

The Impact of Social Support on HIV Care, Support, and Treatment (CST) Service Utilization Among Men Who Have Sex with Men (MSM): A Cross-Sectional Study in Medan City

Dhani Syahputra Bukit^{1*}, Ayudiah Khairani¹, R. Kintoko Rochadi¹

¹ Department of Health Education and Behavioural Sciences, Faculty of Public Health, Universitas Sumatera Utara, Indonesia

*Corresponding Author Email: dhanibukit@usu.ac.id

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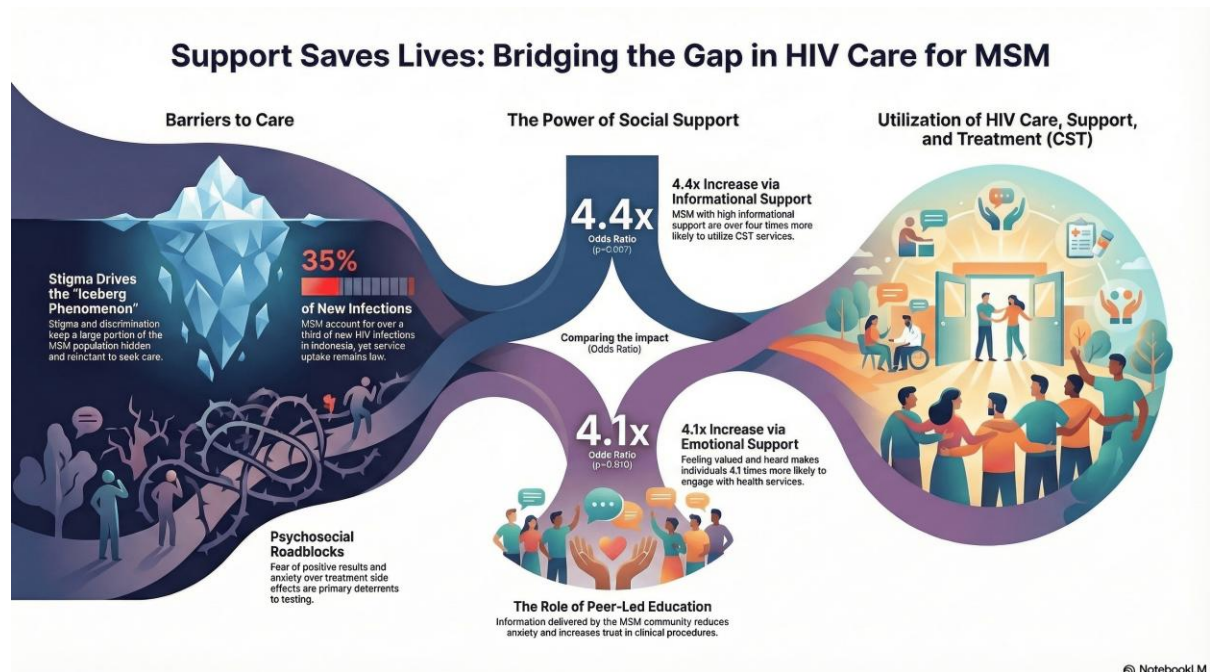
ABSTRACT

Men who have sex with men (MSM) remain a key population with a heightened risk of HIV infection, underscoring the importance of HIV care, support and treatment (CST) services in improving health outcomes. However, the utilization of CST services among MSM is often hindered by stigma, discrimination, and fear of receiving a positive HIV diagnosis. These barriers highlight the need to understand the role of social support in encouraging service uptake. This cross-sectional study involved 83 MSM in Medan City, selected through purposive accidental sampling. Data were collected using structured questionnaires and analyzed through univariate, chi-square bivariate test, and logistic regression test. The results showed that all assessed forms of social support—emotional, appraisal, informational, and instrumental— were significantly associated with the use of HIV CST Services. Among these, informational support was identified as the most influential factor in increasing service utilization ($p=0,007$, $OR=4,3$). In conclusion, informational support plays a dominant role in enhancing the utilization of HIV CST services among MSM. Strengthening the provision of accurate information and guidance is therefore essential in improving service engagement. Recommendations include expanding outreach efforts, enhancing social support mechanisms for MSM, and promoting safe and supportive environment to reduce stigma and encourage access to CST services.

Key Messages:

- Stigma and discrimination remain major barriers that reduce MSM's willingness to access health services.
- Social support such as emotional, appraisal, informational, or instrumental support, significantly influences the utilization of HIV care, support and treatment services among MSM.
- Strengthening family, peer, or community support can improve treatment adherence and health outcomes for MSM

GRAPICAL ABSTRACT



INTRODUCTION

Men who have sex with men (MSM) constitute one of the key populations with a significantly elevated risk of HIV infection due to behavioural and biological vulnerabilities (1). Inconsistent condom use and the receptive role during anal intercourse substantially increase the likelihood of HIV transmission (2). Globally, HIV cases reached 39.9 million in 2022, with infections among gay men and MSM increasing by 11% since 2010 (3). MSM are estimated to have 23-fold higher risk of acquiring HIV compared with the general population. In Indonesia, 31% of people living with HIV (PLHIV) are homosexual-related transmissions, with North Sumatera—particularly Medan City—ranking among the highest contributors (4).

Global commitments to ending the HIV epidemic by 2030, a part of the SDGs 3, specifically target 3.3, which aims to end the epidemic (5), including the 95-95-95 targets, emphasize the importance of early diagnosis, antiretroviral therapy (ART) uptake, and viral suppression (6). In accordance with this elimination target, the Ministry of Health of the Republic of Indonesia issued Regulation number 23 of 2022 on the National Action Plan for HIV/AIDS and Sexually Transmitted Infections (STIs) control, serves as a guideline for the central and regional governments in preparing plans in developing HIV control plans, and one form of case management that can be implemented under this regulation is the Care, Support, and Treatment (CST) Services (7). CST services offer a range of prevention, counseling, care, and treatment for people living with HIV (PLHIV) and those at high risk of contracting it, and these services aim to reduce health-related challenges and prevent HIV transmission (8)

However, Indonesia has not yet met these targets, with only 77% of PLHIV knowing their status, 45% receiving ART, and 46% achieving viral suppressions (1). This disparity is even more pronounced within key populations, particularly among men who have sex with men (MSM), who account for 35% of new HIV infections in Indonesia, with only 64% of them have received ARV therapy, and just 49% have achieved viral suppression (9). According to data from the Galatea Foundation of Medan City from January to December 2022, the number of MSM population reached in Medan City was 10,281 people, with 649 people infected with HIV, while 352 people had undergone ARV therapy (10). These figures indicate that Indonesia, particularly the MSM group, has not yet reached the global triple 95% elimination targets. This situation is similar to the iceberg phenomenon, where only a small portion of the population is visible, while a large number of MSM remain hidden (11). They are reluctant to disclose their identity due to high levels of discrimination in society, stemming from a lack of adequate information about them and negative social stigma regarding their sexual behavior (12,13).

Although CST services provide essential counseling, prevention, and treatment for PLHIV and individuals at risk, many MSM remain reluctant to access them (14). Prior studies highlight recurring psychosocial barriers such as fear of HIV test results, stigma, discrimination, confidentiality concerns, and anxiety about treatment side effects (15). These factors collectively discourage MSM from seeking care. At the same time, evidence shows that social support plays a crucial role in helping individuals cope with psychological stress, enhancing motivation to undergo testing, and improving adherence to HIV-related services, including voluntary counseling and testing (VCT), indicating that social networks significantly influence health-seeking behaviour.(16) previous studies indicate that LGBT individuals who receive limited social support are at higher risk of having low utilization of VCT services (17).

Despite the body evidence, a clear research gap persists, while social support is known to benefit PLHIV broadly, its specific influence on the utilization of comprehensive CST services among MSM in the Indonesian context, especially in Medan City, has not been thoroughly examined. Many MSM remain hidden due to stigma and discrimination, understanding these dynamics is crucial for improving service uptake.

This study aims to address this gap by examining how various forms of social support affect HIV CST service utilization among MSM in Medan City, thereby informing more targeted and effective public health interventions.

METHODS

This quantitative study used a cross-sectional design and was conducted in Medan City, North Sumatera, in May 2025. The population consisted of MSM utilizing HIV Care, Support, and Treatment (CST) services. Using the Slovin's Formula 83 respondents were selected through purposive accidental sampling, appropriate for accessing hidden and hard-to-reach populations such as MSM. Inclusion criteria were willingness to participate, active sexual relations with men, and current engagement in CST services, while exclusion criteria included withdrawal, cognitive impairment, or poor health. Informed consent was obtained from all participants.

Data were collected using a structured questionnaire that measured four domains of social support (emotional, informational, appraisal, and instrumental) and CST service utilization. All items were assessed using a 4-point Likert Scale (Strongly Agree= 4, Agree= 3, Disagree= 2, and Strongly Disagree= 1). In addition, demographic and clinical characteristics such as HIV status, duration of CST services utilization, and HIV community membership were also collected to provide essential background information for interpreting the study findings.

The emotional support domain consisted of 10 items with score range of 10-40, categorized as Low (10-24) and High (25-40). The other social support domains (informational, appraisal, instrumental) and CST service utilization consisted of 12 items with a score range of 12-48, categorized as Low (12-30) and High (31-48). The categorization was based on the theoretical midpoint of the total possible scores, with scores below the midpoint classified as low/poor and scores equal to or above the midpoint classified as high/good.

RESULTS

Table 1 shows that respondents predominantly have a negative HIV status (42 respondents; 50.6%). Most respondents have utilized HIV CST services for less than a year (32 respondents; 38.6%), and the majority are not members of an HIV community (56 respondents; 67.5%). In terms of social support, most respondents receive emotional support in the high category (52 respondents; 62.7%), appraisal support in the high category (48 respondents; 57.8%), informational support in the high category (50 respondents; 60.2%), and instrumental support in the high category (43 respondents; 51.8%). Finally, in the category of service utilization, most respondents utilize HIV CST services well (52 respondents, 62.7%).

Table 2 shows that based on the chi-square test, all types of social support were found to have a significant relationship with the utilization of HIV CST services ($p < 0.05$). Variables with p -values < 0.25 were subsequently included in the multivariate logistic regression analysis.

Table 1. Univariate Analysis of Respondent Characteristics and Research Variables

| Parameter | n | % |
|---|----|------|
| HIV Status | | |
| Just Test | 4 | 4.8 |
| Positive | 30 | 36.1 |
| Negative | 42 | 50.6 |
| Don't want to mention | 7 | 8.4 |
| Duration for utilizing HIV CST services | | |
| New Test | 4 | 4.8 |
| < 1 Year | 32 | 38.6 |
| 1 – 3 Years | 16 | 19.3 |
| > 3 Years | 31 | 37.3 |
| Are you a member of an HIV community? | | |
| Yes | 27 | 32.5 |
| No. | 56 | 67.5 |
| Emotional Support | | |
| Low | 31 | 37.3 |
| High | 52 | 62.7 |
| Appraisal Support | | |
| Low | 35 | 42.2 |
| High | 48 | 57.8 |
| Informational Support | | |
| Low | 33 | 39.8 |
| High | 50 | 60.2 |
| Instrumental Support | | |
| Low | 40 | 48.2 |
| High | 43 | 51.8 |
| Utilization of HIV Care, Support, and Treatment (CST) Services | | |
| Poor | 31 | 37.3 |
| Good | 52 | 62.7 |

Table 2. Relationship between Social Support and HIV CST services

| Variables | HIV CST services | | | | Total | | <i>p-value</i> |
|-----------------------|------------------|------|------|------|-------|-----|----------------|
| | Poor | | Good | | n | % | |
| | n | % | n | % | | | |
| Emotional Support | | | | | | | 0.000 |
| Low | 20 | 64.5 | 11 | 35.5 | 31 | 100 | |
| High | 11 | 21.2 | 41 | 78.8 | 52 | 100 | |
| Appraisal Support | | | | | | | 0.013 |
| Low | 19 | 54.3 | 16 | 45.7 | 35 | 100 | |
| High | 12 | 25.0 | 36 | 75.0 | 48 | 100 | |
| Informational Support | | | | | | | 0.000 |
| Low | 21 | 63.3 | 12 | 36.4 | 33 | 100 | |
| High | 10 | 20.0 | 40 | 80.0 | 50 | 100 | |
| Instrumental Support | | | | | | | 0.012 |
| Low | 21 | 52.5 | 19 | 47.5 | 40 | 100 | |
| High | 10 | 23.3 | 33 | 76.7 | 43 | 100 | |

The multivariate findings underscore that social support is a critical determinant in enhancing the uptake of HIV Care, Support, and Treatment (CST) services among the MSM population in Medan City (Table 3). Informational support stands out as the primary catalyst, suggesting that access to accurate, stigma-free knowledge regarding HIV procedures and treatment benefits significantly reduces health-related anxiety and empowers individuals to make proactive health decisions. Additionally, the significant influence of emotional support highlights the necessity of empathetic peer networks and inclusive healthcare environments in overcoming psychosocial barriers like discrimination. Consequently, public health interventions should prioritize peer-led educational strategies and the strengthening of social support systems to bridge the gap in service utilization and support global HIV elimination targets.

Table 3. Results of Logistic Regression Test Analysis

| Step | Variable | Wald | Sig. | Exp (B) | 95% C.I. for EXP (B) | |
|------|-----------------------|-------|-------|---------|----------------------|--------|
| | | | | | Lower | Upper |
| 1. | Emotional Support | 5.258 | 0.022 | 4.797 | 1.256 | 18.320 |
| | Appraisal Support | 0.044 | 0.833 | 0.866 | 0.228 | 3.298 |
| | Informational Support | 6.090 | 0.014 | 5.105 | 1.399 | 18.631 |
| | Instrumental Support | 0.133 | 0.715 | 0.775 | 0.196 | 3.058 |
| 2. | Emotional Support | 6.360 | 0.012 | 4.472 | 1.396 | 14.323 |
| | Informational Support | 6.163 | 0.013 | 4.963 | 1.401 | 17.580 |
| | Instrumental Support | 0.148 | 0.701 | 0.765 | 0.195 | 2.999 |
| 3. | Emotional Support | 6.621 | 0.010 | 4.117 | 1.401 | 12.098 |
| | Informational Support | 7.264 | 0.007 | 4.366 | 1.495 | 12.752 |

DISCUSSION

The results of this study indicate that social support plays a significant role in increasing the utilization of Care, Support, and Treatment (CST) services by men who are sexually active in Medan City. In general, all dimensions of social support, such as emotional, appraisal, informational, and instrumental, were significantly associated with service utilization, although the strengths of these associations varied. This variation suggests that each dimension may influence service engagement through different psychosocial mechanisms.

Emotional support was shown to significantly influence the utilization of CST services, both in bivariate and multivariate analyses. In the final logistic regression model, emotional support had a p-value of 0.010 and $\text{Exp}(B)=4.117$, indicating that individuals with high emotional support were approximately four times more likely to utilize CST services effectively. According to PLHIV, ideal emotional support is obtained from peers with HIV, because there are similarities in experiences and challenges faced so that they can understand each other and provide a deeper sense of empathy (18–21). This also reinforces previous research findings that feeling valued, listened to, and accepted in the community can increase the motivation of men who are sexually active to access health services, especially services sensitive to stigma such as CST (21,22).

Appraisal and instrumental support also showed significant associations in the bivariate analysis (p-value = 0.013 and p-value = 0.012). Individuals MSM who received positive feedback, reinforced self-assessments, concrete assistance, such as transportation, financial help, or practical support, tended to be more consistent in accessing CST services (23,24). However, these two forms of support were not included in the final stepwise regression model, indicating that their contribution was not as strong as emotional support and, in particular, informational support. This may be due to the nature of CST services, which require knowledge, understanding, and independent behavioral decisions, making informational support a more decisive factor.

Informational support emerged as the most dominant factor influencing CST service utilization. In the final multivariate model, informational support had a p-value of 0.007 and $\text{Exp}(B)=4.366$, the highest value compared to other dimensions of social support. These findings indicate that respondents who received accurate information about HIV, CST procedures, treatment benefits, and service delivery were more than four times more likely to utilize services optimally (25). Adequate information has been shown to reduce anxiety, address misconceptions about HIV status, and increase a sense of control over one's health. In the context of men who are sexually active (MSM), where stigma and fear of identity disclosure remain high, informational support is the most strategic form of support (19). HIV service providers are often from the MSM community to ensure a more empathetic communication process, less discrimination free environment, safe and comfortable place for MSM patients to express their concern (18,26), and this is proven by the existence of health workers in CST services on Medan City is a part of the MSM community.

Overall, the results of this study confirm that social support, particularly informational support, is essential for increasing MSM engagement in CST services. These findings imply that interventions should prioritize peer-led education, community-based outreach, and structured communication strategies that provide accurate, accessible, and stigma free information. Strengthening MSM peer networks and integrating culturally sensitive approaches into health services may further enhance CST uptake and

support long term HIV management efforts.

Limitation of this study is the lack of exploration of contextual factors that could potentially influence the relationship between social support and CST HIV service utilization. Aspects such as societal stigma, experiences of discrimination in health facilities, and the strength and function of MSM communities were not directly measured, even though these variables could moderate the level of support received and an individual's decision to access services. The absence of measurement of this social context may result in a less comprehensive understanding of the structural and environmental barriers that influence MSM service-seeking behavior.

CONCLUSION

This study concludes that social support is a fundamental determinant in enhancing the utilization of HIV Care, Support, and Treatment (CST) services among Men Who Have Sex with Men (MSM) in Medan City. While all dimensions of social support—emotional, appraisal, informational, and instrumental—demonstrated a positive correlation with service uptake, informational support emerged as the most dominant factor. The multivariate analysis indicates that individuals with high informational support are 4.3 times more likely to engage optimally with CST services, as clear and trusted information effectively reduces health-related anxiety and addresses misconceptions regarding HIV status.

Furthermore, emotional support was identified as the second most influential predictor, highlighting that feeling valued and understood within peer networks significantly increases the motivation to access care in environments often plagued by stigma. To achieve the global "95-95-95" elimination targets, it is essential to move beyond clinical treatment alone and strengthen community-based support systems.

The study recommends that public health interventions prioritize peer-led educational strategies, expand outreach through digital and community pathways, and foster stigma-free communication environments. By reinforcing these multilayered social support mechanisms, healthcare providers can bridge the current gap in service utilization and ensure sustained health engagement among the MSM population.

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CONFLICTS OF INTEREST

The author(s) declares no conflicts of interest related to the findings of this article.

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