



The Health Status and Health Behaviour of the Conservation Forest Edge Community



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Abstract

It is not enough to solve health problems through medicine and health science disciplines alone; the role of another discipline, particularly the sociology of health, is an important contribution to solving health problems, particularly in changing people's health behaviors. This study aims to discover new information about the health status and health behavior of communities living on the outskirts of the forest. The descriptive qualitative approach is used in this study. Semi-structured interviews were used to collect data for this study, and 15 informants were chosen. According to the findings of this study, health status is moderate, healthy behavior is poorer, housing or cottage environment is still dirty, and waste and garbage are still scattered. Most diseases were caused by bad health behavior, which was aided by natural factors. Based on the findings of this study, we recommend that the edge forest community develop and improve its health literacy, including a health campaign promoting a clean and healthy lifestyle.

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1 Introduction

Indonesia is facing a major challenge, namely the triple burden health problem, which includes the persistence of infectious diseases, the rise of noncommunicable diseases (NCD), and the reappearance of diseases. This burden should have been eradicated. The most common diseases in health care are Acute Respiratory Infectious Diseases (ISPA), Tuberculosis, and Diarrhea. Furthermore, changes in people's lifestyles are one of the causes of shifts in disease patterns (epidemiological transition). Stroke, Coronary Heart Disease (CBC), Cancer, and Diabetes ranked first in 2015. Increasing NCD can reduce human resource productivity and even the quality of the nation's generation. This has an impact on the magnitude of the government's burden because dealing with NCD is expensive. Finally, health will have a significant impact on social and economic development (Nila, 2016). These health problems are not sufficient to be solved by medicine, but the role of society and the discipline of public health science has a role to play in solving health problems, particularly in changing people's behavior to live healthier lives. According to Soekidjo (2002), public health is the science and art of preventing disease, extending life, and improving health through community organizing efforts such as (1) improving environmental sanitation, (2) eradicating infectious diseases, (3) personal hygiene, (4) organizing medical services and care for early diagnosis and treatment, and (5) developing social engineering to ensure that every person meets the needs of life worthy of preservation.

One of Michael Lipton's criticisms of development presented in Suharjito (2015), is that urban bias in development causes inequality between cities and villages. In the village, there has even been marginalization or marginalization. Cities' businesses enter and extract natural resources in and around their communities (Permatasari et al., 2018). The vibrant development that occurred in the big cities was further explained. Small towns and sub-cities are also changing as a result of various development activities (McGuire et al., 2014; Vicente-Rodriguez et al., 2007). However, development programs, including health programs, continue to have a minor impact on villages located far from the city, particularly in forest edge villages. Concerning welfare, including health, article 1 (paragraph 2) of the Law of the Republic of Indonesia number 41 of 1999 on Forests states that forests are an ecosystem unit in the form of land spreads containing natural resources dominated by trees in the natural environment alliance, one with others inseparable. A production forest is a forest area whose primary function is to produce forest products (paragraph 7), and Article 23 states that the use of forests, as referred to in Article 21 letter b, aims to obtain optimal benefits for the welfare of the entire community lawfully while maintaining its sustainability (Permatasari et al., 2021).

According to the Central Statistics Agency of the Republic of Indonesia (2014), 21 percent of agricultural households are multi-dimensionally poor, as measured by their level of welfare, which includes income and expenditure, education, and household health (Korthagen et al., 2006; Chick et al., 2020). Meanwhile, 18% of the population is multidimensionally poor. This indicates that spending on education, health, and living standards has not been prioritized for households above

the poverty line. The proportion of households whose primary source of income comes from the multidimensional forestry sub-sector is 35.7 percent, the highest among all sub-sectors. Forest villages are typically located far from urban areas and have limited access to road infrastructure, lighting, clean water, health care, and education (Suharjito, 2015).

According to Soekidjo (2002), understanding health problems that are commonly found in Indonesia is divided into four categories: (1) environment, (2) behavior, (3) health services, and (4) heredity/genetics factors. Environmental issues are frequently the root cause of diseases, as evidenced by research in Demak Regency, Central Java. During the flood, as many as 15.2 percent of patients reported that flood water frequently entered their homes found 73.1 percent of patients stated that there was a puddle of water and many water ditches around their house, so found 87.5 percent of patients with leptospirosis state the gutter is used as a rat path (Kuswati et al., 2016). Almost all development programs, particularly health development, have advantages and disadvantages, which means that not all of them work by the intended plan, as some support but others do not (Pauley, 2004; De Figueiredo et al., 2004). One of the causes of failure in health development is that the development has not fully adapted to the various characteristics of a society, such as community behavior, which is frequently an impediment to health development programs. According to the findings of the study (Ekowarni, 2011), the most common reason for adolescents to use drugs is to try to taste drugs, while 31 percent use drugs to solve problems. The reason is that they are following the habits or behaviors of unhealthy adolescents, which is "many problems/thoughts" behavior using drugs to solve the problems that arise among adolescents.

Kuncoro's (2012) research on the workforce of PT Telkom Kandatel Yogyakarta yielded similar results, as do Salmawati et al. (2015). The implementation of the Occupational Safety and Health Management System (OSHMS) has a negligible relationship with work stress on nurses at General Hospital Anutapura Palu because the OSHMS used by the Occupational Safety and Health team at the hospital is still general, emphasizing the prevention of occupational diseases and accidents as well as actions or emergency response such as the creation of Occupational Safety and Health signs (Dunn & Hazzard, 2019; La Vonne & Zun, 2008). Low work stress can be caused in the health services at the hospital by nurses with the status of Civil Servants having a high sense of security, because the salary or wages received by nurses is monthly, so in the service to patients feel comfortable. Furthermore, genetic or hereditary problems are frequently associated with health issues because genetic factors influence a person's health status times more frequently According to the findings of Anjal (2004), and Maidelwita (2012), 70% of hereditary factor influences the incidence of obesity. Genetic factors influence the occurrence of obesity in primary school students in grades 4-6 at SBI Primary School Ujung Gurun Padang. This study is critical because there has been very little research on public health in forest-edge communities. Households with the multidimensional forestry sub-sector as their primary source of income reached 35.7 percent, the highest among all sub-sectors. Forest villages are typically located far from urban areas and have limited access to road infrastructure, lighting, clean water, health care, and education (Duan et al., 2020; Cho et al., 2008). Because there has not been much research on the health of the forest edge community, this research will add knowledge or contribute to the addition of literature on health in the forest edge community. Figure 1 depicts a research roadmap that researchers are aware of regarding the health of forest edge communities. This research aims to uncover a new model for addressing health issues, particularly in communities living on the outskirts of the forest. Find appropriate policies for policymakers to address health in suburban communities through specific health service models or strategies.

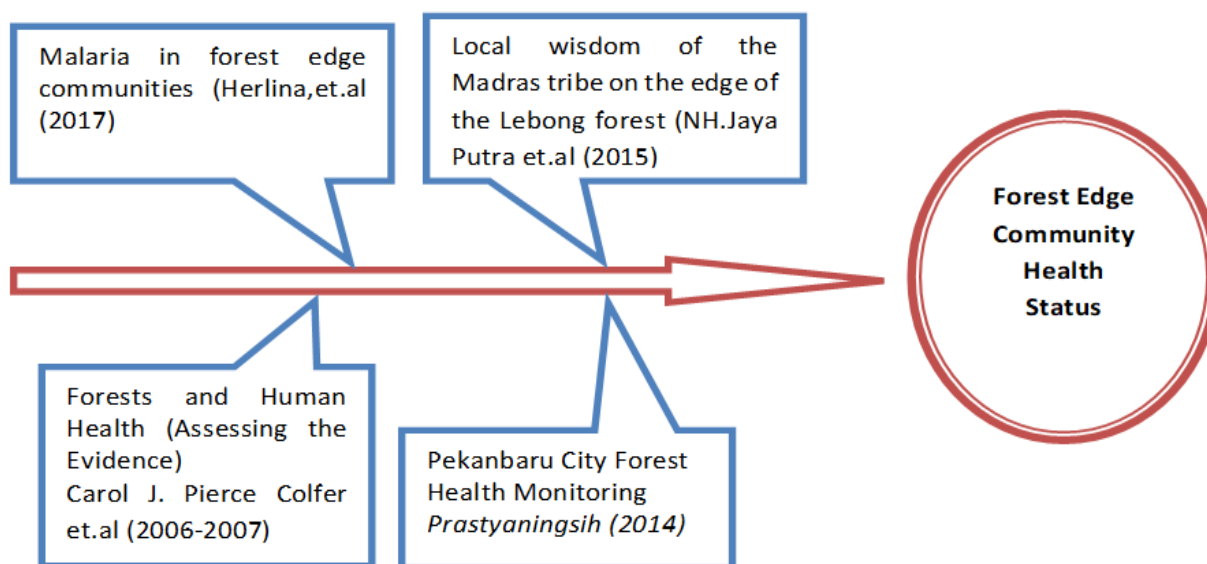


Figure 1. Research road map

2 Materials and Methods

The location of this study takes the area of community settlement that is domiciled in the three widest areas of the forest edge, namely the forest edge. (1) Bukit Daun Protected Forest, (2) Semidang Bukit Kabu Forest, and (3) Rindu Hati Forest. The representative village is the village closest to the three forest areas, namely the village. The regional description of the research location is presented in Table 1.

Table 1
Details Information of Forest Area in Central Bengkulu Regency, Indonesia

No	Forest Area Name	Area (ha)
1	CA Taba Penanjung I	1,70
2	CA Taba Penanjung II	2,04
3	TB Semidang Bukit Kabu	3.792,33
4	Tahura Rajolelo	1.161,90
5	Kel. Hutan Lindung Bukit Daun	18.427,66
6	HPT Rindu Hati	2.927,23
7	HP Rindu Hati I	191,30
8	HP Rindu Hati II	165,94
9	HP Semidang Bukit Kabu	660,50

(Ministry of Environment & Forestry Bengkulu Province, 2020)

This research employs a mixed-method approach (Miles & Huberman, 1992; Yusuf, 2016; & Neuman, 2017). For quantitative data, SPSS was used to analyze the social-demographic relationship with the health status of people living on the outskirts of the forest. Furthermore, flow model analysis qualitative analysis includes data collection, data reduction, data display, and inference/verification (Miles & Huberman, 1992). The informant in the study is a community living on the outskirts of a forest in Central Bengkulu Regency, Bengkulu Province.

Purposive sampling informants include (1) Domicile in the forest edge area for at least 5 years because this is considered long enough to know or inform health conditions in the forest edge area; (2) Can communicate fluently in the local language; and (3) Willing to give honest testimony on matters related to the theme of the research. The informant's sufficiency is determined if he already feels saturated or if there is no longer a prominent variation of the answer. In this study, the purposive sample included 10% of each village on the edge of the Semidang Bukit Kabu TB forest, totalling 15 respondents, the Bukit Daun Protected Forest Edge with 17 respondents, and the HPT Rindu Hati Edge with 23 respondents, totalling 55 respondents. Each representative from the forest edge of Bukit Kabu 6 informants, forest edge of Bukit Daun 4 informants, and forest edge Rindu Hati 5 informants were used from the number of research informants used for the qualitative design that meets the criteria that have been set, a total of 15 informants (because that number of questions has been saturated).

3 Results and Discussions

This study lasted four months, from July to October 2018, at three community locations on the outskirts of the forest (Bukit Daun, Rindu Hati Forest, and Semidang Bukit Kabu forest). The three forests are dominant in three village locations, namely Rindu Hati Village, Tanjung Heran Village, and Pagar Gunung Village, which are located in two subdistricts, Taba Penanjung Subdistrict and Semidang Lagan Subdistrict in Central Bengkulu Regency. The outcomes of data processing used two approaches, qualitatively to 15 informants and quantitatively to 55 respondents.

3.1 Characteristics of the social demographics

The results of a survey of 55 respondents (KK on the outskirts of Semidang, Bukit Kabu/Bukit Kucing, Bukit Daun, and Rindu Hati) revealed the following information:

1) Respondents' age and educational status

Table 2 shows that the highest percentage of respondents who live on the forest's edge is 36-45 years old (36%) and the lowest percentage is 56-65 years old (13%). Furthermore, junior high school education has the highest percentage of education (38%) and only 4% have never attended school. In general, the heads of families living on the outskirts of the forest are of productive age, but their highest level of education is at the junior high school level. Also found are those with a bachelor's degree (11%), who live on the outskirts of the forest due to land inherited from their parents and continue gardening their parents' coffee in Figure 3. (b).

2) Condition of respondents based on the number of children and region of origin

More than half of families on the forest's edge (51 percent) have more than 5 children. Most areas are 56 percent from Central Bengkulu Regency and 44 percent from outside the Fortress, including Lubuk Linggau, South Bengkulu, Curup, Lahat, and Kepahyang. Table 2 contains additional information.

3) Garden lands in extensive conditions and plant types

Table 2 shows that the majority of residents, 76 percent, only have 0.5 to 2 hectares of farmland, which is the mainstay of family income on the forest's edge. This condition has demonstrated that the size of farmland owned affects income. According to Senoaji (2011), public income is heavily reliant on the price of coffee, which fluctuates wildly. If the cost of coffee is less than IDR. 6,000 people live in a society that is below the poverty line. Not dissimilar to the findings of this study, the average family income from the coffee harvest is sold at IDR.6500 to IDR.7500 per kg, indicating a poor category. The majority of the 75 percent of families who live on the forest's edge cultivate coffee and gardening in addition to coffee and rubber. This condition was discovered in coffee land and plant types in gardens with an average area of land owned between 0.5 ha-2 ha and found to have the status of 25 percent working farmers. Poverty reduction should be a top priority for the government. It is important to be concerned because, according to the Central Statistics Agency (BPS), the number of poor people in Indonesia currently stands at 26.58 million (10.12 percent). The focus among those living on the forest's edge is on avoiding stunting (Short News) as a result of poverty that is not met with good family nutrition (Brojonegoro, 2018). Critical forest

edge land needs to be rehabilitated because the community wants sustainable agroforestry programs to be implemented, even though this has not been felt in real terms in socioeconomic terms. From the standpoint of benefits, 50% of respondents believe that the agroforestry development program will increase income for people living on the forest's edge (Suparwaka, 2018). Table 2 shows that the respondent's family's longevity in the forest edge area ranges from 6 to more than 10 years (58 percent), and life is still categorized as poor, as evidenced by the housing condo where the residence is still not categorized as habitable.

3.2 Characteristics of social conditions

To analyze in more depth the life of the community or family that is on the edge of the forest, then of the 55 Respondents above are taken who meet the requirements criteria (sample intended) as much as informal consists of origin from the forest edge of Bukit Kabu (Bukit Kucing) 6 informants, 4 informants in Bukit Daun and 5 informants from the edge of the forest "Rindu Hati". The results are shown in Table 2.

Table 2
Respondent characteristics and social conditions

No	Initial	Age	Education	N.of Child	Origin zone	Land area	Plant type	Stay duration
1	ZR	38	Secondary High School	2	Rindu Hati	1.5	Coffee	38
2	NS	50	No Education	3	Wonogiri	1.5	Coffee	27
3	WT	60	No Education	12	Pati	5	Coffee	32
4	MY	37	Primary School	3	Rindu Hati	Q	Coffee & Rubber	37
5	SPD	36	Secondary High School	2	Rindu Hati	0.5	Coffee	36
6	APZ	37	Junior High School	3	Rindu Hati	3	Coffee & Rubber	37
7	JK	47	Secondary High School	7	Taba Penanjung	1	Coffee	6
8	IA	35	Primary School	2	Kelindang	1	Coffee	5
9	SMD	43	Primary School	3	Merasi Lb. Linggau	2	Coffee	6
10	HF	40	Secondary High School	3	Kepahiang	2	Palm & Rubber	25
11	AS	35	Bachelor	1	Kepahiang	2	Coffee & Rubber	12
12	HWT	48	Primary School	4	Alas Maras B/S	2	Palm & Rubber	31
13	SFN	60	Primary School	4	Semidang Bukit Kabu	2	Coffee	6
14	HRN	32	Bachelor	3	Solo	3	Coffee & Rubber	5
15	KJB	25	Primary School	2	Tengah Padang Tl. Empat	1	Coffee	7

According to the data in Table 2, the majority of the informants are between the ages of 25 and 40, the rest are between the ages of 47 and above, some are junior high school students, some are retired, and only a small percentage are high school and undergraduate students. The average number of children is three, the majority of the livelihood is coffee farming, most have farmland of 0.5 to 2 hectares, are located in Central Bengkulu, and have lived on the forest edge for at least 38 years.

3.3 The health of the conservation forest edge community

Environment of Settlement

Based on observations and in-depth interviews with 15 informal respondents, it was discovered that the house was clean or less clean, with nearly 7 with clean conditions, 6 declared less clean, and 2 informants whose living environment was dirty. MY (Wife, 37 years old, SD), according to MY... *Sorry, mom, my house is a shambles; I didn't have time to clean it because I assisted my husband in the garden, weeded the coffee garden, and found firewood before returning home exhausted.*

Sources of Potable Water

The water source used by the informants on the forest's edge is generally sourced from wells, with only a small portion of the springs coming from the mountains. The condition of the water source used in the clear condition is 9 informants, and the dirty and dirty condition is 6 informants. Dirty water conditions are discovered using mineral wells less than 2 meters deep and water sources from below so that if the rainy day is cloudy and the dry season is dry or with a little water, the water is clean.

"Alhamdulillah, if our water here comes from mountain springs and is clear and clean, it's just a bath like that..."
(HRN, 32 years, Bachelor's degree)

Conditions for Household Waste Disposal

Table 2 shows family household waste disposal at the edge of the forest, which is still a concern because most do not have a household waste disposal site. As many as ten informants, waste from the house flowed indiscriminately, causing the smell and environment of the house to be dirty. Only a few informants (5 houses) have a waste disposal channel.

Kitchen Appliance Hygiene

The cleanliness of the informant's kitchen environment with the criteria of clean and tidy 4 informants, clean but neat 7, and dirty and messy 4 informants, it can be interpreted that most of the informant's kitchen environment is clean but not neatly arranged.

Environmental Hygiene in the Village

Families living on the outskirts of the Forest are generally clean but disorganized, found the majority (9) housing, and 6 housing is still their residential environment or dirty villages.

Place of Environmental Hygiene General Facilities

According to observations, public facilities such as schools, mosques, markets (public places), and health centers are generally very clean because guards are present. Only a small portion of the mashallah concession has water, and the week (circle market) is littered with garbage, with no circle market cleaner.

3.4 Family healthy behavior on the edge of the forest

a. Disease Prevention

No.	Statements	Percentage (%)
1	Lots of rest, exercise, and regular eating	40.0
2	Don't think too much and don't have too much debt	26.6
3	Do not take a shower, don't drink ice, don't eat sour	33.3

Children often have a cough, a cold, because they drink a lot of ice, and play a lot, if their parents often have a headache because sorry mom, small income, so a lot of debt, less rest looking for money (SFN, SD, 60 years old)

b. Breastfeeding Behavior

No.	Statements	Percentage (%)
1	Providing Complete Immunization to Infants and Toddlers	33.3
2	Incomplete in infants and toddlers	46.7
3	Never immunized babies and toddlers	20.0

The people at home did not have time to immunize the child, because the place is far from the Puskesmas, and all our 3 children were not immunized, the mother looked healthy and fat thank God she never got the most cough, cold, bought medicine at the store (SMD, 43 years old, SD).

c. Diseases often suffered by family members

No.	Statements	Percentage (%)
1	Malaria, typhoid, and fever	44.0
2	Rheumatism, Maag pain	8.0
3	High blood pressure, dizziness, eyes are often yellowish/short-sighted	23.0
4	Itching, toothache, cough, and diarrhea	25.0

d. Medication Seeking Behavior

No.	Statements	Percentage (%)
1	Buy medicine at Warung	41.0
2	Treat at Puskesmas	9.0
3	Treating Midwives / Health Nurses	34.0
4	Treat the shaman	13.0
5	Get medical attention	3.0

If we are sick, we often buy medicine at the stall, but it does not heal, we also feel dizzy and the fever continues to mean that we go to the shaman. After being treated by a shaman ... usually healed (WT, no school, 60 years).

e. The behavior of Use of Contraceptives

No.	Statements	Percentage (%)
1	Using injections	53.0
2	Using Pills	13.0
3	Using Implants	13.0
4	Use sterile	13.0
5	Do not use any contraceptives	7.0

f. Behavior asking for help during childbirth

No.	Statements	Percentage (%)
1	Village midwife assistance	29.6
2	The help of Midwives and Shamans of Childbirth	29.6
3	Hospital doctor assistance	7.4
4	Help Shaman Giving Birth	33.4

According to (HRN, 31, Bachelor), *residents here really want to give birth with the help of the midwife but often do not have the money up to Rp 500,000, so they also had to ask for help from a midwife to give birth (give birth) but check her health to the midwife.*

g. Spice Menu Preparation Behavior

No.	Statements	Percentage (%)
1	Fish	30.95
2	Chicken Fish	7.14
3	Tofu Tempe	14.29
4	Eggs	14.29
5	Teri Fish	26.19
6	Salted Fish	7.14

Zr, 38, Alumnae Senior High School said *"We here rarely eat chicken side dishes, which often eat fish or anchovies, eggs, because they are easy to find and the price is cheap, for us it is important to have sambal and shoots, it which citizens often do.*

h. Vegetable Menu Preparation Behavior

No.	Statements	Percentage (%)
1	Long Beans and Cucumbers	13.79
2	Spinach and cabbage	20.69
3	Mustard and Eggplant	31.03
4	Cassava leaves, yams, lumai	12.07
5	Oyong dan spinach	10.34
6	Beans, ferns, and tauge	12.07

i. Fruit Eating Behavior

No.	Statements	Percentage (%)
1	Banana	37.93
2	Papaya	31.03
3	Watermelon	13.79
4	Orange	6.90
5	Soursop	6.90
6	Apple	3.45

Sorry mom we are in this village ..rarely eat fruit, eat bananas the most, even if bananas bear fruit, we often sell them to the town (circle market) to buy other kitchen necessities such as rice or sugar and coffee (IA, 35 years, elementary school)

The family is the smallest unit in forming healthy living behavior. Therefore, promotion efforts toward families are the main factor in improving the health status of the community. Aspects of family health include a healthy diet that refers to the application of the principle of balanced diet practices including, immunization and health status, namely efforts to maintain family health to avoid infectious diseases (diarrhea, ARI, tuberculosis, and other infectious diseases), reproductive health, sanitation, and environmental health. All of these aspects are generally associated with the socioeconomic level of the family (Michaelson et al., 2021). One of the important elements in family health is the health of mothers and children, where the fulfilment of food intake and body immunity formed in the first 1000 days of life determines health status in the next period of life. The main keys to success in this period include the fulfilment of nutrition in the period of pregnancy and lactation, the provision of complementary foods to breast milk, and the provision of complete immunization in the first two years of the baby's life. (Permatasari et al., 2016).

The study conducted by Jackson et al. in 2015 shows that the family-home environment influences behavior related to food intake patterns that have an impact on the occurrence of various nutritional problems such as obesity. The study also reported that a healthy diet, high in vegetables and fruit, high in milk consumption, and low in sugar intake, was associated with better family health status than an unhealthy diet (Jackson et al., 2015). In line with another study that showed that the health and mental status of children and adolescents is determined by eating patterns and parenting patterns that have been formed since childhood. Children who are accustomed to consuming fruits and vegetables with a higher frequency, have a more frequent consumption of main meals and receive good parenting have normal nutritional status and tend to have low depression scores compared to children who have a high frequency of consumption of vegetables and fruit low, have a lower frequency of main meals, and receive poor parenting. Food parenting practices are considered to play a key role in shaping children's eating patterns and are associated with family eating habits. The main aspects of family feeding include monitoring, pressure to eat, restriction, and skipping behavior and family meal frequency significantly plays a role in shaping eating habits that continue into adulthood (Mou et al., 2021). Family eating behavior is also a factor in preventing the occurrence of eating disorders, alcohol use, violent behavior, and feelings of depression in adolescents. Thus, family diet is an important factor that cannot be ignored in determining family health status (Harrison et al., 2015).

In addition, the aspect of health services is another important factor that contributes to health status. However, this is a limitation that is still faced by communities living on the edge of the forest. One of the efforts to prevent exposure to various infectious diseases is by giving immunizations. This effort can prevent morbidity and mortality caused by infectious diseases. Vaccination in conjunction with sanitation and clean drinking water is a globally proven public health intervention. In addition, medical efforts in treating diseases experienced by the community, including people living on the edge of the forest, are another important factor needed to maintain their health status (Rodrigues & Plotkin, 2020).

4 Conclusion

From the description of the results of the research that has been discussed above, then this research on the health status of the people at the edge of the forest can be concluded that the behavior of public health, housing, or cottage environment is still dirty, and waste and garbage are still scattered. The source of clean water is good, that is, clear from the mountain springs. The kitchen and utensils are mostly still dirty and messy. The healthy behavior of most diseases is caused by natural factors such as rain and drinking ice and eating foods that taste sour makes people sick. Most toddlers are not fully immunized. The most common diseases are malaria, typhoid, and fever. Treat most people buying installs. Still found giving birth asking for help shaman give birth. The most commonly consumed side dishes and fruits are fish, anchovies, and bananas as well as papaya, eggplant, and mustard. Based on research findings, this study recommends to related agencies such as the Ministry of Health, BPJS offices, Trade and Industry Office, and Plantation services should be more focused on assisting, due to the consistent health status of the forest edge community, in dire need of free treatment, agricultural land development, and health extension. Second, should be more focused on assisting, due to the consistent health status of the forest edge community, in dire need of free treatment, agricultural land development, and health extension.

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