maintain healthy relationships. CSE programs should address social and cultural norms that may hinder contraceptive use or create barriers to accessing sexual and reproductive health services. This can include discussions about gender roles, stigma, and religious beliefs. CSE programs should be interactive and engaging, using a variety of teaching methods to cater to different learning styles. This can include group discussions, role-playing, games, and multimedia resources. CSE programs should be delivered by trained educators who are knowledgeable about sexual and reproductive health and can create a safe and supportive learning environment for young people. CSE programs can be implemented in various settings, including schools, community centers, and healthcare facilities. Collaboration among government agencies, educational institutions, and community-based organizations is essential to ensure the successful implementation of CSE programs. In addition to CSE, it is crucial to ensure that young people have access to youth-friendly healthcare services. This means creating a welcoming and non-judgmental environment where young people feel comfortable seeking information and care related to their sexual and reproductive health. Young people should be assured that their consultations and treatments will be kept confidential. This is essential to build trust and encourage young people to seek care without fear of judgment or stigma. Youth-friendly services should offer a wide range of sexual and reproductive health services, including contraception counseling, STI testing and treatment, and pregnancy care. Healthcare providers should be trained to address the specific needs and concerns of young people. They should be able to provide accurate information, answer questions in a non-judgmental way, and offer support and counseling. Youth-friendly services should be accessible and affordable, with convenient locations and flexible hours to accommodate young people's schedules. The physical environment of healthcare facilities should be welcoming and youth-friendly, with comfortable waiting areas and private consultation rooms. Social and cultural barriers can significantly hinder contraceptive use and access to sexual and reproductive health services. Public awareness campaigns can help raise awareness about sexual and reproductive health, promote positive attitudes towards contraception, and challenge negative stereotypes and stigma. These campaigns can utilize various media platforms, including television, radio, social media, and community events. Engaging with community members, including parents, religious leaders, and community influencers, is essential to address social and cultural norms that may hinder contraceptive use. Community dialogues, workshops, and outreach programs can help foster a more supportive environment for young people's sexual and reproductive health. Promoting gender equality and empowering women is crucial to address the root causes of many social and cultural barriers to contraceptive use. This can include programs that promote girls' education, economic empowerment, and leadership opportunities. Advocacy efforts are needed to ensure that policies and laws support young people's access to sexual and reproductive health services and information. This can include advocating

for comprehensive sexuality education in schools, removing legal barriers to accessing contraception, and ensuring that healthcare services are affordable and accessible to all young people. Open and honest communication between partners is essential for making informed decisions about contraception and ensuring both individuals feel comfortable and respected in their reproductive choices. Our findings highlight the need for programs that promote open communication and shared decision-making between partners regarding contraception. Relationship education and counseling services can play a vital role in fostering healthy communication patterns and empowering couples to discuss contraception openly and honestly. Couples can learn effective communication skills, including active listening, expressing needs and concerns clearly, and negotiating mutually agreeable solutions. Education about various contraceptive methods, their effectiveness, advantages, and disadvantages can help couples make informed decisions together. Discussions about gender roles and expectations can help challenge traditional norms that may hinder open communication about sexuality and contraception. Learning conflict resolution skills can help couples navigate disagreements about contraception and find solutions that respect both partners' needs and preferences. Relationship education can help couples build trust and intimacy, creating a safe space for open and honest communication about sexual health and contraception. Cost can be a significant barrier to accessing contraception, especially for young people from low-income backgrounds. Ensuring that contraceptives are affordable and accessible is crucial to promoting their use and preventing unintended pregnancies. Government programs can provide subsidies or free contraception to young people, particularly those from low-income families. Expanding insurance coverage for contraceptive services can make them more affordable for many young people. Community health clinics can offer contraceptive services at reduced costs or on a sliding scale based on income. Public health agencies can negotiate with pharmacies to offer lower prices on contraceptives for young people. Promoting the use of generic contraceptives can help reduce costs. Technology offers innovative ways to provide information and support for young people regarding contraception. Mobile applications, online platforms, and social media campaigns can be effective tools for reaching young people and providing them with accessible and convenient information about contraception. Mobile apps can provide a wealth of information about contraception, including different methods, how to use them correctly, where to access services, and answers to frequently asked questions. Some apps even offer personalized reminders and tracking tools to help users stay on top of their contraceptive needs. Websites and online forums can provide comprehensive information about contraception, including articles, videos, and interactive tools. These platforms can also offer a safe space for young people to ask questions, share experiences, and connect with peers and healthcare providers. Social media campaigns can be used to raise awareness about contraception, promote positive attitudes, and address misconceptions. These campaigns can utilize engaging content, such as videos, infographics, and personal stories, to reach a wide audience and encourage young people to learn more about contraception. Telehealth services can provide remote access to contraceptive counseling and prescriptions, making it easier for young people to access care, especially those in rural areas or with limited transportation options. Technology can make information and services more accessible to young people, especially those who may face barriers to traditional healthcare settings. Young people can access information and support at any time and from any location, making it easier to fit into their busy schedules. Technology can provide a sense of anonymity, which may encourage young people to seek information and support that they may be hesitant to discuss in person. Technology can offer interactive learning experiences, such as quizzes, games, and simulations, which can be more engaging and effective than traditional educational materials. By implementing these strategies, we can create a more supportive environment for young people in urban Indonesia to make informed decisions about

their sexual and reproductive health, reduce unintended pregnancies, and improve their overall well-being.[16-20]

5. Conclusion

This mixed-methods study provides valuable insights into the contraceptive knowledge, attitudes, and practices of young women in urban Indonesia. Our findings reveal a complex interplay of factors influencing contraceptive behavior, including knowledge gaps, concerns about side effects and social stigma, partner communication, and family and social influences. While overall knowledge was relatively good, misconceptions about LARCs persist, highlighting the need for comprehensive sexuality education that addresses these gaps and promotes informed decision-making. Positive attitudes towards contraception are encouraging, but concerns about side effects and social stigma underscore the importance of destigmatizing contraceptive use and providing youth-friendly healthcare services. Addressing social and cultural barriers, strengthening partner communication, and utilizing technology to provide information and support are crucial for empowering young women to take control of their reproductive health. By addressing these factors, public health interventions can effectively promote informed contraceptive use, reduce unintended pregnancies, and improve reproductive health outcomes among young women in urban Indonesia.

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