ICOHESPE (2026): 150–156
International Conference on Health Science, Practice, and Education
QRCBN 62-6861-1753-250
https://proceeding.unnes.ac.id/icohespe

Subjective Norms and Perceived Behavioral Control as Predictors of Pregnant Women's Intention to Undergo HIV Testing

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Abstract. HIV testing among pregnant women is an important preventive measure in preventing mother-to-child transmission of HIV. This study aims to analyze the relationship between subjective norms and perceived behavioral control (PBC) with the intention of pregnant women to undergo HIV testing at the Kesugihan 2 Community Health Center (Puskesmas) in Cilacap Regency in 2024. This research employed a quantitative design with a cross-sectional approach. The sample for this study consisted of 49 pregnant women. Data were collected through a questionnaire and analyzed using the chi-square test. The results showed that the majority of respondents were aged 20–35 years (93.9%), had a junior high school education (57.1%), and were in their third trimester of pregnancy (42.9%). A total of 83.7% of respondents had positive subjective norms, and 75.5% had a high level of PBC. A significant relationship was found between subjective norms and the intention to undergo HIV testing, as well as between PBC and intention. Pregnant women with positive subjective norms and high PBC levels were found to have a greater intention to undergo HIV testing. In conclusion, subjective norms and PBC are significant factors influencing the intention of pregnant women to undergo HIV testing. Interventions focused on education, strengthening social support, and improving access to health services are needed to reinforce women's intention to undergo HIV testing as a protective measure for themselves and their unborn children.

Keywords: HIV, pregnant women, subjective norms, perceived behavioral control, intention

1 Introduction

Early detection of HIV during pregnancy is a crucial step in preventing mother to child transmission. Without intervention, the risk of vertical transmission is estimated at 15 to 45%, but it can be reduced to below 5% with comprehensive measures such as antenatal testing, antiretroviral therapy (ART) for the mother, infant prophylaxis, and safe delivery and feeding practices [1]. Globally, in 2025 WHO released implementation guidance for HIV testing services throughout pregnancy and the postpartum period, together with linkage to care. The guidance emphasizes a friendly, integrated, and patient centred service pathway [2]. Recent UNAIDS data indicate that, although ART coverage is increasing, millions of people still do not know their HIV status. This underscores the importance of expanding testing, particularly within antenatal care services [3].

To explain why pregnant women form the intention, or reluctance, to undergo HIV testing, the Theory of Planned Behavior (TPB) provides a strong framework. Intention is shaped by attitude, subjective norms, and perceived behavioral control (PBC). Intention together with PBC then influences actual behaviour [4]. Evidence from antenatal contexts shows that subjective norms (support from partners or family and from health care workers) are often strong predictors of intention, while perceived control (ease of accessing services, freedom from stigma, and confidence)

is closely related to the decision to be tested [5]. Recent TPB based interventions also show that strengthening attitudes, subjective norms, and PBC can increase screening behaviour, which indicates the relevance of a TPB informed approach for program design [6].

At the policy level, Indonesia has issued Minister of Health Regulation No. 23/2022 on the Control of HIV, AIDS, and STIs. This regulation affirms a strategy to accelerate progress toward Ending AIDS 2030, including strengthened testing services for pregnant women [7]. However, implementation challenges remain evident. An analysis in PLOS Global Public Health reported that in 2022 only about 39% of pregnant women were tested for HIV, 14% for syphilis, and 28% for hepatitis B. In addition, some positive cases had not yet received appropriate management, so the risk of transmission persisted [8]. Health system studies in Indonesia also highlight low coverage of HIV and syphilis testing in antenatal services despite existing policy mandates [9]. These conditions reinforce the need for interventions that target social and behavioural factors, especially norms and PBC, while also addressing structural barriers such as access, cost, and confidentiality.

Globally, the Triple Elimination agenda for HIV, syphilis, and hepatitis B received new country guidance launched by WHO in 2025. The guidance promotes programs that are integrated, family centred, and data driven across all levels of care [10]. The principles of WHO HIV Testing Services (HTS) namely brief pretest information, posttest counselling, provider assisted referral (index testing), and linkage to ART form the foundation of effective antenatal services [11].

In Cilacap District, there were 1,953 HIV cases from 2007 through 2025. HIV testing for pregnant women is generally offered during antenatal visits as part of integrated maternal and child health services. If a woman declines testing, providers are advised to conduct counselling or refer her to VCT services. In 2025, the proportion of pregnant women who received HIV testing in line with standards remained far below the target: 37.98% achieved versus a target of 91%. In the Kesugihan 2 Community Health Center catchment area, VCT is mandated for all pregnant women; however, acceptance and intention to undergo testing still vary.

Accordingly, focusing research on subjective norms and PBC as predictors of pregnant women's intention to undergo HIV testing is well supported by theory, by empirical evidence across contexts, and by alignment with current policy frameworks and elimination targets.

2 Methods

The study employed an observational, quantitative, cross sectional design with a correlational approach. Research was conducted in the service area of Kesugihan 2 Community Health Center, Cilacap Regency. The study population comprised pregnant women who received examinations at Kesugihan 2 Community Health Center. The sample included 49 pregnant women who sought antenatal care at the UPTD Kesugihan Community Health Center, selected using purposive sampling. The research instrument was a questionnaire. Data were analyzed using the chi square test.

3 Results And Discussion

3.1 Univariate Analysis

3.1.1 Respondent Characteristics

Table 1. Frequency Distribution of Intention to Undergo HIV Testing among Pregnant Women at Kesugihan 2 Community Health Center in 2024

No	characteristics	F	%
1	Age		
	a. < 20 and > 35 years	3	6,1
	b. 20 to 35 years	46	93,9
Total		49	100
2	Education level		
	a. SD (Elementary school)	5	10,2

No	characteristics	F	%
	b. SMP (Junior high school)	28	57,1
	c. SMA (Senior high school)	13	26,5
	d. PT (College or university)	3	6,1
Total		49	100
4	Number of living childrena		
	a. 0	14	28,6
	b. 1	21	42,9
	c. 2	12	24,5
	d. 3	2	4,1
Total		49	100
5	Gestational Age		
	a. TM I	11	22
	b. TM II	17	34,7
	c. TM III	21	42,9
Total		49	100

Table 1 shows that this study involved 49 respondents with the following characteristics. Most were in the productive age group of 20 to 35 years, namely 46 people or 93.9 percent, while only 3 people or 6.1 percent were above 35 years.

By education level, most respondents had junior high school education, 28 people or 57.1 percent. This was followed by senior high school, 13 people or 26.5 percent, primary school, 5 people or 10.2 percent, and only 3 people or 6.1 percent had tertiary education.

For number of living children, respondents with one child formed the largest group, 21 people or 42.9 percent. Respondents with no children numbered 14 people or 28.6 percent, followed by those with two children, 12 people or 24.5 percent, and those with three children, 2 people or 4.1 percent.

By gestational age, most respondents were in the third trimester, 21 people or 42.9 percent. A total of 17 people or 34.7 percent were in the second trimester, and the remaining 11 people or 22.0 percent were in the first trimester.

3.1.2 Subjective Norms

Table 2. Frequency Distribution of Subjective Norms regarding HIV Testing among Pregnant Women at Kesugihan 2 Community Health Center in 2024

No	Subjective Norm	f	%
1	Positive	41	83,7
2	Negative	8	16,3
Total		49	100

Based on subjective norms, most respondents held a positive view, 41 people or 83.7 percent. Respondents with a negative view numbered 8 people or 16.3 percent.

3.1.3 Perceived Behavioral Control

Table 3. Frequency Distribution of Perceived Behavioral Control regarding HIV Testing among Pregnant Women at Kesugihan 2 Community Health Center in 2024

No	Perceive Behavioral Control	f	%
1	High	37	75,5
2	Medium	4	8,2
3	Low	8	16,3
Total		49	100

The majority of respondents reported high perceived behavioral control (PBC), with 37 individuals (75.5%). Conversely, 4 individuals (8.2%) reported moderate PBC, and 8 individuals (16.3%) reported low PBC. Overall, these results suggest that most respondents felt they had sufficient control and capability to undergo HIV testing.

3.1.4 Intention of Pregnant Women to Undergo HIV Testing

Table 4. Frequency Distribution of Intention to Undergo HIV Testing among Pregnant Women at Kesugihan 2 Community Health Center in 2024

No	Intention	f	%
1	Yes	37	75,5
2	No	12	24,2
Total		49	100

The data indicate that the majority of pregnant women intended to undergo HIV testing, specifically 75.5% (n=37). Conversely, 24.5% (n=12) reported that they did not intend to be tested. This finding suggests that most respondents demonstrated awareness of the importance of HIV testing, although a notable minority lacked the intention to undergo the procedure.

3.2 Bivariate Analysis

Table 5. Association between Subjective Norms and the Intention of Pregnant Women to Undergo HIV Testing

No	Subjective Norm	Intention				Total		Pv
		Yes		No		N	%	
		F	%	F	%			
1	Positive	35	71,4	6	12,2	41	83,7	0,001
2	Negative	2	4,1	6	12,2	8	16,3	
Total		37	37	75,5	12	24,5	49	

The data reveal a significant association between subjective norms and the intention to undergo HIV testing. Specifically, 83.7% of respondents reported having positive subjective norms, and the majority of this group, 71.4%, intended to be tested for HIV. The statistical analysis further confirms this link, demonstrating a significant associationbetween subjective norms and intention, with a P-value of 0.001

Table 6. Association between Perceived Behavioral Control and the Intention of Pregnant Women to Undergo HIV Testing

No	***Perceive Behavioral Control***	**Intention**				**Total**		**Pv**
		Yes		**No**		**N**	**%**	
		F	**%**	***F***	**%**			
1	High	31	27,9	6	12,25	37	75,5	0,001
2	Low	4	8,2	0	0	4	8,2	
3	Medium	2	4,05	6	12,25	8	16,3	
Total		**37**	**75,5**	**12**	**24,5**	**49**	**100**	

A statistically significant association was found between perceived behavioral control (PBC) and the intention to undergo HIV testing, as indicated by a P-value of 0.001 (N=49).

In the High PBC category (75.5% of respondents), the majority showed intention to test (n=31), while n=6 did not. The Moderate PBC category (n=4) showed 100% intention to test (n=4). Conversely, in the Low PBC category(n=8), only a minority (n=2) intended to be tested, with the majority (n=6) not intending to undergo testing. These findings clearly suggest that higher perceived control strongly predicts a positive intention toward HIV screening.

3.3 Discussion

The literature concerning the Theory of Planned Behavior (TPB) consistently identifies two pivotal constructs governing pregnant women's intention to undergo HIV testing: Subjective Norms (SN) and Perceived Behavioral Control (PBC). SN refers to the perceived social pressure or expectation from key referents, such as partners, family, and healthcare providers. PBC, or self-efficacy, reflects the individual's belief in their capability to successfully navigate the testing process and overcome associated barriers [12]. Robust evidence from a large scale cohort study in Addis Ababa demonstrated that TPB components, particularly perceived social support, accounted for an additional 9–16% variance in intention and emerged as the strongest predictor across both public and private facilities. This intention, in turn, correlated significantly with actual testing behavior, although the implementation of routine opt-out testing within antenatal services ensured that some women with low initial intentions were still tested [12].

This relationship between perceived capability and social influence remains consistent across diverse contexts. A study in Khartoum, Sudan, affirmed the strong correlation between self-efficacy and the intention to test. This suggests that pregnant women who feel capable, understand the procedure, believe they can request the test, and are prepared for potential results are more likely to form a positive intention [13]. Furthermore, the physician often functions as the most dominant social referent, indicating that empathetic, clear, and reassuring clinical interactions are vital not only for imparting information but also for shaping positive social expectations and fostering patient self-efficacy in action-taking [13].

Cross-populational findings reinforce the TPB framework. Among teachers in Tanzania, PBC combined with positive attitudes predicted the intention to utilize Voluntary Counselling and Testing (VCT) services [14]. This confirms the TPB assertion that when practical and psychosocial barrier, such as privacy concerns, waiting times, or stigm, are perceived as manageable, the intention to test escalates [3]. From a service delivery perspective, integrating Provider-Initiated Testing and Counselling (PITC) with routine offers is an effective scale-up strategy. Simplified, confidential testing pathways offered consistently during every antenatal visit facilitate the transition from formed intention to actual testing behavior [15]. Supporting this, an Indonesian study in Surabaya confirmed that the quality of PITC implementation, encompassing the consistency of the offer, effective yet brief counseling, and guaranteed confidentiality is crucial for ensuring that high intentions translate into actual testing uptake [16].

However, strengthening intention alone is insufficient if systemic environmental factors restrict access. Multi-country analyses in Sub-Saharan Africa reveal significant testing coverage disparities across geographical regions and socioeconomic groups, with lower progress observed in populations with less education and income [17]. These structural inequities help explain the gap between intention and behavior, even when social norms and self-efficacy are enhanced. Consequently, efforts to build intention must be integrated with systemic improvements to service delivery, barrier reduction, and contextually sensitive approaches [17]. Methodologically, while some evidence is limited by a cross-sectional design, the existence of prospective cohort studies linking TPB components to intention and actual testing behavior provides robust predictive support for the model. Future intervention trials focusing on normative messaging, partner involvement, and self-efficacy modules within antenatal care (ANC) settings, alongside the ethical integration of routine testing offers, hold the potential to bridge the intention-behavior gap and expand screening coverage among vulnerable groups [17].

4 Conclusion

Based on the analysis of the relationship between Subjective Norms and Perceived Behavioral Control (PBC) concerning pregnant women's intention to undergo HIV testing at the Kesugihan 2 Community Health Center (Puskesmas) in Cilacap Regency, it was found that both factors have a significant relationship in influencing the women's intention. Subjective norms proved to play a crucial role in determining a pregnant woman's intention to undergo HIV testing. Support from partners, family, and health personnel provides a strong moral and social impetus for women

to get tested. The higher a woman's perception of positive expectations from her social environment, the greater her likelihood of forming a positive intention. In this specific area, the partner (husband) emerged as the primary supportive factor that can increase the mother's confidence in making health decisions, including HIV testing.

PBC also had a substantial influence on the pregnant women's intention. Mothers who feel capable of controlling perceived barriers, such as access to health facilities, self-confidence in facing social stigma, and understanding the importance of HIV testing tend to have a higher intention to get tested. At the Kesugihan 2 Puskesmas, factors like service accessibility and effective communication from health personnel were key elements that significantly boosted the pregnant women's PBC.

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