

## *Building Social Coherence and Health Literacy: A Salutogenic Perspective on HIV Knowledge and Stigma in Cultural Tourism Communities*

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### ABSTRACT

**Background:** HIV prevention in rural communities like Ngadas Village (Mount Bromo) faces two major challenges: stigma driven by misconceptions and the need for social resilience amid rapid social and economic transitions influenced by tourism. Limited access to health information and education increases the risk of myths, discrimination, and a poor sense of coherence. This salutogenic study explores how community coherence and cultural strength can serve as resources to reduce HIV stigma and promote resilience. **Objective:** This study aims to evaluate the level of HIV knowledge and stigma among residents of Ngadas Village and identify factors influencing them. **Methods:** A cross-sectional quantitative design was used, involving 102 residents who completed a structured questionnaire covering demographics, HIV knowledge, stigma, and attitudes. Data analysis employed chi-square tests and logistic regression ( $p < 0.05$ ) to determine significant predictors. **Results:** Most respondents (90.2%) were female, with 66.7% having primary education. Although 66.7% demonstrated good general knowledge, a significant gap in health literacy existed—94% misunderstood HIV transmission, wrongly believing it spread through sharing meals or cutlery. This misconception contributed to high stigma levels, with 49% exhibiting poor or high stigma. Higher education (Junior High OR: 10.9; Senior High OR: 7.4) and middle income (OR: 3.4) significantly predicted lower stigma. A more positive attitude was also associated with middle income (OR: 5.4). **Conclusion:** Misconceptions about casual HIV transmission are the primary source of stigma and barriers to social coherence. Targeted health literacy interventions, combined with economic empowerment and improved access to education, are essential to strengthen community resilience and reduce HIV-related stigma.

**Keywords:** HIV; Knowledge; Rural Communities; Stigma

### INTRODUCTION

Human Immunodeficiency Virus (HIV) is continue to constitute a global health issue because they are highly morbid, transmissible, and intertwined with social stigma, low access to healthcare, and health illiteracy (Gray et al., 2017). HIV is also a dangerous infection, immune system attack, and it has a close epidemiological correlation with other STIs. The correlation between common STIs, including gonorrhea, syphilis, and genital herpes, is confirmed to speed up HIV spread by several folds due to tissue mucosis damage and the

concentration of HIV target cells on the site of infection (Du et al., 2022; McIntosh, 2020; Naif, 2013). Although first infection of HIV may be asymptomatic, transmission mostly occurs due to unprotected vaginal and anal sex (Choi et al., 2008; Valverde et al., 2014), and the main difficulty in making effective intervention is to break the social stigma which hinders the effective control of the disease.

The Women of Reproductive Age (WRA) is a highly vulnerable group of persons, both socially and biologically. Complex and more open structures make women more susceptible to STIs medically. Moreover, the probability of

complications, such as pregnancy complications, infertility, and vertical transmission (mother-to-child), points to the paramount importance of the effective STI and HIV prevention and education among WRA (McIntosh, 2020). In most developing nations, however, the problem of these critical health concerns is aggravated by deeply rooted social-cultural standards, sexual taboos, and strong stigma, even though they have the most substantial burden of the diseases (Abdul et al., 2025; Chandra-Mouli et al., 2021). Specifically, the issue is acute in the rural areas where the official access to health information is scarce, and the communities were predisposed to health misinformation and myths, which is one of the major causes of HIV-related discrimination.

These difficulties are further complicated by the fact that the social environment of the tourism villages is dynamic as the villages are faced with an increase in the levels of population movement and socialization between the locals and the visitors. Though economically advantageous, such mobility increases the threat of the transmission of infectious diseases, such as HIV and STIs (Aparenteng et al., 2024). Research has been carried out in countries with high tourist numbers like South Africa, which has shown that there is a relationship between the rise in tourism and the rise in HIV among the local people as a result of increased social interaction and risky behaviors (Wulandari & Laksono, 2019). It is also complicated by the fact that in Indonesia, sexual health problems are often regarded as a taboo and it is not spoken about even within families (Kemenkes RI, 2011; Rokhmah & Khoiron, 2015).

This paper in particular dwells upon the Ngadas Village, a native cultural tourist site in the Poncokusumo District of Malang Regency, the remote mountainous area of Bromo-Semeru (Badan Pusat Statistik, 2024). The strong traditional values and dependence of this community on agriculture, coupled with long geographical distance between this community and the main urban health services, lead to the high level of social closure and the reduced access to the comprehensive information on sexual health. The health literacy of Indonesian rural governments is also a notoriously

documented situation, and according to studies, 50%-54% of health service users in such regions as Riau and West Kalimantan have insufficient knowledge of STIs, which is a clear difference with urban populations (Abduh et al., 2024; Nilasari et al., 2024; Roselina & Muhammad, 2023).

Importantly, HIV-related stigma continues to be the sole most significant impediment to the effectiveness of global HIV response as it is the only collateral obstructing testing, disclosure, and the adherence to treatment (Rice et al., 2018; UNAIDS, 2023). Although the traditional public health is largely based on reducing risk factors (pathogenesis), this research takes an alternative approach the salutogenic theory introduced by Antonovsky (1979), that does not focus on reducing risk factors but instead focuses on resources helpful in improving health (Mittelmark et al., 2017). Generalised Resistance Resources (GRR) are these resources and they encompass social cohesion, cultural strength and a strong Sense of Coherence (SOC)-that life is understandable, controllable and has a purpose. The high level of traditional values, the culture of supporting each other, strong customary values, and strong social bond of Ngadas Village can be considered as the important Salutogenic elements and social capital that can be mobilized to counter health adversities.

The misconceptions concerning the casual transmission are the primary origin of this stigma (Liu et al., 2023). It is imperative to know the underlying causes of stigma, i.e. how structural determinants such as education and income are predictive of knowledge and attitudes to design effective, sustainable and context-specific community interventions (Sul et al., 2023; Winarto et al., 2023).

This study, thus, seeks to examine predictive factors affecting HIV knowledge, stigma, and attitude among Ngadas Village residents by endeavoring to understand how the social and economic resources of the community can be mobilized to enhance Health Literacy and Social Coherence to HIV stigma. The results can be used to offer practical evidence to direct focus on the specific public health policy, utilizing the intrinsic potential of the community and the cultural context to develop the long-term social resilience.

## METHODS

### Study Area

The study was a cross-sectional which was carried out in Poncokusumo District, Ngadas Village, Malang Regency, East Java, Indonesia. Ngadas is a registered indigenous cultural tourism village (Desa Wisata Adat) on the slope of mountain Bromo and Semeru. It is characterized by a strong social cohesion, farming practices and micro-tourism enterprises and high level of low formal education (mostly primary school). The reason behind this special context was to test how traditional community set ups, exposing them to external tourism, and their health level of knowledge on HIV/AIDS interact.

### Study design, population, and determination of sample size

The research design used in this study was a quantitative descriptive and analytic cross-sectional design conducted in September 2025. The target population was comprised of any permanent adult resident (19 years old and above) of the Ngidas Village. The sampling method was developed to focus on persons within the productive age segment (19-50 years) since they are the main participants in the local micro-tourism economy as well as decision-making in their families. Descriptive studies have known techniques of calculating their sample size. This was possible with the final sample of N=102 since convenience sampling was used and the focus was on the adults that were readily available and matched the inclusion criteria. The inclusion criteria were that the respondents should be permanent resident of Ngadas Village, 19 years of age, and willing to give informed consent.

### Data Collection

A structured interviewer-administered questionnaire was used to gather the data to provide standardized measurement and to cater to the low levels of formal literacy among the community. The instrument has been extensively adapted and modified based on a number of established scales, knowledge items based on the HIV-KQ-18 scale (Carey & Schroder, 2002), stigma (Kalichman et al., 2005), and attitude (Arifin et al., 2025). The questionnaire was also

extensively tested before the main study, which gave satisfactory results of validity and reliability in accordance with the standard psychometric procedure. The last questionnaire consisted of four essential parts, namely Demographics, Knowledge (8 items with special questions on myths of casual transmission), HIV Stigma (5 items with a 5-point Likert scale), and attitude towards HIV (5 dichotomous items). To provide ethical compliance, the whole protocol was vetted and approved ethically by the Committee of Research and Innovation Ethics Brawijaya University (No. 518/UN10/KERIS/12/2025). The questionnaire was administered by resident doctors and the informed consent was obtained before the voluntary participation of the N=102 participants.

### Data Analysis

Questionnaire responses were keyed in manually after which they were keyed in a Microsoft Excel spreadsheet so as to be categorized. The SPSS statistical packages (version 26.0) were used to perform the statistical analysis. The sample demographics and the distribution of answers to all items were described by means of descriptive statistics, namely frequencies, percentages, mean, and standard deviation. The primary outcome variables, which were knowledge, stigma and attitude, were marked as either satisfactory or unsatisfactory in respect of a pre-identified cut-off score in further process of inferential analysis. Demographic variables (age, gender, education, income) were first analysed with the Chi-Square test ( $\chi^2$ ) regarding the dichotomous outcome variables. The variables that showed a correlation with a p-value of less than 0.25 in the bivariate analysis were then introduced into a Binary Logistic Regression model to get the independent predictors. The output of the regression models was the Adjusted Odds Ratio (OR) with 95% Confidence Interval (CI). In the course of the analysis, the maintained p-value was <0.05, which was used as the statistical significance threshold. Moreover, the salutogenic perspective on interpreting the socio-demographic data (education and income) and the main findings in terms of knowledge and stigma will be used based on the relationship between these structural factors and the Sense of Coherence of the community in relation to

its perceived comprehensibility, manageability, and meaningfulness of the HIV issue.

## RESULTS AND DISCUSSION

### Demographic Characteristics of Respondents

The demographical background of the respondents (N=102) in this study provides a vital background for interpreting results regarding the knowledge and stigma. This was represented as a sample of mean age 40.02±9.67 (majority of 70.6 percent were in the productive age group of 31-50 years). It is also a strongly female dominated community as most of the respondents (90.2) are female, indicating that the findings are mostly representative of the views of the main caregivers and micro-business players at the centre of the daily activities of the cultural tourism village. Similar demographic patterns have been reported in community-based HIV studies in Indonesia and other LMICs (Virdausi et al., 2022; Winarto et al., 2023). One of the structural issues is the level of education with the greatest portion having only completed the Elementary School (66.7%), a critical determinant of health literacy (Nutbeam, 2008). In economic terms, the majority of the respondents stated the middle level monthly income of Rp 1,000,001 - Rp 3,000,000 (51.0%). Remarkably, even in a tourism destination where the interaction level is often high, 64.7 percent of the respondents said they had never heard of HIV, which is a serious information deficit on the basic level, requiring literacy-appropriate health education intervention, this indicating limited access to formal health information.

**Table 1.** Demographic Characteristics of Respondent's

Variable	Frequency [n(%)] (n = 102)
<b>Age (years old), mean±SD</b>	<b>40.02±9.67</b>
19-30	18 (17.6)
31-50	72 (70.6)
>50	12 (11.8)
<b>Gender</b>	
Male	10 (9.8)
Female	92 (90.2)
<b>Education Status</b>	
Elementary school	68 (66.7)
Middle school	26 (25.5)
High school	8 (7.8)

Variable	Frequency [n(%)] (n = 102)
<b>Income</b>	
≤ IDR 1.000.000	30 (29.4)
IDR 1.000.001 -	52 (51.0)
IDR 3.000.000	20 (19.6)
IDR 3.000.001 -	
IDR 5.000.000	
<b>Have you ever heard of HIV?</b>	
No	66 (64.7)
Yes	36 (35.3)

SD = Standard Deviation, n = total

### Respondent's Knowledge of HIV

The study of the distribution of HIV knowledge answers indicates that the knowledge paradox in Ngadas Village is very high. In general, respondents had sufficient knowledge about high-risk modes of transmission; most of them were correct in their responses to the question of whether HIV can be transmitted by having unprotected sex (80.4%), as well as by sharing unsterile needles (70.2%). Besides, a large percentage of respondents admitted that condom transmission could be stopped by proper use of condoms (64.7%). But the structures of causal knowledge of this underpinning are drastically weakened by the fact that the myths of causal transmission continue to be perpetuated. However, 94.1% of respondents were believed HIV could be transmitted through sharing food or cutlery. Such a gross misunderstanding is supported by the fact that 82.4% of the study participants think that HIV can be contracted through bites of a mosquito and 94.1% of the respondents are moving in the wrong direction by believing that PLWHA are always ill. Such commonness of these informal transmission myths is not just a lack of knowledge but rather a matured belief and the main source of the great level of stigmatization that has been documented in this community. This paradox—adequate general awareness with severe misconceptions—has been reported in rural settings globally (Jahić et al., 2020; Liu et al., 2023). This also in line with previous study, that myths of casual transmission are known to be stronger predictors of stigma than low general knowledge (Kalichman et al., 2005; Li et al., 2024).

This myth, when applied to a cultural tourism village, generates social fear based on nothing, that may interfere with social cohesion and inclusive tourism

behaviours. Thus, there is a need to explicitly focus on such educational strategies on the demystification of such myths about casual transmission, which literature has already found that the

beliefs about casual transmission are stronger predictors of discriminatory behavior as opposed to low general knowledge (Liu et al., 2023).

**Table 2.** Distribution of Respondent's Knowledge Answers on HIV

Questions	Distribution of Answer (n[%])	
	Incorrect	Correct
<b>Knowledge section</b>		
1. HIV can be transmitted through sharing unsterile syringes/needles.	30 (29.4)	72 (70.2)
2. HIV can be transmitted through sexual intercourse without a condom.	20 (19.6)	82 (80.4)
3. HIV can be transmitted through mosquito bites.	84 (82.4)	18 (17.6)
4. People living with HIV usually look sick.	96 (94.1)	6 (5.9)
5. An HIV-positive mother can transmit it to her baby during pregnancy or childbirth.	34 (33.3)	68 (66.7)
6. Using condoms correctly can prevent HIV transmission.	36 (35.3)	66 (64.7)
7. People who look healthy can still be infected with HIV.	60 (58.8)	42 (41.2)
8. HIV can be transmitted through eating together or sharing cutlery.	82 (80.4)	20 (19.6)

### Respondent's Stigma

Goffman posits that stigma functions as a pervasive social force that complicates daily interactions. Consequently, stigmatized individuals often navigate their social environments with heightened caution, particularly when engaging with those who do not share similar attributes (Ayiigah et al., 2024).

This is evident in the distribution of the responses regarding the stigma of HIV (Table 3) which shows that there is multi-dimensional and pervasive stigma in the Ngadas community. The most noticeable result is that the rate of personal discomfort and avoidance is extremely high, and the combination of the rate of agreeing and strongly agreeing is 62.7% of the respondents who feel unsafe around a person who is HIV-positive. This fear is a direct aftereffect of the ingrained casual transmission myths that were detected in the knowledge section (94.1% misconception regarding sharing food/cutlery). This fear is translated into social exclusion as was seen in 21.6% of those who would refuse to feed a PLWHA in their home. In addition, the stigma is very moralistic and punitive: 56.8% agreed or strongly agreed that PLWHA receive what they deserve. This stigmatisation of punishment is an indication of the moral

stigma put upon the disease, which is a huge obstacle to care seeking. Such moralistic stigma has been consistently linked to delayed testing and poor engagement in care (Rice et al., 2018; UNAIDS, 2023).

Structural discrimination is also highly predisposed in the community and 52.9% of the population feel that PLWHA ought not to hide their status with the neighbor. The motivation behind this intention to impose disclosure is forceful control and safety in the community taking communal fear higher than the right to privacy of individuals. Although the respondents were strong in their attitudes toward giving PLWHA normal healthcare services, the moral principle is not supported by the acceptance in the everyday socialization and rejection of punitive opinions. The research clearly shows that these widespread beliefs on the subject of casual transmission invariably stand out as the best predictors of avoidance and discriminatory attitude (Liu et al., 2023), which promotes the notion that demystification of these myths should be the main objective of any intervention that will reduce stigma in this cultural tourism community. This aligning with finding from other conservative rural communities (Kinsler et al., 2007; Saad et al., 2024).

**Table 3.** Distribution of Respondent's Answers on Stigma of HIV

Questions		Distribution of Answer (n[%])				
Stigma section		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I feel uncomfortable being around a person who is HIV-positive.	8 (7.9)	8 (7.8)	22 (21.6)	50 (49.0)	4 (13.7)
2.	I think people who are HIV-positive get what they deserve.	12 (11.8)	14 (13.7)	18 (17.6)	40 (39.2)	18 (17.6)
3.	I would refuse to provide food to a PLWHA in my home.	16 (15.7)	30 (29.4)	34 (33.3)	16 (15.7)	6 (5.9)
4.	PLWHA should not keep their status a secret from their neighbors.	22 (21.6)	14 (13.7)	12 (11.8)	34 (33.3)	20 (19.6)
5.	People with HIV deserve to receive healthcare services as usual.	48 (47.1)	30 (29.4)	10 (9.8)	6 (5.9)	8 (7.8)

### Respondents Attitude

The attitude component demonstrates the deep psycho-social influence of the existing stigma on individual and family choices on the HIV status. The most unanimity among the respondents was in regard to the widespread social climate: an appreciable 74.5% stated correctly that others will postpone the HIV treatment due to the surrounding views that one may face in case the outcome is positive. Equally, 54.9% were correct to note that individuals usually talk poorly about PLWHA. These numbers support the awareness level of the community towards the established stigma in the population and its contribution to the social structural barrier of a significant barrier to HIV testing and uptake of interventions (Saad et al., 2024).

Nonetheless, this sense of social stigma is also a source of internalized and family stigma. Most of the respondents, 70.6% would personally perpetuate secrecy and shame, as indicated by percentage of those who gave incorrect (representing yes to the negative attitude), 54.9% would be ashamed had a family member were HIV-positive. Such a massive desire to stay secret and feel ashamed shows the fear of

face loss and external rejection that outweighs the necessity to have family support, which is quite similar in conservative cultural contexts (Li et al., 2024). This indicate that accepting PLWHA still requires reasonable efforts and resources (Virdausi et al., 2022).

Moreover, the effect of the knowledge gap is still observed, 70.6% said that they do not know that they were scared of becoming an HIV because of contact with the saliva of an infected person. Though this falls under attitude, the answer directly attests the behavioral effect of the casual transmission myth. The threat of transmission of HIV by harmless body fluids does not allow one to approach the other compassionately and social isolation continues, which further strengthens the thirst of the community in secrecy. All these attitudes point to the fact that although the community is aware of stigma as an issue, they internalize and reproduce it both on the personal level and the family level. Above all, the satisfactory overall attitude level (68.6) indicates a strong moral disposition to empathy and support of PLWHA, which is a critical structural asset and an effective salutogenic entry point of community based participatory education.

**Table 4.** Distribution of Respondent's Answers on Attitude of HIV

Questions		Distribution of Answer (n[%])	
Attitude section		Incorrect	Correct
1.	I would feel ashamed if a family member were HIV-positive.	46 (45.1)	56 (54.9)
2.	I would want the HIV status within the family to remain a secret.	73 (70.6)	30 (29.4)
3.	People often speak badly about PLWHA.	46 (45.1)	56 (54.9)
4.	I am afraid of catching HIV through contact with the saliva of an infected person.	34 (33.3)	68 (66.)
5.	Many people delay HIV testing because they fear others' reactions if the result is positive.	26 (25.5)	76 (74.5)



**Table 5.** Average Score Obtained by Respondents

Outcome Variable	Score Received by Respondent's		Mean $\pm$ SD	Satisfactory	Unsatisfactory
	Minimum	Maximum		n (%)	n (%)
Knowledge	0	7	3.7 $\pm$ 1.98	68 (66.7)	34 (33.3)
Stigma	5	24	14.7 $\pm$ 3.8	52 (51.0)	50 (49.0)
Attitude	0	5	2.8 $\pm$ 1.3	70 (68.6)	32 (31.4)

The general analysis of outcome variables indicates a multifaceted profile of Ngadas community (Table 5). In terms of knowledge, respondents scored an average of 3.7 $\pm$ 1.98 (with a maximum of 7), and 66.7% were rated as having satisfactory knowledge. This seemingly positive aggregate mark, however, has to be put on context by the above detailed analysis, which has shown a critical failure, in regard to the myths of casual transmission (94.1% error rate), showing how sufficiently good knowledge is utterly partial and without functional accuracy. In the case of stigma, the mean score was 14.7 $\pm$ 3.8 (with a maximum of 24), and the respondents were nearly divided into two-half having satisfactory (low) stigma and the other half had unsatisfactory (high) stigma. This approximate balance proves that stigma is a significant problem, and it is largely caused by misinformation and moralistic condemnations, which is in line with the earlier research within the same context (Liu et al., 2023).

On the other hand, attitude recorded the best score with a mean of 2.8 $\pm$ 1.3 (out of 5 possible points) and 68.6% of them were satisfactory (positive). This implies that the community has a good moral readiness or desire to assist PLWHA, which in the salutogenic paradigm is an already existing Generalised Resistance Resource (GRR). However, the large percentage of unsatisfactory stigma (49.0%) shows that there is indeed a large gap between the positive moral intent of the community (attitude) and their actual ability to interact without avoidance or judgment (stigma), which is directly contributed to by the deep-rooted knowledge gaps on non-transmission.

#### Predictor Factors Among Knowledge of Respondents

The bivariate and preliminary multivariate analysis based on the factors that affected satisfactory HIV knowledge (Table 6) provided some interesting information, but none of the relationships

was found to be statistically significant at  $\alpha=0.05$  level.

The Chi-Square test showed that there was a statistically significant correlation of education status and knowledge level ( $p=0.029$ ). The respondents who had higher education tended to have improved knowledge. This result validates the known role of formal education as a health literacy determinant (Oladepo & Fayemi, 2011). This is likely because higher levels of education make information easier to access and help people better process what they learn (Agegnehu et al., 2020; Virdausi et al., 2022). Furthermore, providing the right resources can lead to better understanding and more positive attitudes toward PLWHA, which is essential for managing HIV/AIDS treatment and reducing its spread (Agegnehu et al., 2020; Bulali et al., 2018; Doat et al., 2019).

Other demographic factors, such as age ( $p=0.535$ ), gender ( $p=0.060$ ), income ( $p=0.933$ ), and previous knowledge of HIV ( $p=1.000$ ) did not provide statistically significant values as to relate to the overall knowledge score. It is worth noting that even though female respondents were more satisfied with their knowledge (69.6% versus 40.0% in males), the difference was only marginally significant ( $p=0.060$ ). The absence of correlation with previous awareness brings out a very important fact, that being exposed to HIV simply because of hearing does not equate to possession of functionally correct knowledge, especially with regard to the myths of casual transmission found above. The main inference is that even though formal education is the most promising avenue toward increased knowledge of HIV, the existing model and data indicate that other, possibly more contextual or psychological variables (such as exposure to certain health campaigns or intrinsic motivation) may be stronger independent predictors than the basic socio-demographic variables (Jahić et al., 2020).

**Table 6. Predictor Factors among Knowledge of Respondents**

Variable	Satisfactory n (%)	Unsatisfactory n (%)	p-value (X <sup>2</sup> )	OR	95% (CI)	p-value
<b>Age (years old)</b>						
19-30	14 (77.8)	4 (22.2)	0.535	Ref.	Na.	Na.
31-50	46 (63.9)	26 (36.1)		1.5	0.3-6.4	0.594
>50	8 (66.7)	4 (33.3)		4.5	0.5-39.7	0.177
<b>Gender</b>						
Male	4 (40.0)	6 (60.0)	0.060	Ref.	Na.	Na.
Female	64 (69.6)	28 (30.4)		6.0	0.9-38.9	0.060
<b>Education Status</b>						
Elementary school	40 (58.8)	28 (41.2)	0.029	Ref.	Na.	0.131
Middle school	20 (76.9)	6 (23.1)		2.3	0.8-7.1	0.999
High school	8 (100.0)	0 (0.0)		Na.	Na.	Na.
<b>Parent's Income</b>						
≤IDR 1.000.000	20 (66.7)	10 (33.3)	0.933	Ref.	Na.	Na.
IDR 1.000.001 - 3.000.000	34 (63.4)	18 (34.6)		0.5	0.2-1.5	0.217
IDR 3.000.001 - 5.000.000	14 (70.0)	6 (30.0)		0.6	0.1-2.2	0.401
<b>Have you ever heard of HIV?</b>						
No	44 (66.7)	22 (33.3)	1.000	Ref.	Na.	Na.
Yes	24 (66.7)	12 (33.3)		1.2	0.4-3.2	0.751

OR = odds ratio, CI = confidence interval, \* = significant at 5% ( $p < 0,05$ ), <sup>b</sup> = significant at 25% ( $p < 0,25$ ), Ref = reference, X<sup>2</sup> = chi-square

### Predictor Factors among Stigma of Respondents

The 'fear of stigma' reduces people's willingness to test for or access treatment and support for HIV (Ayiigah et al., 2024; Nyblade et al., 2019). The research result of the multivariate analysis which identified independent predictors of satisfactory (low) HIV stigma was that socio-economic factors, namely education and income were the most influential factors of decreasing stigma among the Ngadas cultural tourism community (Table 7).

The strongest predictor became educational status. Compared to those with only an elementary school education (the reference group), individuals who attended middle school were 7.4 times more likely to exhibit low stigma ( $p = 0.001$ , 95% CI: 2.3-23.4), while those with a high school education were 10.9 times more likely ( $p = 0.045$ , 95% CI: 1.1-113.4). This indicate that lower education can lead to less knowledge about HIV, which may result in avoidance behaviors and excessive use of protective measures, ultimately increasing stigma against PLWHA (Irmayati et al., 2019; Winarto et al., 2023). Such a close correlation validates that formal education provides the cognitive framework needed to

disregard misinformation—specifically common myths regarding modes of transmission—and nurture tolerance. Higher education is a structural salutogenic resource, as it enhances the levels of critical thinking and, therefore, allows individuals to differentiate between facts and detrimental folklore, which is similarly reflected in the global literature that shows that higher education is negatively associated with punitive attitudes towards PLWHA (Liu et al., 2023).

Income of Parent was also found to be statistically significant predictor of lower stigma. In the IDR 1,000,001 - 3,000,000 middle-income category, respondents were 3.4 times more likely to have low stigma than the lowest income category ( $p = 0.040$ , 95% CI: 1.1-11.1). It means that the better a population is economically secure and well-being, the more social coherence and lower moralistic judgment, the more empathy, and less discrimination based on anxiety (Kinsler et al., 2007; Virdausi et al., 2022). Such a correlation is an indication that the economic empowerment programs that are incorporated in tourism village development can have significant social health impact than financial stability.

On the other hand, gender, prior awareness and age (although bivariate p-

value was significant 0.041) were not statistically significant in the multivariate model ( $p > 0.05$ ). This implies that although older groups or certain genders might have differences in stigma in a preliminary study, it is the strong force of an educational background and an economic

status that controls the ultimate propensity to stigma. The insignificance of prior awareness of HIV also underlines the idea that passive exposure to the term HIV does not result in the functional, myth-busting knowledge one needs to receive to overcome the stigma.

**Table 7. Predictor Factors among Stigma of Respondents**

Variable	Satisfactory n (%)	Unsatisfactory n (%)	p-value ( $\chi^2$ )	OR	95% (CI)	p-value
<b>Age (years old)</b>						
19-30	10 (55.6)	8 (44.4)	0.041*	Ref.	Na.	Na.
31-50	32 (44.4)	40 (55.6)		1.9	0.3-9.9	0.465
>50	10 (83.3)	2 (16.7)		15.1	1.2-194.3	0.587
<b>Gender</b>						
Male	6 (60.0)	4 (40.0)	0.548	Ref.	Na.	Na.
Female	46 (50.0)	46 (50.0)		0.7	0.1-4.4	0.670
<b>Education Status</b>						
Elementary school	26 (38.2)	42 (61.8)	0.001*	Ref.	Na.	Na.
Middle school	20 (76.9)	6 (23.1)		7.4	2.3-23.4	0.001
High school	6 (75.0)	2 (25.0)		10.9	1.1-113.4	0.045
<b>Parent's Income</b>						
≤IDR 1.000.000	10 (33.3)	20 (66.7)	0.048*	Ref.	Na.	Na.
IDR 1.000.001 - 3.000.000	32 (61.5)	20 (38.5)		3.4	1.1-11.1	0.040
IDR 3.000.001 - 5.000.000	10 (50.0)	10 (50.0)		1.4	0.3-6.1	0.651
<b>Have you ever heard of HIV?</b>						
No	34 (51.5)	32 (48.5)	0.884	Ref.	Na.	Na.
Yes	18 (50.0)	18 (50.0)		0.5	0.2-1.6	0.264

OR = odds ratio, CI = confidence interval, \* = significant at 5% ( $p < 0.05$ ), <sup>b</sup> = significant at 25% ( $p < 0.25$ ), Ref = reference,  $\chi^2$  = chi-square

### Predictor Factors among Attitude of Responden

The multivariate analysis determining the factors affecting satisfactory (positive) attitudes towards HIV (Table 8) found only Parents Income as the statistically significant independent predictor with the focus on the correlation between economic welfare and social support within the cultural tourism community.

There was strong and significant positive relationship between Parents Income and Positive attitude. In particular, the respondents with the IDR 1,000,001 - 3,000,000 middle-income level were found to have a higher likelihood of having a satisfactory attitude as compared to the lowest-income group ( $\leq$ IDR 1,000,000) by a factor of 5.4 ( $p = 0.005$ , 95% CI: 1.717.2). This observation implies that moderate economic stability is a very crucial antecedent of social empathy and inclusion. Once basic financial requirements are comparatively stable,

the persons can be more open to disseminate the well-being of others and less apt to internalize the fears of stigma. This association is consistent with the study that has shown that better socioeconomic status tends to be associated with higher social capital and reduced hostility to vulnerable populations, therefore, creating a more supportive environment (Kinsler et al., 2007; Virdausi et al., 2022; Wawrzyniak et al., 2013).

Other variables like age, gender, education status and previous awareness did not come out as independent predictors of attitude ( $p > 0.05$ ). Whereas, the bivariate Chi-Square test revealed significant association with gender ( $p = 0.040$ ) it did not hold significant in the adjusted multivariate model which implied that the initial association was confounded by the greater underlying effect of income. The insignificance of education status also suggests that although education is important in correcting factual knowledge

and minimizing stigma itself (see Table 7) it is economic stability that drives the willingness or the intention to provide

support (attitude) in this particular community.

**Table 8. Predictor Factors among Attitude of Respondents**

Variable	Satisfactory n (%)	Unsatisfactory n (%)	p-value (X <sup>2</sup> )	OR	95% (CI)	p-value
<b>Age (years old)</b>						
19-30	14 (77.8)	4 (22.2)	0.654	Ref.	Na.	Na.
31-50	46 (63.9)	26 (36.1)		0.4	0.1-2.6	0.353
>50	8 (66.7)	4 (33.3)		1.0	0.1-14.8	0.947
<b>Gender</b>						
Male	4 (40.0)	6 (60.0)	0.040*	Ref.	Na.	Na.
Female	66 (71.7)	26 (28.3)		2.9	0.4-20.1	0.277
<b>Education Status</b>						
Elementary school	42 (61.8)	26 (38.2)	0.094	Ref.	Na.	Na.
Middle school	22 (85.6)	4 (15.4)		2.6	0.7-9.2	0.146
High school	6 (75.0)	2 (25.0)		0.7	0.1-8.6	0.796
<b>Parent's Income</b>						
≤IDR 1.000.000	14 (46.7)	16 (53.3)	0.001*	Ref.	Na.	Na.
IDR 1.000.001 - 3.000.000	44 (84.6)	8 (15.4)		5.4	1.7-17.2	0.005*
IDR 3.000.001 - 5.000.000	12 (60.0)	8 (40.0)		1.3	0.4-5.1	0.663
<b>Have you ever heard of HIV?</b>						
No	44 (66.7)	22 (33.3)	0.563	Ref.	Na.	Na.
Yes	26 (72.2)	10 (27.8)		0.9	0.3-2.9	0.939

OR = odds ratio, CI = confidence interval, \* = significant at 5% ( $p < 0,05$ ), <sup>b</sup> = significant at 25% ( $p < 0,25$ ), Ref = reference, X<sup>2</sup> = chi-square

### Salutogenic Interpretation of Findings

Antonovsky's Salutogenic Model provides a framework that emphasizes the utilization of resources and coping strategies to navigate stress and challenges. At its core lies the sense of coherence, which represents an individual's capacity to perceive life as comprehensible, manageable, and meaningful (González-Siles et al., 2022; Long et al., 2025).

The high predictive validity of education and income in alleviating stigma offers a very important salutogenic perspective of interpreting the findings, repositioning these structural variables not only as risk factors of demography, but as Generalised Resistance Resources (GRRs) increasing the ability of the community to cope with health-related problems (Antonovsky, 1979; Mittelmark et al., 2022).

Formal education (middle school (OR 7.4); high school (OR 10.9) is a structural GRR that increases the health literacy (Nutbeam, 2008) and the understanding aspect of the Sense of Coherence (SOC). The cognitive ability and critical thinking required to dismiss the

myths of casual transmission (e.g., sharing cutlery) which are so widespread in our culture, can be acquired only through higher education. Education enables people to better differentiate between fact and myth and lowers the uncertainty and fear associated with HIV, turning the problem into a health concern that can be addressed instead of an unnamable evil (Eriksson & Lindström, 2008). This observation confirms the necessity of specific educational interventions, which use formal organizations to develop factual health literacy and reduce stigma at the same time.

In the same way, higher income (middle income: OR 3.4 of stigma; OR 5.4 of attitude) is a GRR because it creates manageability and meaningfulness in the community. Economic stability decreases the existential anxiety and economic strain which are the major cause of moralistic judgment and discrimination of vulnerable populations. When people feel their lives are manageable, they are in a better position to show empathy, and social support (positive attitude), in place of punitive stigmatization. Moreover, social cohesion, which is among the salutogenic

factors, is also increased by this resource as the members are free to contribute to and benefit the cultural tourism economy without fear of being stigmatized, and the group is made to believe that social resources are accessible and dependable (Mottershead et al., 2024). Economic empowerment can be used to activate and maintain the already identified community strength, the positive attitude, and it will act as a moral and social protective barrier against the disruptive impact of health fear.

### Strengths and Limitations of Study

This research presents a number of strengths, especially considering that it is about a distinct cultural tourism community (Ngadas Village), which also introduces the new element of novelty and contextual validity through its ability to connect public health outcomes and socio-economic processes. The strongest methodological strength of the research is the application of multivariate logistic regression that generated a solid evidence to confirm that education and income were independent structural predictors of decreased stigma and better attitude. Moreover, the analysis has managed to reveal a vital, specific public health barrier, which is the excessive prevalence of the myth about the casual transmission (94.1% error) of sharing eating/cutlery. This new discovery is very practical and can be put into practice in future interventions, which will be specifically focused on demystifying this main misunderstanding instead of spending resources on the general awareness campaigns. Lastly, the study also presents a clear validation of the fact that the anticipated stigma (fear of the reaction of others) is the key factor stopping HIV testing, and it directly defines the choice of stigma-reduction activity.

The study has various limitations that are inherent to its design, despite its strengths. To begin with, it is a cross-sectional study, which can only be associative, not causal. That is why it cannot validate whether higher education will reduce stigma or people with less stigma just have more probability to obtain higher education. Second, the small sample (N=102) and low range of demographic variation (e.g., 90% female, 66% primary education) restrains the statistical power, which may result in the

non-significance of otherwise relevant variables such as age and gender in the multivariate models. Thirdly, there is the potential of social desirability bias, which is likely to have caused respondents, in a small, intimate community, to suggest socially acceptable attitudes, instead of the actual stigmatizing attitudes they hold. Finally, the general, satisfied knowledge score was observed to be operationally inaccurate as it was distorted by the affirmative response to the simple questions and concealed the severe and extreme lack of knowledge about the facts of non-transmission.

### Recommendation of Study

The results imply that cultural tourism communities such as Ngadas require a paradigm shift in their intervention strategies on HIV. The fact that stigma is particularly high is directly connected to the established myth of casual transmission (e.g. as a result of sharing food/cutlery) and hence prevention programs cannot afford to work solely on general awareness, but targeted demystification campaigns that would directly address these particular myths and correct them in a culturally competent way. Additionally, since higher education (OR: 10.9) and middle income (OR: 3.4) were found to be the most influential independent variables in predicting lower stigma, the interventions in the future should take a structural approach. The inclusion of public health programs with socio-economic empowerment programs should be incorporated like raising the number of students accessing formal secondary education and promotion of economic development related to tourism. The new structural interventions will be beneficial to health literacy, critical thinking, and social coherence and will eventually lead to the most effective long-term approach to stigma reduction and delivering essential testing and prevention services related to HIV in this special environment.

### CONCLUSION

This paper validates a key medical health paradox among the Ngadas people: even though the general knowledge and good moral values are satisfactory, there are severe misunderstandings related to informal HIV transmission, which is the

main factor contributing to the high stigma. This is an element of the structure that requires a change in emphasis between a pathogenesis perspective and a salutogenic one. These results confirm that socio-economic factors serve as the strongest predictors of reduced stigma, education is the most predictive of reduced stigma, which improves the comprehensibility and health literacy to break the myth of the situation, and middle income is one of the strongest predictors of a favorable attitude, which leads to manageability and social cohesion. The positive attitude that already exists in the community is an entry point that should be used effectively in preventing HIV. The interventions must be combined with special attention to the highly specific myth correction, structural initiatives (access to education and economic empowerment) that will carry the socio-economic resources into physical health benefits, thus solidifying the ability of the community to create a sustainably developed stigma-free community.

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#### CONFLICT OF INTEREST AND FUNDING DISCLOSURE

The authors state that they do not have any competing interests in the form of financial interests or other forms of interest that may have emerged to affect the work presented in this paper.

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