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**COMMUNITY BELIEFS, HEALTH SEEKING BEHAVIOR,
AND MALARIA AMONG THE ANAK DALAM
INDIGENOUS COMMUNITY IN JAMBI**

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ABSTRACT

Background: Kuro fever (malaria) remains a health problem among the Suku Anak Dalam (SAD) community in Jambi Province. The persistence of the disease is closely related to local cultural beliefs and patterns of health-seeking behavior that influence treatment choices. This study aims to analyze the relationship between health beliefs, health-seeking behavior, and the incidence of kuro fever among the Suku Anak Dalam community. **Method:** A mixed-method study was conducted using a cross-sectional quantitative survey of 41 respondents and in-depth interviews with selected informants. Quantitative data were analyzed using Chi-square and logistic regression tests, while qualitative data were analyzed thematically to explore the underlying beliefs and behaviors related to kuro fever. **Result:** Quantitative analysis showed that poor beliefs about disease causation and self-treatment or traditional remedies were significantly associated with higher incidence of kuro fever ($p = 0.031$ and $p = 0.029$, respectively). Respondents with poor health beliefs had a 5.88 times higher risk, and those practicing self-treatment had a 5.33 times higher risk of kuro fever compared to those seeking formal healthcare. Multivariate analysis identified health-seeking behavior as the most dominant factor (aOR = 3.82; $p = 0.101$), explaining 25.7% of the variation in kuro fever incidence. Qualitative findings revealed that kuro fever was often perceived as resulting from eating sweet fruits or overexertion, leading to reliance on traditional healing before accessing formal health services. **Conclusion:** Health beliefs and health-seeking behavior play a crucial role in determining kuro fever incidence among the Suku Anak Dalam. Effective malaria control efforts should incorporate culturally sensitive health education and community engagement strategies, involving traditional leaders and locally trusted health workers to harmonize traditional and modern medical practices.

Keywords: health belief, health-seeking behavior, kuro fever, Suku Anak Dalam, malaria.

INTRODUCTION

Malaria is one of the infectious diseases that has a significant health impact in various parts of the world, especially in areas with limited access to health services (Kagawa Singer et al., 2016). Globally, as many as 247 million positive cases of Malaria have been reported in 84 malaria-endemic countries. Indonesia is one of the malaria-endemic countries with a total of 443,530 cases in 2023 (BPS RI, 2023). Meanwhile, in Jambi Province in 2022 there were 12,682 people and the districts/cities with the highest cases were Merangin (3,639 cases) and Sarolangun (3,494 cases) (Lewinsca et al., 2021).

Malaria endemic areas are areas that have dense forests and communities that are high risk factors for malaria transmission are communities that work or live close to forests or gardens. Especially in indigenous communities that often have different belief systems and health practices compared to the general public (Kementerian Kesehatan RI, 2022).

One of the provinces in Indonesia, namely Jambi Province, is one of the provinces that has a Remote Indigenous Community (KAT) from the Suku Anak Dalam (SAD) or Orang Rimbo of more than 5,235 people, with the largest distribution in Sarolangun Regency, namely 1,508 people, followed by the second and third ranks, namely Tebo Regency with 1,460 people and Merangin Regency with 1,403 people (KKI WARSI, 2018). The high incidence of malaria in the Suku Anak Dalam community in Jambi Province, Indonesia, is caused by various factors, including local beliefs about the disease that influence people's decisions to seek treatment (Lawrence, 2022).

Community beliefs about the causes and treatment of disease play an important role in determining health seeking behavior (HSB). Research shows that in many indigenous communities, malaria is often considered a disease caused by spirits or supernatural forces, so it is more often treated with traditional medicine than visiting modern health facilities (Koschorke et al., 2017). This leads to delays in diagnosis and treatment, which can worsen the patient's condition and increase the risk of transmission in the community.

Studies on community participation in primary health care programs have shown that approaches that actively involve the community can increase the effectiveness of health interventions. However, the success of this strategy depends heavily on understanding the socio-cultural dynamics that exist in the community (Thompson & Taylor, 2021). This culture-based approach is important to ensure that the health interventions implemented are well accepted and sustainable in local communities (Marmot, 2017).

Therefore, this study uses the Concurrent Triangulation approach to explore how beliefs about disease and treatment-seeking behavior affect malaria incidence in Suku Anak Dalam. By using a mixed method that combines qualitative and quantitative data, it is hoped that this study can provide more comprehensive insights into the factors that influence the high incidence of malaria in the community (Raghupathi & Raghupathi, 2018).

METHOD

This study employed a Mixed Method design with a Concurrent Triangulation Strategy to integrate quantitative and qualitative findings. The research was conducted in Bukit Suban Village, Air Hitam District, Sarolangun Regency, and Mentawak Village, Nalo Tantan District, Merangin Regency, Jambi Province, in September 2025.

The quantitative phase involved 41 respondents selected from the Anak Dalam Tribe population using a purposive sampling technique. Respondents were eligible if they

were (1) members of the Anak Dalam Tribe who had resided in the study area for at least six months, (2) aged 18 years or older, and (3) willing to participate voluntarily. Data were collected through structured questionnaires that assessed disease beliefs, health-seeking behavior (HSB), and history of kuro fever (malaria). Data were analyzed using IBM SPSS Statistics version 22. Univariate, bivariate (chi-square test), and multivariate (logistic regression) analyses were performed to determine the relationship and dominant factors influencing kuro fever incidence.

Six key informants were selected purposively and labeled as Informant 1–6. They consisted of the tribal leader (temenggung), traditional healers, and adult members of the Anak Dalam Tribe community who had experienced kuro fever or had family members who did. Each informant was coded numerically (I1–I6) to ensure confidentiality while enabling reference in qualitative quotes. Informants were chosen using a snowball sampling technique to capture diverse perspectives on health beliefs and treatment-seeking practices. The demographic profile of the informants is summarized in Table 5. All interviews were transcribed verbatim and analyzed using NVivo 15. Thematic analysis was applied through coding, data categorization, and interpretation to identify core themes reflecting cultural beliefs and health behaviors.

Quantitative and qualitative findings were integrated during the interpretation phase to ensure triangulation and enhance the validity of conclusions regarding the interplay between cultural beliefs, HSB, and malaria incidence among the Anak Dalam Tribe.

RESULT

The results of the sociodemographic univariate analysis showed that of the 41 respondents, most of them were adults aged 26–45 years (58.54%). The majority of respondents were female (58.54%), had local beliefs of the Anak Dalam tribe (78.05%), were married (85.37%), were from the Jon Tumenggung group (46.34%) and Jalo (41.46%). Most of the respondents did not/had never attended school (70.73%), were farmers/laborers/traders/hunters (53.66%), and all families earned income below the Provincial Minimum Wage (UMP) (Rp. 3,037,121). Most of them had National Health Insurance (JKN) health insurance (68.29%) and the number of household members was 5–10 people (58.54%) as can be seen in Table 1.

Table 1. Description of Respondents' Sociodemographic Characteristics

Variables and Categories	N	%
Respondents Age		
Teenagers (12-25 Years)	13	31,71
Adults (26-45 Years)	24	58,54
Elderly (46-65 Years)	4	9,76
Gender		
Female	24	58,54
Male	17	41,46
Religion		
Islam	5	12,20
Christianity	4	9,76
Local Beliefs	32	78,05
Marital Status		
Unmarried	6	14,63

Married	35	85,37
Tumenggung Name		
Jalo	17	41,46
Grip	5	12,20
Jon	19	46,34
Education		
No/never attended school	29	70,73
Did not finish elementary school	3	7,32
Finished elementary school	9	21,95
Occupation		
Not working/Housewife	19	46,34
Farmer/Laborer/Trader/Hunter	22	53,66
Income		
<UMP (Rp. 3.037.121)	41	100,00
Health Insurance (JKN)		
Yes	28	68,29
No	13	31,71
Number of Household Members		
<5 People	13	31,71
5-10 People	24	58,54
>10 People	4	9,76

Source: Processed Primary Data, 2025

Based on Table 2, it can be seen that the majority of respondents have a history of Kuro Fever of 73.17%, Belief in the disease is good at 53.66%, and HSB behavior of doing Self Treatment/Traditional Remedy is 56.10%.

Table 2. Characteristics of Belief in Disease, Health Seeking Behavior, and Demam Kuro

Variables and Categories	N	%
Demam Kuro/Malaria		
Yes	30	73,17
No	11	26,83
Belief in Disease		
Poor	19	46,34
Good	22	53,66
Health Seeking Behavior		
Self Treatment/Traditional Remedy	23	56,10
Treatment in Health Services	18	43,90

Source: Processed Primary Data, 2025

Bivariate analysis showed that belief in disease and HSB were related to kuro fever status with a p value <0.05. Belief in a less good disease had a 5.88 times higher risk of experiencing kuro fever and HSB had a 5.33 times higher risk of experiencing kuro fever (Table 3.). The next step was to conduct a multivariate analysis with logistic regression analysis. The following are the results of the best model for the analysis of the relationship

between belief in disease and HSB with the incidence of kuro fever in the Suku Anak Dalam of Jambi Province.

Table 3. Chi-square analysis

Variables and Categories			Demam Kuro				OR (95% CI)		P-Value
			Yes		No				
			n	%	n	%			
Belief in Disease									
Poor			17	89,47	2	10,53	5,88 (1,08-32,01)	0.031	
Good			13	59,09	9	40,91			
Health Seeking Behavior									
Self Treatment/Traditional Remedy			20	86,95	3	13,05	5,33 (1,15-24,59)	0.029	
Treatment in Health Services			10	55,55	8	44,45			

Source: Processed Primary Data, 2025

Before the multivariate logistic regression test, all independent variables were initially analyzed using bivariate analysis to identify those potentially associated with the incidence of kuro fever. Variables with a p-value ≤ 0.25 in the bivariate analysis were considered candidates for inclusion in the multivariate model (Hosmer & Lemeshow, 2013).

From the preliminary bivariate results, only belief in disease and health-seeking behavior (HSB) met the inclusion criteria ($p < 0.25$). Other sociodemographic variables such as age, gender, education, and occupation did not show significant associations and were therefore excluded from the final model to avoid overfitting, considering the small sample size ($n = 41$).

The multivariate logistic regression analysis showed that the HSB variable remained the most dominant factor associated with the incidence of kuro fever (malaria). Respondents who practiced self-treatment or traditional remedies had a 3.82 times higher risk of experiencing kuro fever than those who sought treatment in health facilities (aOR = 3.82; $p = 0.101$). This model explained 25.7% of the variation in the incidence of kuro fever (Nagelkerke $R^2 = 0.257$), while other factors may influence the remaining variation.

Table 4. Logistic Regression Analysis

Variables	B	aOR	95% CI		p
			Lower	Upper	
Belief in Disease	1,341	3,82	0,77	18,99	0,101
Health Seeking Behaviour	1,434	4,19	0,71	24,57	0,112
N observasi	41				
2 Log Likelihood	39,7				
Nagelkerke R2	25,70%				

Source: Processed Primary Data, 2025

Note: Only variables with $p \leq 0.25$ in bivariate analysis were included in the multivariate logistic regression model.

A. Belief in Disease

The results of interviews conducted on 6 people of the Anak Dalam tribe, including the Temenggung and his people or members of his group, we obtained various information about Kuro fever. Some consider Kuro fever to be a fever caused by food that is too sweet, fatigue, and some consider Kuro fever to be different from malaria. However, in the interviews we conducted, it turned out that respondents did not know exactly the difference between Kuro fever and malaria because when asked about the symptoms they felt, they answered with the same answer, namely shivering fever.

Table 5. Profile of Key Informants (Qualitative Study)

Informant Code	Gender	Age (Years)	Role/Status in Tribe	Main Residence
01	Male	55	Temenggung (Tribal Leader)	Bukit Suban
02	Female	42	Traditional healer (Dukun)	Bukit Suban
03	Male	37	Tribe member	Mentawak
04	Male	38	Temenggung (Tribal Leader)	Mentawak
05	Male	45	Traditional healer (Dukun)	Bukit Suban
06	Female	29	Tribe member	Mentawak

Source: Processed Primary Data, 2025

“Menggigil, menggigil samo dengan malaria” (02, Female, 42 years)

Most of the informants stated that kuro fever is caused by eating sweet fruits such as durian, langsung, rambutan, longan and other sweet fruits.

“ehh itu... kalau demam kuro, ah itu kadang kadang itu demam muncin, demam muncin seperti itu padek makan duren, duku, rambutan, kan itu apo demam” (03, Male, 37 years)

“iyoo kek makan duren, pada seperti makan rambutan, ehh apo kalo kalo diluar katonyo kelelengkeng, kalo kami kato kami tuh daro” (01, Male, 55 years)

Note: Daro is the name for longan fruit in the Suku Anak Dalam language.

“Kalo yang asin ndak, kalo makan manis (makan manis penyebabnya)” (05, Male, 45 years)

There are also informants who think that kuro fever is caused by fatigue as explained in the following quote:

“iyo iyoo, ado jugo penyebabnya memang, memang asal dari demam ado jugo dari pemakan yang menyebabkan demam jugo, kadang kadang capek banyak kejalan” (06, Female, 29 years) and there are also those who think that kuro fever is caused by witchcraft. *“kalo itu kadang kadang tuh ado, ado duku ado juga lewat mantra mantra biso” (04, Male, 38 years)*

Symptoms felt during black fever include high fever, chills and dizziness, as well as fluctuating body temperature which can occur for a week or more.

“nah, kadang kadang demam kuro itu kadang kadang idak terlalu sakit ndak, indak ado demam, misalnya seharini demam sekitar 2 jam 3 jam sudah tuh sehat” (02, Female, 42 years)

“hh itu, demam menggigil dengan pusing palaknya, ahh demamnya demam panas, panas tinggi” (05, Male, 45 years)

“ahem ahem, itu ngulang ngulang, ngulang ngulang” (05, Male, 45 years)

In the beliefs of the Anak Dalam tribe, they still believe in the existence of gods as protectors, healers and givers of life for them, so that many still believe in treatments carried out by shamans or temenggung who are given direct guidance by their gods through dreams.

“nah itu jugo ado dukun, tapi jugo ado mantra mentranyo”

P : nah itu tuh bagaimano ngung, ritual ritualnya

I : nah itu itu lewat mimpi...

I : iyo lewat mimpi, lewat mimpi memanggil dewok dewok, ah itulah caro kito berobat” (01, Male, 55 years)

Note: dewok or dewo is their god or deity

From the explanation above, it shows that the rituals they perform in treating kuro fever are only known by the temenggung or shaman who is given guidance by their gods through dreams.

B. Health Seeking Behaviour

Some of the settlements of the Anak Dalam tribe that we visited are places that have been touched by the outside world so that there has been a lot of community empowerment carried out in these places including health empowerment and health services carried out by the government and health workers. So that some of the Anak Dalam tribe people have received health services even though only once a month.

“kalau.. kalau disini tuh memang dulunyo ado, warsituh ado, tapi sebulan sekal” (02, Female, 42 years)

“yang tinggal disini yang, yang kemarin dulunya ado warsi tapi dak, dak biso nunggu lamo lamo dio, paling dalam satu bulan itu paling betah dio tuh seminggu” (02, Female, 42 years)

However, there are also those who choose to seek treatment outside (outside their settlements in the forest) such as the nearest health center or the nearest health worker. To access health services, they have to travel one hour from their place using a two-wheeled vehicle.

P : Kalo masyarakat sini pergi ke puskesmas mana ?

I : Paku Aji

P : Ooo Paku aji, kalo kesana berapa jam ?

I : 1 jam

P : Biaso kalo kesana jalan kaki atau ada kendaraan ?

I : Naik motor” (05, Male, 45 years)

The community or residents of the Anak Dalam tribe will seek treatment at the nearest health center or health service if they have tried traditional medicine first, according to the ritual discussed above. So when the fever has not yet healed, the sick person is taken out to be treated at the nearest health service.

One informant said that traditional medicine is given to sick people for up to three days, if they have not recovered, the person will be taken to a health service for treatment.

“itulah tadi yang ubat ubat tadi, nah ubat ubat tadi tuh misalnya 2 hari 3 hari kito kito ramu kita bikin ubat itu (Suara motor)apo demamkan atao dikasih minum atau diparut, agek kalu dak do sehat jugo ,ah baru kerumah sakit diperikso” (03, Male, 37 years)

“kalau tigo hari dk sehat jugo , ah baru kito kerumah sakit” (06, Female, 29 years)

However, there were informants who sought treatment at health services after one week of being sick, as in the following quote:

“dari mulai sakit pernah dengan sampe seminggu” (03, Male, 37 years)

“Iyo, mudah mudahan sehat. Kalo idak baru ke Paku Aji” (05, Male, 45 years)

Traditional medicines used in the treatment of kuro fever are varied, there are medicines that come from wood or leaves. In addition to the various ingredients, the way to use them is also varied, to the point that some require a special ritual in carrying out the treatment. The medicines used are medicines or plants obtained from the forest.

P : Oo obat dari dalam? Yang di cari di dalam hutan?

I : Iya dicari di dalam (di hutan)” (05, Male, 45 years)

The first medicine used in the treatment of kuro fever is pasak bumi. Pasak bumi is a traditional medicinal plant that is often found in forests in Indonesia, which is a medicinal plant with many benefits. In the Anak Dalam tribe, pasak bumi is used to reduce the heat of kuro fever by drinking the boiled water, or by forming the pasak bumi stem into a glass by pouring hot water into it, then waiting a few hours to drink the water, pasak bumi is drunk twice a day, namely morning and evening.

“pasak bumi tu, kito buat samo macam gelaih... lalu masukkan aek panas, lalu diminum aeknyo” (01, Male, 55 years)

“2 kali, pagi minum, putung minum” (01, Male, 55 years)

According to one informant, pasak bumi can be obtained deep in the forest by walking for 2 hours because two-wheeled or four-wheeled vehicles cannot access the road into the forest where pasak bumi grows.

P : Jadi dapatin pasak bumi tu dimano nduk?

I : Didalam

P : Didalam yo nduk? Jauh nduk?

I : Jauh

P : Berap kilometer nduk?

I : Ado 2 jam?

P : Jalan kaki?

I : Iyo jalan kaki, motor ndak bisa jalan” (02, Female, 42 years)

Another medicine used is the skin of the duku or langsung tree which is scraped and then burned with leaves and then wrapped around the stomach with cloth. However, this treatment is rarely done because to carry out treatment in this way there is a special ritual that must be carried out. One informant who is a temenggung or tribal chief or group leader told of several processes that must be carried out in this treatment, namely by carrying out a dream ritual. A temenggung will get a dream containing recommendations to use medicine by their god, in the dream the god teaches how the ritual process is carried out.

After the dream, the ritual will be carried out at the beginning of the day, namely before sunrise. "Before the flies fly" is a term used by the anak dalam tribe which means the sun has not yet risen. After the medicine from the duku is prepared, it will be attached to the stomach and opened at night.

I : nah jadi kulit nya itukan apo itu ah apo sisik apo mato pisau atau apo apo kito sisik lah kito tuh biso lembut ambek aponyo itu ngambek getah apo itu batang kulit batang

P : ohh di batangnya

I : ahem , nah jadi bawok pakai daun, pakai buat pedaun, dibungkui pakai daun baru di atas api

P : oh dipanaskan

I : nah itu baru ditempel baru kito ikat pakai kain (Suara motor)

P : nah itu pakainya berapa lama ngung diperutnya?

I : yoo kalau misalnya (suara motor) masang pakai sampe sore

P : ohh kek setengah hari , kalau kalau malam bukannya pagi?

I :oh kalau malam misalnya kita mandi kito buang bae”

“P : itu kalau ngambek itu tuh dapat dari mano ngung?

I : itu memang ado, ado ujian dari dukun itu melewati mimpi

*P : ohh, kalau yang, iyo batang batang pohonnya itu ngambek dimano ngung?
Sekitaran sini?*

*I : kan dio itu ado , kalau dio dalam tuh banyak pohonyo banyak, memang betanam
samo dengan didusun bae banyak batangnyo*

P :oh bearti kalau sakit ngambeknyo didalam la yo ngung?

I : aha ngambek didalam batangnyo” (02, Female, 42 years)

DISCUSSION

The results of this study indicate that most of the Anak Dalam tribe have a history of Kuro fever, mainly due to the environmental conditions where they live that support the spread of disease vectors. The tropical forests that are their habitat are areas with high humidity, stagnant water, and dense vegetation that are ideal for the breeding of Anopheles mosquitoes, the main vector of malaria (Arisco et al., 2020). In addition, limited access to modern health services and education on malaria prevention worsen the situation (Onyinyechi et al., 2023).

Indigenous people often rely more on traditional medicine and only access health facilities after conditions worsen (Oliver, 2013). Research shows that indigenous communities in remote areas tend to have a higher prevalence of malaria due to dependence on the natural environment and lack of adequate medical intervention (Meireles et al., 2020).

Based on this situation, it is exacerbated by the lack of knowledge of the Anak Dalam tribe, the community does not yet know exactly the factors causing transmission caused by mosquitoes (Moukénét et al., 2022). In the beliefs of the Anak Dalam tribe, they still believe in the existence of gods as protectors, healers and givers of life for them, so many still believe in treatments carried out by shamans or temenggung who are given direct guidance by their gods through dreams. There are also respondents who believe that kuro fever is caused by fatigue or a disease of being sent (mystical conditions), in line with the research of Moukenet et al. which states that there is still an interpretation of the cause of malaria with fate/mysticism (Moukénét et al., 2022). A similar situation is experienced by the Anak Dalam Tribe who still depend on the forest and local traditions in dealing with this disease, so that it requires more integrated cultural and medical-based interventions.

Health seeking behavior of indigenous peoples, including the Suku Anak Dalam, will perform self-treatment or seek treatment from traditional remedy if they are sick. Other studies have also occurred in other areas stating that indigenous peoples generally carry out traditional or informal treatment (Moukénét et al., 2022). The use of traditional medicine is usually high because it is more accepted from a spiritual and cultural perspective (Ferngren, 2016). Traditional medicine often reflects strong cultural beliefs, where illness is considered the result of certain foods, fatigue, or even witchcraft, as found in this study.

This is in line with studies that found that indigenous communities in remote areas generally rely more on shamans, herbal remedies, and traditional rituals as a first line of

defense in dealing with diseases including malaria (Nengnong et al., 2023). Considerations in the use of traditional medicine are also related to costs and insurance ownership (Pan et al., 2016). On the other hand, the use of self-medication and traditional methods can delay proper diagnosis and treatment, which ultimately worsens the patient's condition, especially in cases of malaria which can progress to severe if not treated promptly.

A study of malaria control and treatment related to the role of indigenous practices in Zimbabwe also revealed that indigenous people face challenges in accessing health services, so they prefer traditional medicine, although this is not always effective for diseases such as malaria (Makuvara et al., 2024). Therefore, culturally sensitive health interventions are important to improve health seeking behavior and reduce the prevalence of diseases such as malaria among indigenous people.

CONCLUSION

This study revealed that both health beliefs and health-seeking behavior significantly influence the incidence of kuro fever (malaria) among the Suku Anak Dalam community. Quantitative analysis showed that individuals with poor beliefs about disease causation and those who relied on self-treatment or traditional remedies had a higher likelihood of experiencing kuro fever.

Qualitative findings supported these results, showing that many informants believed kuro fever was caused by consuming sweet fruits or excessive physical activity rather than mosquito bites. Consequently, traditional healing rituals and herbal remedies were commonly chosen before seeking modern treatment.

The integration of both quantitative and qualitative findings highlights the strong role of cultural belief systems in shaping health-seeking behavior. Therefore, interventions to reduce the incidence of kuro fever must address these underlying beliefs through culturally sensitive health education. The involvement of community-based health workers and collaboration with traditional leaders are crucial strategies to bridge traditional and modern health practices effectively.

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