



THE RELATIONSHIP BETWEEN KNOWLEDGE, ATTITUDES, MOTIVATION, AND THE ROLE OF FIELD OUTREACH WORKERS ON HIV/AIDS PREVENTION BEHAVIOR AMONG THE MSM COMMUNITY IN TULUNGAGUNG REGENCY

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ABSTRACT	KEYWORDS
The Men who have Sex with Men (MSM) community is a key population with a 22-fold higher risk of HIV transmission compared to the general population. Tulungagung Regency recorded 4,540 HIV/AIDS cases, with 630 cases (13.88%) occurring among adolescents aged 13–24 years, indicating an epidemiological shift toward younger age groups. Objective: To analyze the relationship between knowledge, attitudes, motivation, and the role of field outreach workers on HIV/AIDS prevention behavior among the MSM community in Tulungagung Regency. This quantitative study employed a cross-sectional design. A sample of 96 respondents from the MSM community in Tulungagung Regency was selected using purposive sampling. Data were collected using structured questionnaires. Data analysis was performed using the chi-square test. The majority of respondents had adequate knowledge (37.5%), positive attitudes (52.1%), low motivation (52.1%), and perceived the role of outreach workers as inadequate (54.2%). There were significant relationships between knowledge ($p=0.001$), attitudes ($p=0.003$), motivation ($p=0.001$), and the role of outreach workers ($p=0.001$) with HIV/AIDS prevention behavior. Knowledge, attitudes, motivation, and the role of field outreach workers are associated with HIV/AIDS prevention behavior among the MSM community. Strengthening community-based intervention programs and enhancing the capacity of outreach workers are necessary.	HIV / AIDS, MSM, Outreach Workers

INTRODUCTION

Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) remain global health challenges, with key populations such as Men who have Sex with Men (MSM) having the highest vulnerability to transmission. The MSM population faces a 22-fold greater risk of HIV transmission compared to the general population (UNAIDS & WHO, 2018). In Indonesia, HIV cases among MSM continue to increase, driven by risky sexual practices, low condom use, and barriers to accessing healthcare services (Kementerian Kesehatan RI, 2024). Tulungagung Regency, East Java, recorded an alarming situation with a total of 4,540 HIV/AIDS cases since 2006, of which 630 cases (13.88%) occurred among adolescents aged 13–24 years, with the highest trend in the 15–19 age group (KPAD Tulungagung, 2025; Dinkes Jatim, 2025).

This epidemiological shift toward younger age groups indicates a gap in effective prevention interventions, particularly among the MSM community, which is often marginalized and difficult to reach by conventional health programs (Hegarty, 2024).

Various determinants of HIV/AIDS prevention behavior among the MSM community have been identified in previous studies. Research in Makassar showed that social stigma, fear of HIV test results, and limited access to services are major barriers to implementing prevention programs (Madjid et al., 2025). Research in Palu found that although MSM knowledge and attitudes toward HIV prevention were relatively good, this was not always followed by concrete actions such as consistent condom use (Mu'minsyah, 2025). Meanwhile, research in Malaysia showed that education level and income influence HIV prevention practices among MSM (Study on HIV Prevention Behavior Among MSM in Malaysia, 2025). The role of field outreach workers (peer educators/outreach workers) has proven effective in bridging the gap between the MSM community and healthcare services through interpersonal approaches, dialogue-based education, and psychosocial support (FHI 360, 2018; NACO, 2017). Peer educators serve as vital links between communities and service facilities, building trust and encouraging behavior change through sustained interpersonal communication (BMC Public Health, 2019).

The Theory of Planned Behavior (TPB) by Ajzen (1991) explains that a person's behavior is influenced by three main factors: attitudes toward the behavior, subjective norms, and perceived behavioral control. In the context of HIV/AIDS prevention among the MSM community, positive attitudes toward prevention, support from the social environment (including outreach workers), and self-efficacy beliefs are strong predictors of prevention behavior. Meanwhile, the Health Belief Model (HBM) by Rosenstock (1974) emphasizes that perceived susceptibility, perceived severity, perceived benefits, and perceived barriers influence an individual's decision to take preventive action. Good knowledge about HIV/AIDS will increase perceived susceptibility and severity, which in turn encourages prevention behavior (Glanz et al., 2015).

Although various studies have examined factors influencing HIV prevention behavior among MSM, there remains a research gap regarding comprehensive analysis of the simultaneous influence of internal factors (knowledge, attitudes, motivation) and external factors (role of outreach workers) on prevention behavior, particularly in regions with epidemiological characteristics such as Tulungagung Regency. This study aims to analyze the relationship between knowledge, attitudes, motivation, and the role of field outreach workers on HIV/AIDS prevention behavior among the MSM community in Tulungagung Regency. The scientific novelty of this research lies in the exploration of these factors within a specific local context, considering the epidemiological shift toward younger age groups occurring in Tulungagung, as well as the

integration of TPB and HBM theoretical approaches in analyzing determinants of prevention behavior in a hidden population.

METHOD

The study was conducted in Tulungagung Regency from January to March 2025. The study population comprised all members of the MSM community registered in the HIV/AIDS prevention program within the working areas of Puskesmas and accompanying NGOs in Tulungagung Regency. The sample was calculated using the Slovin formula with a 10% margin of error, yielding a minimum sample size of 96 respondents. The sampling technique used purposive sampling with inclusion criteria: (1) aged ≥ 18 years, (2) self-identified as MSM, (3) willing to be a respondent, and (4) residing in Tulungagung Regency for at least the past 6 months. Exclusion criteria were respondents with severe illness or cognitive impairment that would hinder questionnaire completion.

Data collection was conducted using a structured questionnaire consisting of six sections: (1) respondent characteristics (age, education, occupation, relationship status); (2) HIV/AIDS knowledge questionnaire (15 items, score 0–15) adapted from the UNAIDS instrument; (3) attitudes toward HIV/AIDS prevention questionnaire (10 items, Likert scale 1–5); (4) motivation to perform prevention questionnaire (8 items, Likert scale 1–5); (5) perception of outreach worker role questionnaire (10 items, Likert scale 1–5); and (6) HIV/AIDS prevention behavior questionnaire (12 items). Validity and reliability testing of the questionnaire was conducted on 20 respondents outside the sample with Cronbach's Alpha values >0.70 for all instruments. Data collection was carried out by trained enumerators with assistance from outreach workers to facilitate access to the hidden MSM community. Data analysis used the chi-square test to examine the relationship between independent variables (knowledge, attitudes, motivation, role of outreach workers) and the dependent variable (HIV/AIDS prevention behavior), with a significance level of $p < 0.05$. Data analysis was assisted using SPSS version 26.0.

RESULT

1. Respondent Characteristics

The study involved 96 respondents from the MSM community in Tulungagung Regency.

Table 1. Frequency Distribution of Respondent Characteristics

Characteristic	Frequency (f)	Percentage (%)
Age		
18–24 years	37	38.5
25–34 years	46	47.9
≥ 35 years	13	13.5
Education		

Elementary/Junior High	24	25.0
Senior High/equivalent	43	44.8
University	29	30.2
Occupation		
Unemployed	21	21.9
Private employee/entrepreneur	38	39.6
Student	37	38.5
Relationship Status		
Has a regular partner	36	37.5
No regular partner	60	62.5

Source: Primary Data, 2026

Table 1 shows that the majority of respondents were aged 25–34 years (47.9%), had a senior high school education or equivalent (44.8%), worked as private employees/entrepreneurs (39.6%), and had no regular partner (62.5%). The dominance of respondents in the productive age group and with secondary to higher education indicates that the MSM community in Tulungagung largely comes from a relatively accessible socio-economic group, yet still faces challenges in HIV prevention behavior.

2. Frequency Distribution of Knowledge, Attitudes, Motivation, and Role of Outreach Workers on HIV/AIDS Prevention Behavior

Table 2. Frequency Distribution of Knowledge, Attitudes, Motivation, and Role of Outreach Workers on HIV/AIDS Prevention Behavior

Variable	Category	Frequency (f)	Percentage (%)
Knowledge	Poor (score 0–7)	28	29.2
	Adequate (score 8–11)	36	37.5
	Good (score 12–15)	32	33.3
Attitude	Negative (score 10–25)	46	47.9
	Positive (score 26–50)	50	52.1
Motivation	Low (score 8–20)	50	52.1
	High (score 21–40)	46	47.9
Role of Outreach Workers	Inadequate (score 10–25)	52	54.2
	Adequate (score 26–50)	44	45.8
Prevention Behavior	Poor (score 12–30)	53	55.2
	Good (score 31–60)	43	44.8

Source: Primary Data, 2026

Table 2 shows that the majority of respondents had adequate knowledge (37.5%), positive attitudes (52.1%), low motivation (52.1%), and perceived the role of outreach workers as inadequate (54.2%). HIV/AIDS prevention behavior among the MSM community was predominantly in the poor category (55.2%). These findings indicate that although respondents' attitudes tended to be positive toward HIV prevention, low motivation and the suboptimal role of outreach workers become inhibiting factors for achieving good prevention behavior.

3. Relationship Between Knowledge, Attitudes, Motivation, and Role of Outreach Workers on HIV/AIDS Prevention Behavior

Table 3. Relationship Between Knowledge, Attitudes, Motivation, and Role of Outreach Workers on HIV/AIDS Prevention Behavior

Variable	Prevention Behavior		Total	p-value	OR (95% CI)
	Poor	Good			
Knowledge				0,001	
Poor	25 (89,3%)	3 (10,7%)	28		13,889 (3,426-56,309)
Adequate	19 (52,8%)	17 (47,2%)	36		2,681 (0,861-8,346)
Good	9 (28,1%)	23 (71,9%)	32		1,000 (ref)
Attitude				0,003	
Negative	31 (67,4%)	15 (32,6%)	46		3,651 (1,461-9,128)
Positive	22 (44,0%)	28 (56,0%)	50		
Motivation				0,001	
Low	37 (74,0%)	13 (26,0%)	50		6,620 (2,660-16,474)
High	16 (34,8%)	30 (65,2%)	46		
Role of Outreach Workers				0,001	
Inadequate	39 (75,0%)	13 (25,0%)	52		6,923 (2,807-17,076)
Adequate	14 (31,8%)	30 (68,2%)	44		

Source: Primary Data, 2025 (Chi-Square Analysis, significant at $p < 0.05$)

Table 3 shows that all independent variables had a significant relationship with HIV/AIDS prevention behavior. Respondents with poor knowledge were 13.889 times more likely to have poor prevention behavior compared to those with good knowledge. Respondents with negative attitudes were 3.651 times more likely to have poor prevention behavior compared to those with positive attitudes. Low motivation increased the likelihood of poor prevention behavior by 6.620 times compared to high motivation. Meanwhile, an inadequate role of outreach workers increased the likelihood of poor prevention behavior by 6.923 times compared to an adequate role. The highest Odds Ratio value was found in the knowledge variable (OR=13.889), indicating that knowledge is the most dominant factor in predicting HIV/AIDS prevention behavior among the MSM community in Tulungagung Regency.

DISCUSSION

1. Relationship Between Knowledge and HIV/AIDS Prevention Behavior

The study results showed a significant relationship between knowledge and HIV/AIDS prevention behavior ($p=0.001$; OR=13.889). This finding is consistent with research in Malaysia which found that 71% of MSM with good knowledge demonstrated more responsible prevention practices (Study on HIV Prevention Behavior Among MSM in Malaysia, 2025). Comprehensive knowledge about transmission routes, prevention methods, and consequences

of HIV/AIDS serves as the foundation for behavior change. Research in Vietnam showed that education through outreach workers effectively increased MSM knowledge about HIV, from unawareness of risk to awareness of condom use (BMC Public Health, 2019).

Theoretically, this finding is supported by the Health Belief Model (HBM) proposed by Rosenstock (1974) and developed by Becker (1974). HBM explains that knowledge about a disease will increase perceived susceptibility and perceived severity, which then encourages individuals to take preventive action if they also perceive the benefits of such action (perceived benefits) and feel capable of performing it (perceived self-efficacy) (Glanz et al., 2015). In the context of this study, MSM with good knowledge about HIV/AIDS have a better understanding of transmission risks and the severity of HIV impacts, thus being more motivated to perform prevention. Conversely, poor knowledge leads to low risk perception, which in turn reduces the likelihood of prevention behavior.

Research by Baral et al. (2013) in a global study on the HIV epidemic among MSM found that knowledge-based interventions combined with access to prevention services proved effective in reducing HIV incidence by 30–40% in the MSM population. However, the gap between knowledge and action found in research in Palu indicates that knowledge alone is insufficient; strengthening other factors such as condom negotiation skills and access to preventive tools is necessary (Mu'minsyah, 2025). This aligns with criticism of HBM which states that the model pays insufficient attention to contextual and socio-economic factors influencing health behavior (Abraham & Sheeran, 2015).

Research in Makassar by Madjid et al. (2025) also found that good knowledge about HIV is not always followed by optimal prevention behavior due to structural barriers such as stigma and discrimination. This finding indicates that knowledge enhancement interventions must be integrated with efforts to reduce stigma and improve service access to achieve sustainable behavior change.

2. Relationship Between Attitudes and HIV/AIDS Prevention Behavior

Negative attitudes toward HIV/AIDS prevention increased the risk of poor prevention behavior by 3.651 times ($p=0.003$). Negative attitudes are often influenced by stigma and discrimination attached to the MSM community. Research in Makassar identified social stigma as a major barrier to implementing HIV prevention programs, where MSM are reluctant to access services for fear of unpleasant treatment from healthcare workers (Madjid et al., 2025). Stigma also affects MSM perceptions of prevention programs and encourages "self-exclusion" from healthcare services (UNAIDS & WHO, 2018).

This finding is supported by the Theory of Planned Behavior (TPB) by Ajzen (1991), which states that attitudes toward behavior are one of the main predictors of intention and behavior. Attitudes are formed from individual beliefs about the consequences of a behavior and evaluations of those consequences. In the context of HIV prevention, MSM with positive attitudes believe that preventive actions such as condom use will provide benefits (preventing transmission) and have positive evaluations of such actions. Conversely, negative attitudes emerge when MSM believe that prevention will bring negative consequences such as loss of sexual pleasure or suspicion from partners (FHI 360, 2018).

Research in Tulungagung shows that reproductive health education and the "sayang tanpa telanjang" campaign in the MPLS program aim to change attitudes and behavior from an early age, but these interventions have not specifically targeted the often-hidden MSM community (Dinkes Tulungagung, 2024). Stigma reduction programs, such as those implemented by ILO through Strategic HIV/AIDS Responses by Enterprises (SHARE), proved effective in increasing positive attitudes toward HIV prevention from 33% to 63% in Ghana (ILO, 2008). Similar interventions need to be adapted in Tulungagung by involving community leaders and religious figures to reduce stigma against MSM (Pulerwitz et al., 2015).

Research by Rispel et al. (2016) in South Africa showed that stigma reduction interventions involving healthcare worker training and mass media campaigns effectively increased positive attitudes toward MSM and encouraged utilization of HIV prevention services. This finding confirms that attitude change requires not only individual education but also broader social norm change.

3. Relationship Between Motivation and HIV/AIDS Prevention Behavior

Low motivation was associated with poor prevention behavior ($p=0.001$; $OR=6.620$). Motivation is an important determinant in behavior change, especially because HIV prevention behavior often requires long-term and consistent change. A study in South Africa found that lack of knowledge about Post-Exposure Prophylaxis (PEP) and motivation to use it was associated with non-gay identity and HIV-negative status, indicating the need for approaches tailored to MSM subgroups (Hugo et al., 2016). Motivation to prevent transmission (altruistic intention) becomes a driving factor for implementing partner notification programs among MSM in Makassar (Madjid et al., 2025).

From a theoretical perspective, Self-Determination Theory (SDT) by Deci & Ryan (1985) explains that intrinsic motivation (based on internal satisfaction) is stronger in driving long-term health behavior compared to extrinsic motivation (based on external rewards).

Intrinsic motivation to prevent HIV can arise from awareness of responsibility toward oneself and partners, as well as the desire to maintain overall health (Ryan & Deci, 2017). In this study, MSM with high motivation showed better prevention behavior because they had internal drives to protect themselves and others from HIV transmission.

The provision of incentives has also proven effective in increasing motivation to participate in HIV prevention programs, as found in Weihs (2010) where incentives increased workers' interest in undergoing voluntary counselling and testing (ILO, 2008). However, incentive provision must be carefully designed to avoid creating dependency and to ensure behavior sustainability after incentives are discontinued (Kaufman et al., 2016).

Research by Trapence et al. (2012) in Malawi showed that MSM motivation to perform HIV prevention increased when they had social support from peers and felt part of a group that cared about health. This indicates that community-based interventions that build solidarity and a sense of belonging can be effective strategies for increasing prevention motivation in the MSM population.

4. Relationship Between the Role of Field Outreach Workers and HIV/AIDS Prevention Behavior

An inadequate role of field outreach workers (peer educators/outreach workers) increased the likelihood of poor prevention behavior by 6.923 times ($p=0.001$). Outreach workers play a strategic role as the primary "messengers" in encouraging behavior change through interpersonal communication (NACO, 2017). Based on program guidelines, peer educators are responsible for daily outreach activities, providing education, accompanying clients to service facilities, and program documentation (FHI 360, 2018). Research in Vietnam showed that outreach workers effectively reach MSM who are not reached by conventional programs and build trust through informal conversations that convey important information (BMC Public Health, 2019). In the context of this study, outreach workers who come from the MSM community itself have a better understanding of the needs and challenges faced by their community, so the messages conveyed are more relevant and easily accepted (UNAIDS, 2019). This finding is consistent with Social Cognitive Theory (SCT) by Bandura (1986) which emphasizes the importance of social learning through observation and interaction with others. Competent and trusted outreach workers can serve as effective role models for the MSM community in adopting prevention behavior (Bandura, 2004). Rogers' (1995) diffusion of innovations theory also explains that peer educators act as change agents who accelerate the adoption of new behaviors through credible interpersonal communication that is familiar to the target community.

Research in Makassar recommends strengthening the capacity of outreach workers and providing inclusive and MSM-friendly HIV services as key prevention strategies (Madjid et al., 2025). In Tulungagung, the role of outreach workers is crucial given the increase in HIV cases among adolescents and the presence of a hidden MSM population that is difficult to reach through conventional school or puskesmas programs (KPAD Tulungagung, 2025; Dinkes Tulungagung, 2024). Research by Spieldener et al. (2020) emphasizes that well-trained outreach workers supported by adequate systems can be an effective bridge between the MSM community and healthcare services, especially in the context of stigmatized populations.

The Community-Based Participatory Research (CBPR) framework proposed by Israel et al. (1998) is also relevant in explaining the importance of the role of outreach workers in HIV prevention programs. CBPR emphasizes active community involvement in every stage of the program, from planning to evaluation, to ensure interventions align with local needs and context (Israel et al., 2013). Outreach workers as part of the community have a dual role as health advocates and community members who understand internal social dynamics, enabling them to identify barriers and intervention opportunities more accurately.

CONCLUSION

This study concludes that there is a significant relationship between knowledge, attitudes, motivation, and the role of field outreach workers with HIV/AIDS prevention behavior among the MSM community in Tulungagung Regency. Poor knowledge, negative attitudes, low motivation, and inadequate role of outreach workers collectively increase the risk of poor prevention behavior. Knowledge is the most dominant factor (OR=13.889) in predicting prevention behavior, followed by the role of outreach workers (OR=6.923) and motivation (OR=6.620). These findings emphasize that HIV/AIDS prevention interventions in the MSM community require a multidimensional approach that not only focuses on increasing knowledge but also strengthening positive attitudes, increasing motivation, and optimizing the role of outreach workers as agents of change in the community. The integration of the Health Belief Model and Theory of Planned Behavior provides a relevant theoretical framework for designing comprehensive and evidence-based interventions.

SUGGESTION

Based on the research findings, it is recommended that the Tulungagung Regency Health Office and the Regional AIDS Commission (KPAD) enhance training and supervision programs for field outreach workers on a regular basis, develop educational modules tailored to the

characteristics and knowledge levels of MSM, and integrate stigma and discrimination reduction programs into healthcare services. Accompanying Non-Governmental Organizations (NGOs) for the MSM community are advised to strengthen peer educators with a ratio of 1:60 according to standards, provide engaging and easily accessible educational materials, and develop participatory monitoring and evaluation mechanisms together with the community. Future research is recommended to use longitudinal or intervention designs to test the effectiveness of programs enhancing the role of outreach workers on HIV prevention behavior, as well as to explore contextual factors specific to program implementation in Tulungagung Regency through qualitative approaches.

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