

# How anthropological approach address social determinants of health in Asmat, Papua

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**ABSTRACT** Indonesia faced one of the most tragic and challenging health problems at the beginning of 2018, many children in Papua's Asmat Regency were suffering from malnutrition and measles. More than a thousand children were treated while 78 children under five years of age have died, mostly indigenous children. Asmat Regency is located in Indonesia's easternmost province with poor infrastructure and communication networks, also high transportation costs due to swampy regions criss-crossed by rivers, hard-to-reach from the center to the districts. Asmat's belief in their ancestors has formed their way of life and shaped their behavior, choices, and attitudes towards health issues, such as poor awareness regarding the fulfillment of daily nutritional intake, which is potentially harmful. Curative care is the highest priority in an extraordinary incident such as an outbreak or a mass-casualty disaster. However, establishment of the cultural hegemony of biomedicine will not be achieved overnight. Changing people's health behavior is a significant challenge. To maintain health sustainability, we must reach the entire community, including rural and remote areas, and work together with local indigenous stakeholders to bridge the gaps in sociocultural understanding. Resources that enhance the quality of life can have a significant influence on population health outcomes. By applying what we know about the Social Determinants of Health (SDH), we may not only improve population health but also advance health equity. The author offers a participant observation, discussing the social determinants based on self-experience living in an indigenous community in Asmat. This article aims to provide an overview of SDH in Asmat through the approach of medical anthropology, as the SDH may potentially have roles in health outbreaks, especially in the case of malnutrition and measles in early 2018.

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## 1. Introduction

Medical anthropology has been defined as the study of health, illness, and healing through time and across cultural settings.<sup>1-3</sup> Through medical anthropology, we may assess social, economic, and political factors that influence people's health using the linguistic skills and cultural awareness, to gain the trust of indigenous people and to communicate across disciplinary boundaries.<sup>4-6</sup> These factors may impact poverty and education. Poverty limits access to healthy foods and safe neighborhoods, and a higher education level is a significant predictor of

better health.<sup>7,8</sup>

This article is based on ethnographic materials generated before the outbreak in Asmat, Papua, in early 2018. The purpose of this article is to provide an overview of the Social Determinants of Health (SDH) in Asmat through the approach of medical anthropology, as the SDH may potentially have roles in health outbreaks. Health in a society is not only based on curative care, but also integrated promotive and preventive efforts that can reach all members of the community, including rural and remote areas, to maintain health sustainability. An anthropological approach has much to offer as a basis for interventions to understand human behavior and is expected to identify sociocultural factors that may hinder the success of public health programs.<sup>9,10</sup>

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## 2. Method

The author offers a participant observation, discussing the social determinants based on self-experience living in an indigenous community in Asmat. The author participated in a full-time medical mission in Asmat (2011-2013) and put the living experiences into a semi-ethnographic writing, first published in 2016 as a book entitled 'Visit The Land of Cendrawasih: *Catatan Seorang Dokter Misioner*' - a missionary doctor's writing. This article also provided two cases of interviews. Oral informed consent was obtained for the interviews, as well as for ethnographic observations and participation.

When the outbreak happened in early 2018, the author tried to identify various aspects as triggers. Objective data was collected from reputable media sources and qualified search engines. The author also collected the outbreak data from Asmat's Department of Health (*Dinas Kesehatan*).

## 3. Result

### 3.1 Asmat and Its Complexity

Asmat Regency is located in Indonesia's easternmost province which encompasses a total area of 31,983.60 km<sup>2</sup>, with Agats as the regency's capital. Agats can be reached by a 60-minute commuter flight from Timika and Merauke, or by 8 to 10-hour passengers ship service to these cities. Asmat is divided into 23 administrative districts, whereas the distance between Agats and the nearest district (Akat) is 37 km, and the distance to the furthest district (Kolf Braza) is 263 km. The transportation cost is relatively high due to the swampy regions criss-crossed by rivers that are hard-to-reach from the center to the districts. This swamp also makes it difficult for people to grow plants and to get the natural spring water source. Electricity is limited, therefore indigenous people who live in traditional houses do not use it for their night activities. Communication is also limited, mobile phones networks are only available in a few districts.<sup>11,12</sup>

Since missionaries arrived in Asmat at the beginning of the 20<sup>th</sup> century (Figure 1), nomadic culture has become a trademark way of life for more than a hundred years. The Asmat people live

on sago starch extracted from palms and fish from rivers or seas. They may spend months in the forest with their family, making non-permanent residences, to make sago and find another food source to live on. When sago stock runs out, they will look further, going deeper into the forest. However, in recent years, with an increasing number of migrants from other Indonesian islands, Asmat's diets have slowly changed. Migrants come to trade and bring other foods such as vegetables, fruits, and meat from the outside world by ship every few weeks. They also bring instant processed foods that are increasingly popular compared to traditional ones. Asmat people are introduced to the concept of money to buy basic needs. Frequently, they sell government-funded equipments, such as mosquito nets for malaria prevention and water storage tanks for clean water supply. It is unfortunate since malaria is highly prevalent and the storage tanks may help collect rainwater to help solve water scarcity problem, because a natural spring water source is not available in Asmat's swampy region.<sup>13</sup>

Asmat government has striven to ensure that the younger generation in Asmat can get an education up to high school level, to improve their standard of living in the future, including changes in their mindset and perception of healthy living.<sup>14</sup> Asmat people adhere to the patriarchal culture that 'denotes a structural system of male domination' and 'control by men of a disproportionately large share of power'.<sup>15</sup> In reality, men do not always provide a living for the family, so women must be able to take care of their children and simultaneously try to make a living for themselves, such as looking for sago in the forest (sometimes while carrying their children with them). It can become an abundant and disturbing psychological burden.<sup>14,16</sup> Patriarchy is the main obstacle to the progress and development of women and must be replaced by a system where equal and non-violent human rights are promoted and accepted, as equal human dignity is a human right.<sup>17,18</sup>

Health problems in remote areas have always needed a cross-sectoral intervention. It is well known that the community health is determined by factors not only in the health sector but also in external ones.<sup>19</sup> Asmat Regency has a government



**Figure 1.** Health Service by a Missionary Priest in the Mid of 20<sup>th</sup> Century  
Source: The Asmat Museum of Culture and Progress, Agats

hospital in Agats and a total of 16 health centers in several districts. Not all districts have health workers, so health workers have a schedule of regular visits every month to some isolated areas. This poses a challenge because people often go food-hunting for a long period of time (several days or months), so that community gathering events to receive health services is also limited and not attended by all families. It is not uncommon for health problems to be considered trivial by the community and may have a catastrophic impact later on. The late detection of disease and prolonged referral interval to adequate health facilities will also cause serious problems.<sup>20</sup>

### **3.2 January 2018: Health Problems in Asmat**

In early 2018, many children in Asmat were suffering from malnutrition and measles. According to data collected from Asmat's Department of Health (*Dinas Kesehatan*), there were 522 children with malnutrition and 651 children with measles during this outbreak (Table 1).<sup>20</sup> As many as 150 and 98 children with malnutrition and measles, respectively, were referred to and hospitalized in Agats government hospital (Table 2). Unfortunately, among them, nine children with malnutrition and three children with measles died. The number of patients

referred to Agats was less than the total number of sufferers reported. Asmat government and religious parties worked hard in facilitating patients who were treated at the hospital, going as far as covering their accommodation fee during the treatment and transportation costs.<sup>21</sup>

In extraordinary incidents such as an outbreak or mass casualty disaster, curative care is the highest priority. However, to avoid the same thing happening again in the future, we must work systematically to prevent the disease.<sup>6</sup> Child growth is recognized internationally as an essential indicator of nutritional status and health in the population.<sup>22</sup> The outbreak in Asmat might have been prevented if health workers paid particular attention to children under five years of age from the beginning, such as early initiation of breastfeeding.

Case 1, a 28-year-old mother called Bibiana. Bibiana came to the private health center in one of the districts to deliver her second baby. She never had any antenatal care throughout her pregnancy due to her tiring activity going into the forest for months to find sago and fish. Sister Basilla, a midwife-nun, helped Bibiana deliver her baby promptly and successfully. Afterwards, she put the newborn baby on Bibiana's chest to initiate breastfeeding. However,

**Table 1.** Case detection, September 2017 – April 2018

No.	Districts	Malnutrition	Measles	Total
1.	Agats	2	0	2
2.	Atsj	87	0	87
3.	Sawaerma	28	1	29
4.	Akat	36	68	104
5.	Fayit	41	69	110
6.	Pantai Kasuari	29	63	92
7.	Suator	11	1	12
8.	Suru-Suru	62	22	84
9.	Kolf Braza	2	0	2
10.	Unirsirau	25	0	25
11.	Joerat	2	0	2
12.	Pulau Tiga	20	123	143
13.	Jetsy	0	73	73
14.	Der Koumur	30	26	56
15.	Kopay	24	0	24
16.	Safan	17	0	17
17.	Sirets	11	101	112
18.	Ayip	4	6	10
19.	Betcbamu	17	4	21
20.	Joutu	8	0	8
21.	Auyu	17	20	37
22.	Aswy	49	74	123
23.	Koroway	0	0	0
TOTAL		522	651	1173

**Table 2.** Child death data, September 2017 – April 2018

	Malnutrition	Measles	Total
23 districts (16 health centers)	3	63	66
Agats government hospital	9	3	12
TOTAL	12	66	78

Bibiana refused, “I do not want to see my baby’s face, the ancestors’ spirits would take care of my baby at this time. I will breastfeed whenever I am ready.” Her family also brought instant formula milk for this newborn baby. After only a few hours in the health center, her family brought Bibiana and her baby home.

Breastfeeding is still not routinely done by many indigenous mothers because of the belief that their ancestor spirits will take care of the newborn baby.<sup>14</sup> Breastfeeding has many health benefits for both the mother and the baby, because breast milk contains all the nutrients that babies need in the first six months of life, protects against diarrhea and diseases in children, and gives long-term health benefits. Breastfeeding is the best source of nutrition

for most babies, markedly reduce the risk of some short and long-term health conditions for babies and mothers.<sup>23–25</sup>

Another problem in this outbreak in Asmat is measles infection. Seven million people in the world were infected by measles in 2016, but global measles deaths have decreased by 84% worldwide.<sup>26</sup> Measles is an acute viral infection that is highly contagious but can be prevented by vaccines.<sup>27,28</sup> However, the vaccination program must cover all areas including isolated ones, while keeping maintaining quality of the vaccines, especially regarding the cold chain storage.

In such remote areas, it is an urgent challenge to provide quality control for vaccines due to lack of electricity. However, there are many ways to keep the vaccines cold, such as using a solar-powered cold storage unit. Another challenge is gathering the local people for vaccinations. They often go for a trip to look for food, going deep into the forest for a long time, while taking their children with them. Other difficulties also occur in the case of non-continuous formal reporting in the past two years causing an outbreak.<sup>29</sup>

Case II, a 35-year-old father called Agustinus. Agustinus brought his 9-month-old baby to the private health center, with a chief complaint of diarrhea. After examining him, the doctor then prescribed some medicine, including 5 tablets of zinc which should be consumed once daily. The next day, Agustinus came back to the health center and asked for additional medication for his baby, because he only got 2 zinc tablets left. The health officers asked him how many zinc tablets he gave to his baby. Agustinus replied, “I asked the mother to also consume the tablets, so that the baby can get additional medications from breast milk. That is why I come back here for more medication.”

The case of Mr. Agustinus above reflected a health problem in Asmat that occurs due to lack of knowledge. He did not give the medicine as directed by the doctor because he was sure of his mindset. This ignorance often happens in Asmat indigenous people, which results in “creatively” misguided therapy.

## 4. Discussion

Malnutrition and measles in Asmat are two diseases that have caused an outbreak in Asmat, in 2018. Asmat's belief in their ancestors has formed their way of life and shaped their behavior, choices, and attitudes towards health issues. For example, they tend to have a lack of awareness regarding the fulfillment of daily nutritional intake, which in turn may lower their immune systems. Lack of clean water and poor sanitation can also cause skin diseases and digestive disorders such as diarrhea that may need special attention.

Asmat is an endemic area of malaria. The prevalence of malaria cases in Asmat district in 2017 was 12.4%, an increase compared to the previous year. This shows that reducing the incidence of malaria is still a big challenge for health workers and the government. The Sustainable Development Goals stipulate malaria to be one of the diseases that can be eliminated in 2030, in addition to AIDS and tuberculosis, and neglected tropical diseases.<sup>11</sup>

Asmat local communities still need a lot of guidance to understand a healthy lifestyle. The government has distributed healthy food procurement as part of health promotion. But sometimes this additional food for children is consumed by their parents. Frequently, medicine and vitamins for children are taken by the mothers. To understand the social phenomena that can affect the health of a society, anthropologists may conduct participant observation to understand problems in an area and see the potential for health prevention. Cross-sectoral collaboration is needed to achieve health sustainability.<sup>6,16</sup>

## 5. Conclusion

The outbreak in Asmat is not a case that occurs suddenly but requires a long process to develop in an inappropriate direction. It can often be overlooked, even the indigenous people themselves do not consider it as a problem. Although we have good intentions, without a systematic approach incorporating culture of the community, it is not easy to deal with them and teach healthy living. Addressing health problems in rural areas is not a short-term program but requires sustained cooperation from

various parties to complement and maintain better health status.

Resources that enhance the quality of life can have a significant influence on population health outcomes. By applying what we know about SDH, we may not only improve population health but also advance health equity. Governmental social policies have a direct impact on SDH. Collaboration between public and private sectors can improve health programs' sustainability, such as the quality of nutritional care, environmental health, health promotion, disease management, maternal and child health, health infrastructure, and disaster management.

Indonesia consists of various cultures. Handling a sustainable health care should be closer to the culture of the local community. Social sciences, medical anthropology in particular, may promote multi-disciplinary collaborations to provide facts and trends that can be used in meeting future needs. This also requires the establishment of institutions to anticipate problems rather than waiting for problems to occur and then try to make adjustments.

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## Conflict of interests

None.

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