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From Discontinuation to Commitment: A Participatory Model for Contraceptive Adherence

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ABSTRACT

Background: Contraceptive discontinuation due to side effects, health concerns, desire for pregnancy, dissatisfaction, or other personal or external factors, except for the explicit intention to become pregnant, remains a critical challenge in reproductive health programs, threatening program sustainability and maternal health outcomes. This requires innovative health promotion models that address multi-dimensional factors influencing contraceptive behavior. Understanding the pathway from discontinuation to continuity is essential for designing effective, context-specific interventions.

Purpose: This study aimed to develop a comprehensive health promotion model that transforms contraceptive discontinuation patterns into sustained commitment based on stakeholder-informed model development in Malang Regency, Indonesia, utilizing Health Belief Model and Social Cognitive Theory as theoretical foundations

Methods: An exploratory qualitative study using Grounded Theory methoology was conducted through Focus Group Discussions (FGDs) to capture diverse perspectives and encourage interaction among stakeholders approximately 90-120 minutes. FGDs involves key stakeholders including heads of Population and Family Planning Department, health center directors, midwives, Family Planning Field Officers (PLKB), and community health workers in Malang Regency. Data analysis followed the three-stage Grounded Theory coding process: open coding, axial coding, and selective coding.

Results The designed health promotion model encompasses five interconnected dimensions grounded in Health Belief Model and Social Cognitive Theory: Individual Factors (knowledge, attitudes, self-efficacy), Environmental Factors (social support, healthcare accessibility), Behavioral Factors (observational learning, reinforcement), Perceptions (perceived risks, benefits, barriers), and Sustained Participation in Contraceptive Services. The transformation pathway "from discontinuation to commitment" was identified through innovative strategies including the "Susimilek" program (husband involvement in contraceptive selection), community health worker engagement, and data-driven policy interventions. The model demonstrates how addressing multi-level determinants can convert discontinuation patterns into sustained contraceptive commitment, particularly addressing cultural, geographical, and structural barriers specific to Indonesian context.

Conclusion: The designed health promotion model provides a comprehensive theoretical and practical framework for transforming contraceptive discontinuation patterns into sustained commitment through evidence-based, multi-level interventions. This culturally-sensitive model offers practical guidance for contraceptive services to enhance continuation rates and build long-term commitment among acceptors in similar low-middle income country contexts.

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INTRODUCTION

Contraceptive discontinuation represents a critical challenge in global reproductive health, with rates reaching 34% among reproductive-age women in developing countries.[1] This high discontinuation rate contributes significantly to family planning, affecting over 200 million women globally who desire to avoid pregnancy but are not using modern contraceptive.[2] Multiple studies confirm that high rates of contraceptive discontinuation are directly associated with increased unmet need for family planning. In Indonesia, for example, higher discontinuation rates were found to be directly proportional to higher unmet need, with nearly 1.6 million additional unwanted pregnancies attributed to discontinuation.[3]

Contraceptive discontinuation is defined as when an individual "begins a contraceptive technique and ceases it for any reason while still at risk of becoming pregnant".[4] This includes stopping a method due to side effects, health concerns, desire for pregnancy, dissatisfaction, or other personal or external factors.[5] Discontinuation can apply to all types of contraceptive methods—modern or traditional. The consequences extend beyond individual health outcomes, threatening progress toward Sustainable Development Goal 3 (Good health and well-being) and increasing risks of unplanned pregnancies, unsafe abortions, and maternal mortality, particularly in resource-limited settings.

Understanding contraceptive discontinuation requires a multi-level perspective encompassing individual, social, and structural factors. The Health Belief Model (HBM) and Social Cognitive Theory (SCT) provide complementary theoretical frameworks for addressing this complexity.[6] HBM explains contraceptive discontinuation through constructs such as perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. For example, women who believe contraception causes serious health problems or interferes with menses are more likely to discontinue use, highlighting the role of perceived barriers and severity.[8] Provider communication and acknowledgment of patient concerns also influence perceived barriers and self-efficacy.[9] SCT emphasizes the influence of social norms, observational learning, and reciprocal determinism (interaction between individual, behavior, and environment). Community beliefs, peer influence, and partner attitudes shape contraceptive behaviors. For instance, concerns about social conflict or community disapproval can drive discontinuation, while positive beliefs (e.g., contraception preserves beauty) can support continued use.[10,11] Social networks and influencers, including healthcare providers and peers, play a critical role in shaping attitudes and behaviors.[8,9,10,11] Male involvement emerges as a critical yet underexplored factor, with studies showing that only 37% of men actively participate in contraceptive decision-making despite 83.3% expressing general support.[12]

Indonesia presents unique challenges for contraceptive continuation, including diverse cultural and religious factors, geographical barriers, and implementation gaps between national policies and local realities. With a population exceeding 270 million and significant regional variations in family planning uptake, Indonesia requires context-specific approaches that address cultural sensitivities while ensuring equitable access to quality services. Despite extensive research on contraceptive discontinuation, significant gaps remain in developing comprehensive, theoretically grounded models that address multi-level determinants and transform discontinuation patterns into sustained commitment.

This study aims to develop a comprehensive health promotion model to reduce contraceptive discontinuation and strengthen sustained commitment among acceptors in Malang Regency, Indonesia.

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Utilizing Grounded Theory methodology and integrating Health Belief Model and Social Cognitive Theory as theoretical foundations, this research proposes an evidence-based framework thay addresses multi-level determinants of contraceptive behavior, including male involvement strategies and community-based interventions.

METHOD

Study design and Theoretical Framework:

This study employed an exploratory qualitative research design utilizing Grounded Theory methodology as described by Miles, Huberman, and Saldaña (2014). Grounded Theory was selected for its capacity to develop new theoretical models from empirical data, particularly suitable for understanding complex phenomena such as contraceptive discontinuation patterns. The study integrated Health Belief Model (HBM) and Social Cognitive Theory (SCT) as theoretical foundations to understand multi-level factors influencing contraceptive behavior and to guide the development of a comprehensive health promotion model.

Study Setting

The research was conducted in Malang Regency, East Java, Indonesia on 8th August 2025. Malang Regency was purposively selected due to its diverse geographical characteristics, varied cultural and religious demographics, and the presence of innovative family planning programs such as "Susimilek" (husband involvement in contraceptive selection). The regency covers 1,772 healthcare facilities and serves a population with significant variations in family planning uptake and contraceptive continuation rates.

Participants and Sampling

There are 53 participants were selected using purposive sampling to ensure representation of key stakeholders involved in family planning program implementation and policy development. The sample included:

1. Policy level: Head of Population and Family Planning Department, Head of Health Department
2. Program management level: Head of Health Centers, Family Planning Program Coordinators
3. Service delivery level: Midwives (coordinator and field-level), Family Planning Field Officers (PLKB)
4. Community level: Community health workers (Kader KB)

Inclusion criteria were: (1) minimum two years of experience in family planning programs, (2) direct involvement in contraceptive service delivery or program management, and (3) willingness to participate in focus group discussions. Sample size was determined by theoretical saturation, achieved when no new themes emerged from the data.

Data Collection

Data collection was conducted through two Focus Group Discussions (FGDs). The first FGD was attended by 27 participants and the second FGD by 26 participants. Participants were grouped based on their involvement in family planning program implementation and policy development. The FGDs lasted approximately four hours to capture diverse perspectives and encourage interaction among stakeholders. The FGDs were facilitated by the principal investigator and assisted by trained research assistants experienced in qualitative research, as well as an external facilitator who was an obstetrician-gynecologist with a subspecialty in social medicine.

A semi-structured discussion guide was developed based on HBM and SCT constructs, covering topics including current family planning policies and implementation strategies, factors contributing to contraceptive discontinuation, prevention and intervention approaches, stakeholder roles and coordination mechanisms, resource allocation and system capacity and cultural and contextual challenges.

All FGDs were conducted in Indonesian, audio-recorded with participants' consent, and transcribed verbatim. Field notes were maintained throughout the data collection process to capture non-verbal communications and contextual observations.

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Data Analysis

Data analysis followed the three-stage Grounded Theory coding process described by Miles, Huberman, and Saldaña (2014):

a. Open Coding
   Initial analysis involved fragmenting transcribed data into discrete segments and assigning conceptual codes to identify emerging patterns. Each meaningful statement or concept was labeled with descriptive codes representing the essence of participants' experiences and perspectives.
b. Axial Coding
   Open codes were systematically grouped into broader categories based on conceptual similarities and relationships. This stage focused on identifying connections between concepts, patterns of causation, and the conditions under which certain phenomena occurred.
c. Selective Coding
   The final stage involved identifying the core category that explained the central phenomenon and integrating all categories around this central concept. This process resulted in the development of a comprehensive theoretical model explaining the pathway from contraceptive discontinuation to sustained commitment.

Throughout the analysis, constant comparative method was employed to compare data within and across FGD sessions. Team meetings involving multiple researchers were held regularly to discuss emerging themes, resolve discrepancies, and ensure analytical rigor.

Integration of Theoretical Frameworks

Health Belief Model constructs (perceived susceptibility, severity, benefits, barriers, self-efficacy, and cues to action) and Social Cognitive Theory components (personal factors, environmental influences, and behavioral factors) were used to organize and interpret findings. This integration enabled the development of a multi-level model addressing individual, social, and structural determinants of contraceptive behavior.

Rigor and Trustworthiness

Several strategies were implemented to ensure research rigor:

Credibility: Triangulation through multiple stakeholder perspectives and prolonged engagement to obtain diverse perspectives with the research context

Transferability: Detailed description of setting, participants, and context to enable assessment of applicability to similar settings

Dependability: Systematic documentation of the research process, including interview procedures, coding development, theme generation,all analytical decisions and maintenance of audit trails

Confirmability: Regular team debriefing sessions and peer examination of findings and interpretations to ensure that the findings were grounded in participants narratives rather than researcher perspectives alone.

Ethical Considerations

Ethical approval number 296/EC/KEPK/09/2025 was obtained from Ethic Committee, Faculty of Medicine, Universitas Brawijaya. All participants provided written informed consent prior to participation. Confidentiality was maintained using participant codes, secure data storage, and restricted access to identifiable information. Participants were informed of their right to withdraw from the study at any time without consequences.

Data Management

All audio recordings were stored securely and transcribed by trained personnel. Data analysis was conducted using Nvivo to facilitate systematic coding and theme development.

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RESULTS AND DISCUSSION

Data Analysis Overview

Through systematic Grounded Theory analysis, this study processed Focus Group Discussion data involving key stakeholders in family planning program implementation in Malang Regency. The three-stage coding process—open coding, axial coding, and selective coding—revealed critical insights into factors influencing contraceptive discontinuation. During open coding, participants' statements were broken down into meaningful units and assigned initial codes.In the axial coding stage, related codes were grouped into broader categories by identifying relationships among them. Finally, in the selective coding stage, these categories were integrated into overarching themes that explained contraceptive discontinuation. The analysis yielded 18 initial open codes, which were subsequently organized into 7 main categories through data reduction, ultimately converging into a core category representing sustained contraceptive commitment through multi-level health promotion approaches.

Main Categories: Stakeholder Perspectives Analysis

Table 1. Seven Main Categories from FGD Analysis

Main Category	Key Components	HBM/SCT Alignment	Stakeholder emphasis
Policy and Operational Strategy	PK21 data system, Susimilek innovation, cross-agency collaboration	SCT: Environmental policy influences	High - Policy and management levels
Dropout Prevention and Monitoring Programs	Spousal counseling, budget allocation, community worker engagement	HBM: Cues to action; SCT: Social support	High - All stakeholder levels
Resources	Provider competency, training needs, funding mechanisms	SCT: Environmental resources	Medium-high - Healthcare providers
Cross-Sector Coordination	KIA-KB-Health promotion integration, cross-unit synergy	SCT: Collective efficacy	Moderate - with improvement needs
Structural and Policy Challenges	Religious resistance, BPJS policy gaps, provider competency gaps	HBM: Perceived barriers	High - Field workers and community
Factors Contributing to Unmet Need and Dropout	Individual, social, and structural determinants	HBM: All constructs; SCT: Reciprocal determinism	Very high - All participant types
Prevention and Education Efforts	Repeated counseling, community education, digital systems	HBM: Knowledge, self-efficacy; SCT: Observational learning	Medium-high - Prevention focus

1. Policy and Operational Strategy

   Stakeholders emphasized evidence-based policy implementation utilizing systematic family data collection (PK21). A Family Planning Department Head explained:

   "We operate based on family data collection (PK21), documenting reasons for non-use or discontinuation of contraceptives... The 'Susimilek' innovation (husband chooses contraceptive method) effectively engages males in decision-making processes."

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This category highlights environmental influences within Social Cognitive Theory, particularly through systematic data utilization and participatory innovations such as Susimilek that support contraceptive continuation. The use of participatory approaches also indicates efforts to strengthen policy support in addressing gaps in male involvement.

2. Dropout Prevention and Monitoring Programs

Comprehensive prevention strategies incorporating multi-level interventions emerged as critical components. Healthcare providers described:

"Involving husbands in counseling may help support continued contraceptive use. Regional budget finances IUD, implants, service provision, consumption, transportation, and acceptor mobilization."

The mobilization of nearly 4,000 community health workers represents HBM's cues to action and SCT's social support, providing continuous reinforcement for sustained contraceptive use through advocacy, monitoring, and community mobilization.

3. Resources

Resource capacity challenges were consistently identified across stakeholder groups. Health officials noted:

"*Human resources require enhanced competency development. Side effects must be managed from initial insertion. Updated PELKON training is necessary."*

This aligns with SCT's environmental factors, where resource availability and provider competency directly influence contraceptive service quality and continuation rates. Funding mechanisms through BOKB and regional budgets support service delivery, though gaps remain in side effect management coverage.

4. Cross-Sector Coordination

Cross-sector coordination challenges emerged as implementation barriers. Health department representatives identified:

"Husbands are rarely involved in family planning services, particularly regarding side effects. Synergy in IEC (Information, Education, Communication) and health promotion is essential."

This reflects SCT's collective efficacy needs, where coordinated multi-sectoral approaches enhance program effectiveness. The gap between policy planning and field implementation indicates need for strengthened coordination mechanisms.

5. Structural and Policy Challenges

Structural barriers significantly impact contraceptive adoption and continuation. Multiple stakeholders emphasized:

"Religious factors continue to dominate family planning rejection... In Islamic boarding school areas, communities reject contraception due to religious considerations."

These challenges represent HBM's perceived barriers and SCT's environmental constraints that require culturally sensitive intervention approaches. BPJS policy gaps in covering side effect management create additional structural barriers.

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6. Factors Contributing to Unmet Need and Dropout

   Multi-level determinants of discontinuation emerged across individual, social, and structural dimensions:

   a. Individual Level (HBM: Perceived barriers, susceptibility):

      "Side effects and complication rates... IUD causes bleeding and pain during menstruation."

   b. Social Level (SCT: Social environment):

      "Some individuals who have adopted family planning are instructed to discontinue by their families. Such cases exist in Pakis"

   c. Structural Level (SCT: Environmental barriers):

      "Regarding access, the terrain is indeed challenging... in these five sub-districts, the coverage area is extensive, encompassing mountainous regions"

7. Prevention and Education Efforts

   Prevention and education strategies focus on addressing knowledge gaps and misconceptions:

   "We conduct repeated education about side effects to prevent acceptor misperceptions... Education typically occurs through community health workers."

   This approach integrates HBM's knowledge and self-efficacy components with SCT's observational learning through community health worker networks, complemented by digital monitoring systems for early dropout identification.

Core Category: Multi-Level Health Promotion Model

The selective coding process revealed the central phenomenon: "Sustained Contraceptive Commitment through Multi-Level and Participatory Approaches." This integrates Health Belief Model and Social Cognitive Theory constructs into five interconnected dimensions.

Table 2. Five-Dimension Health Promotion Model

Dimension	HBM Integration	SCT Integration	FGD Evidence
Individual Factors	Perceived benefits, barriers, self-efficacy	Personal factors, self-regulation	Knowledge gaps, fear, misconceptions
Environmental Factors	Social support, cues to action	Environmental influences, social support	Susimilek program, accessibility, provider competency
Behavioral Factors	Modifying factors	Observational learning, reinforcement	Peer experiences, kader education role
Perceptions	Core constructs (risk, benefits, barriers)	Outcome expectations	Side effect perceptions, religious beliefs

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Contraceptive Participation	Health behavior maintenance	Behavioral capability	Quality engagement, method selection, follow-up

Model Integration

The analysis demonstrates how HBM and SCT constructs operate synergistically:

a. Individual + Perceptions (HBM core) → Internal motivation for contraceptive use
b. Environmental + Behavioral (SCT emphasis) → External support and social learning
c. Contraceptive Participation → Comprehensive health behavior outcome

The innovative Susimilek program exemplifies this integration:

"Direct counseling with both husband and wife is more effective, as the husband feels involved in decision-making."

This finding indicates that involving husbands in counseling sessions may help strengthen shared decision-making and create a more supportive environment for contraceptive continuation.This addresses HBM's social support needs while leveraging SCT's environmental modification to create supportive conditions for contraceptive continuation.

Implementation Framework

The seven categories converge into a practical framework where:

1. Policy and Operational Strategy provide the foundation through data-driven, participatory approaches
2. Dropout Prevention and Monitoring Programs implement targeted interventions
3. Resources ensure adequate capacity and competency
4. Cross-Sector Coordination enables comprehensive service delivery
5. Structural and Policy Challenges require adaptive, culturally sensitive solutions
6. Factors Contributing to Unmet Need and Dropout inform intervention targeting
7. Prevention and Education Efforts provide ongoing support and reinforcement

This multi-dimensional approach transforms contraceptive discontinuation patterns into sustained commitment through theoretically grounded, stakeholder-informed health promotion strategies.

Figure 1. Integrated Health Promotion Model for Contraceptive Continuity

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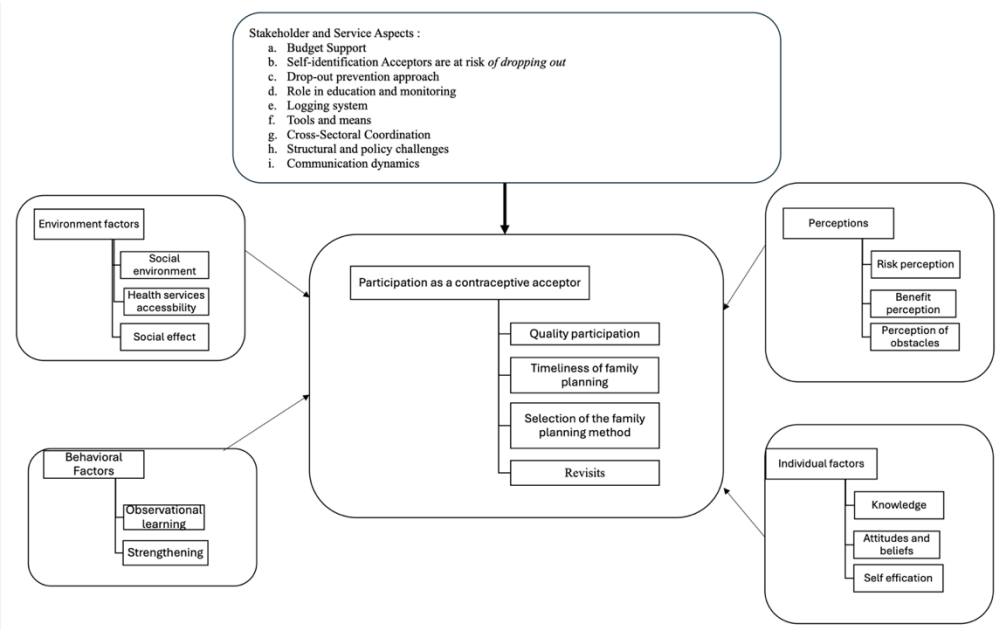

Note: Conceptual diagram showing the relationships between the seven categories, five dimensions, and their relationship to the core category of sustained contraceptive commitment as identified through the qualitative analysis.

Theoretical Framework Integration

The systematic analysis of FGD data through Grounded Theory methodology revealed empirical evidence supporting the integration of Health Belief Model and Social Cognitive Theory constructs. Stakeholder responses demonstrated practical applications of theoretical concepts in field implementation:

1. Empirical Evidence for HBM Application: Addressing perceived barriers through education

   "We conduct repeated education about side effects to prevent acceptor misperceptions."

2. Empirical Evidence for SCT Application: Environmental support and observational learning

   "Education typically occurs through community health workers, providing knowledge about contraceptive side effects and mechanisms for community dissemination."

3. Empirical Evidence for Integrated Approach: Systematic data use with participatory engagement

   "We operate based on family data collection (PK21). The Susimilek innovation engages males in contraceptive selection."

This theoretical integration emerged organically from the data analysis process, demonstrating how field practices align with established health behavior theories while revealing opportunities for enhanced theoretical application.

Key Findings Summary:

1. Seven main categories reflect comprehensive stakeholder perspectives on contraceptive behavior
2. Integration of HBM and SCT provides robust theoretical foundation for intervention development
3. "Susimilek" innovation demonstrates effective male involvement strategy addressing social environmental factors
4. Multi-level determinants require multi-level interventions for sustainable impact

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5. Five-dimension model offers practical implementation guidance for health promotion programs

DISCUSSION

Overview of Key Findings

This study identified seven main categories influencing contraceptive discontinuation through stakeholder perspectives, subsequently developing a five-dimension integrated health promotion model grounded in Health Belief Model (HBM) and Social Cognitive Theory (SCT) frameworks. The study indicates that multi-level and participatory approaches, and challenging traditional medical-focused interventions could support sustained contraceptive commitment.

Multi-Level Determinants of Contraceptive Discontinuation

Individual and Interpersonal Factors

Our findings align with recent multilevel studies demonstrating that contraceptive discontinuation is influenced by complex interactions between individual, interpersonal, and structural factors. A recent study in Archives of Public Health found that older age[13], female-headed households[5,14], desire for children[15], side effects[5], and lack of sexual activity[13] were significantly associated with contraceptive discontinuation. Women who make contraceptive decisions jointly with partners or independently are less likely to discontinue.[14] Similarly, our FGD data revealed that individual factors such as side effects, desire for pregnancy, and menopause, combined with social factors including spousal and family opposition, create multi-dimensional dropout patterns.

The identification of side effects as a primary individual-level barrier in our study is consistent with prior research showing that systematic reviews and meta-analyses report that early discontinuation rates for hormonal contraceptives range from 17% to 42% within the first year, with side effects being the most frequently cited reason. Commonly reported side effects leading to discontinuation include abnormal bleeding, mood changes, decreased libido, headaches, weight gain, and physical discomfort.[4]

Structural and Policy Challenges

Our findings regarding religious resistance and BPJS (Indonesian health insurance) policy gaps reflect broader structural barriers documented in recent literature. Prior studies identified provider bias, lack of access to contraceptive methods, and policy inconsistencies as major barriers to family planning utilization. The gap between central policies and field realities identified in our study resonates with systematic challenges in implementing top-down health policies in diverse cultural contexts.[16,17] While not always explicitly discussed, health insurance policies that do not cover a full range of contraceptive methods, or that are poorly integrated with family planning programs, can exacerbate access barriers—especially for marginalized groups.[16,18]

Health Belief Model Integration in Contraceptive Behavior

Theoretical Application

The integration of HBM constructs in our study finds strong support in recent research demonstrating HBM's effectiveness in contraceptive behavior modification. A groundbreaking quasi-experimental study in Indonesia[19] evaluated an HBM-based husband empowerment module for postpartum contraceptive support, showing significant improvements in awareness (median scores 9.0 to 11.0), facilitation ability (5.0 to 6.0), and appreciation (4.0 to 5.0) (all $p<0.001$). This directly validates our finding that systematic application of HBM constructs can effectively address perceived barriers through education and enhance male involvement in contraceptive decisions.

The study's integration of all six HBM constructs (perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy) mirrors our theoretical framework integration, providing empirical evidence for the model's applicability in Indonesian contraceptive contexts.

Addressing Perceived Barriers Through Education

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Our finding that repeated education about side effects prevents misconceptions aligns with HBM's emphasis on reducing perceived barriers. The literature demonstrates that structured, theory-based educational interventions can effectively modify health beliefs and subsequent behaviors. Studies applying the HBM in reproductive health demonstrate that fear of side effects is a significant barrier to contraceptive use among adolescents and adults. Educational interventions that provide accurate information and repeated counseling reduce these fears and misconceptions, leading to higher contraceptive uptake.[20] The emphasis on community health worker education in our study parallels successful HBM applications in reproductive health settings globally.[20] The effectiveness of HBM-based education in reducing perceived barriers and improving preventive behaviors has been demonstrated across diverse settings and health topics, reinforcing its value in reproductive health programs.[21]

Social Cognitive Theory and Environmental Interventions

Observational Learning and Social Support

The role of community health workers (cadres) in our study exemplifies SCT's observational learning principle. Recent research on contraceptive self-injection training in Kenya utilized SCT principles, emphasizing knowledge, confidence, and social support as priority needs for contraceptive behavior change.[22] This supports our finding that education through community networks creates sustainable behavioral change through reciprocal determinism.

Environmental Modifications and Policy Support

Our identification of environmental support through the Susimilek program and systematic data utilization (PK21) demonstrates SCT's environmental influence on behavior. The program's success in engaging males in contraceptive selection reflects SCT's emphasis on environmental modifications to support behavior change.

Male Involvement: A Critical Component

Evidence for Participatory Approaches

The Susimilek innovation represents a significant contribution to male involvement literature. Recent systematic reviews demonstrate that male involvement in family planning significantly improves uptake and continuity of family planning services.[23] A qualitative study found that men's participation in family planning provisions had high impact on family planning uptake, with studies from Uganda and other settings showing substantial improvements when men are actively engaged.[24]

Addressing Male Involvement Barriers

Our finding that husbands are rarely involved in contraceptive services aligns with research identifying socio-cultural norms, lack of education, and psychological barriers as key impediments to male involvement.[25] The Susimilek program’s approach to structured male engagement may help address some of these barriers and could inform similar initiatives in comparable contexts..

Multi-Level Intervention Approaches

Theoretical Foundation for Comprehensive Approaches

The findings of this study suggest the relevance of multi-level approaches in addressing complex public health issues, consistent with perspectives widely discussed in public health literature. Previous research has highlighted the potential value of multi-level interventions (MLIs) in addressing interconnected behavioral, social, and structural determinants, while also emphasizing the importance of parsimonious intervention design.[26] Our five-dimension model provides a practical framework for implementing such comprehensive approaches.

Integration of Individual and Environmental Changes

The model's integration of individual factors (knowledge, self-efficacy) with environmental modifications (policy support, community engagement) exemplifies effective multi-level intervention design. Recent

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studies on reproductive health interventions among young people show positive impacts when individual, interpersonal, and structural components are systematically integrated.[27]

Practical Implications

Policy and Program Development

Our findings suggest several practical implications for family planning programs:

a. Data-Driven Policy Making: The PK21 system's effectiveness supports evidence-based policy formulation, enabling targeted interventions based on specific dropout patterns.
b. Male Engagement Strategies: The *Susimilek* model provides a replicable framework for systematic male involvement, addressing a critical gap in family planning services.
c. Provider Competency Development: The identification of provider competency gaps suggests need for comprehensive training programs, particularly in side effect management and couple counseling.
d. Multi-Sectoral Coordination: Enhanced coordination between KIA, family planning, and health promotion services could address fragmented service delivery.

Theoretical Contributions

The study contributes to theoretical understanding by illustrating how the Health Belief Model (HBM) and Social Cognitive Theory (SCT) can be used as interpretive frameworks in understanding contraceptive behavior contexts. The five-dimension model provides a practical operationalization of combined theoretical frameworks, offering guidance for future intervention development.

Several limitations should be acknowledged in this study. The findings are geographically specific to Malang Regency context and may not be directly generalizable to other settings with different cultural or health system characteristics. The cross-sectional FGD design provides snapshot insights but cannot capture temporal dynamics of dropout patterns, while stakeholder representation, though comprehensive, may not include all perspectives from marginalized communities. The analysis was also informed by the Health Belief Model (HBM) and Social Cognitive Theory (SCT), which may have shaped the interpretation of findings toward constructs emphasized within these frameworks while limiting exploration of alternative explanatory perspectives. Additionally, the multi-level model's implementation feasibility in resource-constrained settings requires further evaluation.

Future research should prioritize longitudinal studies evaluating the five-dimension model's effectiveness in reducing contraceptive discontinuation across diverse cultural and religious contexts. Research priorities include cost-effectiveness analyses comparing multi-level interventions to standard care approaches, investigation of digital health integration for early dropout identification, and implementation science studies examining barriers and facilitators to scaling the integrated model across different health system contexts. These research directions will strengthen the evidence base for theoretically grounded, culturally sensitive contraceptive continuation interventions while addressing critical gaps in implementation feasibility and sustainability.

CONCLUSION

This study contributes to contraceptive discontinuation literature by providing a comprehensive, theoretically grounded framework for understanding and addressing dropout patterns. The study identified multiple factors contributing to contraceptive discontinuation, including limited knowledge, side effects, social influences, and challenges in service access within the study setting. Based on these findings, the study proposes a conceptual framework integrating HBM and SCT principles with stakeholder perspectives to better understand dropout patterns and support the development of culturally sensitive interventions in similar contexts. The Susimilek innovation demonstrates the potential for locally developed solutions to address community level challenges in family planning service delivery. Future research is needed to

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further evaluate and refine the model across diverse contexts while considering cultural adaptation, implementation feasibility, and local health system conditions.

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