Perspectives of Hill Tribe People and Healthcare Providers regarding Emergency Medical Conditions and Interfacility Transfer: A Qualitative Study in Rural Northern Thailand

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Abstract: Interfacility transfers of patients in rural mountain areas have many issues that require further investigation; for example, lack of resources and the inability to provide appropriate treatments for a patient's conditions are the reasons for interfacility transfer. A qualitative descriptive study was conducted to explore the experience of hill tribe people (n = 16) and healthcare providers (n = 22) regarding emergency medical conditions and interfacility transfer in rural mountain areas of northern Thailand. Data were collected from February to July 2019 via in-depth interviews. All interviews were transcribed verbatim, and the content analysis procedure of Elo and Kyngäs was used for data analysis. The study's trustworthiness was established using Lincoln and Guba's criteria.

The finding revealed four categories reflecting hill tribe people's experience of emergency medical conditions and interfacility transfer: 1) perceived barriers to rapid access, 2) helping hands, 3) the polarity of interfacility transfer services, and 4) ways toward a bright future. The healthcare providers' experience was divided into three categories consisting of 1) the district system of interfacility transfer, 2) making it work: the three sources of power, and 3) hope for better interfacility transfer.

These findings may contribute to a better comprehension of the nurses and healthcare providers who actively provide interfacility transfer support for emergency medical conditions suitable for hill tribe populations and healthcare settings.

Keywords: Hill tribes; Emergency medical conditions; Rural area; Interfacility transfer; Healthcare providers; Thailand

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Introduction

Emergency medical conditions (EMCs) require immediate medical attention, such as chest discomfort and severe pain from an unclear source. They may occur at any time and anywhere.[1] EMCs include, but are not limited to, accidental injuries, acute diseases, and chronic diseases[1-2] and were the cause of 50.9% of deaths and 42% of all disability-adjusted life years globally in 2015.[3] Thus, it is essential to provide patients with

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the appropriate treatment at the appropriate place to reduce the risk of death.[1] With this, accessible and effective patient transfer between hospitals or interfacility transfer (IFT) is essential to reduce mortality and morbidity,[4-5] for all people in need.

The IFT guidelines for serious illnesses in Thailand were launched in 2014 by the National Institute for Emergency Medicine.[6] The advantage of the guidelines is that the details of EMC management and IFT are clearly stated; however, implementation of the guidelines may not be successful due to the obstacles of the context in rural mountain areas.

Ideally, equity for all races and hill communities is the moral foundation for high-quality health care. In reality, the health disparities of these hill communities exist. Previous Thai studies revealed that the provision of healthcare services for these hill tribe people is inferior to that of other social groups.[7-12] Poverty appears to be a significant barrier to care access in communities with fewer healthcare providers and hospitals. Most hill tribe people live in poverty and have poorer access to healthcare.[10,13] In addition, some hill tribe people do not have national citizenship, which is required to access public healthcare services and be eligible for the Thai Universal Coverage Scheme.[11,14] This causes many of them to have limited access to healthcare services.

Some studies have focused on the barriers to accessing emergency medical services of hill tribe people,[12] the association between race/ethnicity and IFT,[15] and the opinion of health providers about IFT in rural areas.[5] Understanding how hill tribe people and healthcare providers (HCPs) viewed the current EMCs and IFT is necessary for developing context-specific IFT for them. However, research exploring what hill tribe people and healthcare providers have experienced regarding EMCs and IFT is lacking.

Review of Literature

An EMC is a state where a person experiences sudden and severe symptoms, such as severe pain, requiring urgent medical attention. Failure to provide prompt medical care could seriously endanger the individual's health or the health of an unborn child, affecting bodily functions or organ operations.[16] Hill tribe people from Thailand are considered highly vulnerable if they experience EMCs as they live in areas with limited healthcare resources, including healthcare personnel and other facilities, during transfer to the nearest hospital.[12]

An IFT refers to a process of transferring individuals from one healthcare facility to another one, and this helps to ensure continuity and quality in healthcare. It is a common means of access to fast, secure, and specialized care.[5,17-18] In Thailand, the IFT begins at sub-district health-promoting hospitals, the primary-level hospital. They act as gatekeepers to decision-making, referring patients to secondary-level and tertiary-level care. The country's universal coverage scheme covers 75% of the Thai population, in which members can access public health care or health units close to home free of charge. They are required to have a referral letter or a patient transfer form when transferring to another facility.[19]

Introducing primary-level hospitals is a prime strategy to serve healthcare services to people living in rural areas. However, it is impossible to provide an equal standard of healthcare to all people, even though the provision of primary-level hospitals is wide and extensive. Due to resource shortages in some countries, rural services are not successful.[20] Rural patients transferred to higher-level facilities face four challenges: 1) patient/family preferences, the severity of illness, and specialty care needs;[5] 2) systems, including public and private treatment and existing policies to regulate IFT; 3) processes, including the accessibility and cost of IFT; and 4) communication, including communication between providers.[19] Several barriers related to IFT in rural areas are identified, including multiple communication methods like phones, person-to-person or texts, complex IFT steps,[5] no ambulance or medical equipment,[12] and the language barriers of different ethnic groups.[13,21]

Most of northern Thailand, including Chiang Rai, is highland where hill tribe people live.[7,22] Chiang Rai has hill tribe villages in the rural areas of six main groups, the Akha, the Lahu, the Yao, the Karen, the Meo, and the Lisu.[23] Thailand's hill tribes number 4.5 million, and 30% of them live in Chiang Rai.[7] Each hill tribe ethnic group has its language, culture, and way of life.[24] Mae Fah Luang district in Chiang Rai comprises four sub-districts, and several settlements border Myanmar's Shan State (**Figure 1**). IFT involves primary-level, secondary-level (district hospitals), and tertiary-level hospitals. The aforementioned geographic structures and other factors may limit hill tribe people's capacity to access timely and specialized care, whereas HCPs responding to EMCs and IFT may need to express their voices. Thus, both parties' experiences are worth investigating. The findings of this study could improve the quality of IFT for this minority group.

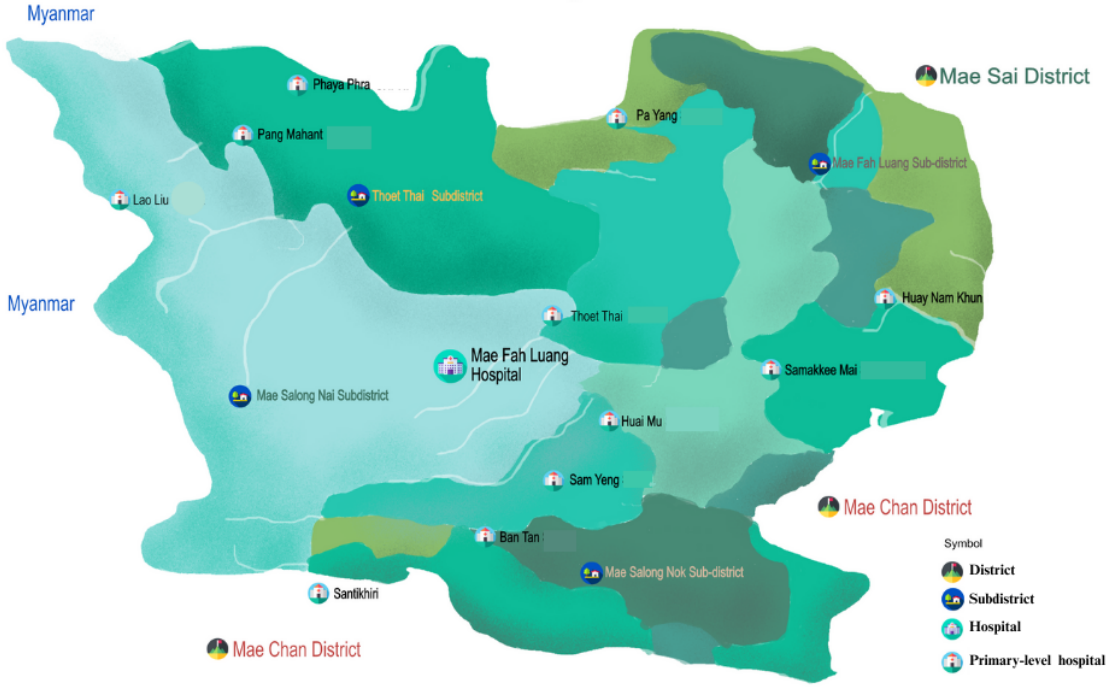

Figure 1. Mapping of Mae Fah Luang District, Chiang Rai, Thailand

Study Aim

This study aimed to explore (1) the experience of hill tribe people regarding EMCs and IFT, and (2) the experience of HCPs regarding IFT in rural mountain areas of northern Thailand.

Methods

Study Design:

A qualitative descriptive design was employed. This approach is straightforward and allows the researchers to comprehend the experiences of participants based on naturalistic inquiry principles that are essential for enhancing nursing practice and patient outcomes.[25] The Consolidated Criteria for Reporting Qualitative Research (COREQ)[26] was used to ensure the transparency and accuracy of reporting of this qualitative research report.

Setting and Participants: This study recruited 16 hill tribe people and 22 HCPs living and working in sub-districts of a highland province, Chiang Rai. The hill tribe people were recruited using the snowball technique by getting information from the village

headman following the inclusion criteria: 1) adult hill tribe people of any ethnic group (age ≥18 years old), 2) experiencing EMCs and IFT, 3) fully conscious, 4) willing to participate, and 5) be able to communicate in Thai. Convenience sampling was used to select the HCPs if their work assignments were related to IFT for at least one year and if they were willing to participate. These included nurses, other allied health professionals (i.e., public health officers and community healthcare providers), and trained village health volunteers. HCPs would be excluded if they resigned or were transferred to other facilities outside the research setting.

Research Instruments: The instruments for data collection were: 1) The Hill Tribe People's Experience of EMCs and IFT Interview Guide (HTE-IG), 2) The HCP's Experience of the IFT Process Interview Guide (HE-IG), and 3) field notes.

The HTE-IG consisted of questions regarding personal information and eight semi-structured interview questions about hill tribe people's experience of EMCs and IFT, for example, *"What are your experiences with a serious illness?"; "Based on your experience when you had a serious illness, how did you cope with it?"* and *"How do you describe the experience when you were transferred to other hospitals?"*

The HE-IG consisted of questions regarding personal information and five semi-structured interview questions about HCPs' experience with IFT. Example questions are: *"What is/are the IFT system and steps executed in this district?";* and *"What are the factors that facilitate and hinder the IFT process?"*

In reflective journals, field notes were used by the researchers to document events, conversations, and participants' behaviors. The research team constructed the instruments, and three experts examined content validity. Before actual data collection, two hill tribe members were interviewed, and no questions needed further adjustment.

Data Collection: Data were collected from February to July 2019. Individual interviews with hill tribe participants were arranged at their preferred locations, either the village headman's house or their own home, except for two participants in a private room at the nearest primary-level hospital, whereas HCPs participants were interviewed at primary-level hospitals. The researchers had previous qualitative research experience and training. The 30 to 45 minutes interviews were recorded digitally and transcribed verbatim. Two co-researchers and participants verified the accuracy of the transcripts. For rich information, all individuals were interviewed at least twice. Thai language was used during the interview, with an interpreter when necessary. Field notes were documented soon after each interview. Data saturation was achieved when no new information arose from the interviews.

Data Analysis: The qualitative content analysis process of Elo and Kyngäs[27] was used. The researchers brainstormed, carefully read the transcriptions, and discussed them several times. Five processes were undertaken: 1) Open coding: numerous headings were generated to describe every aspect of the content; 2) Grouping data: the data were categorized into groups, implying a comparison with other observations; 3) Creating codes: similar data groups were grouped into codes; 4) Creating subcategories: generating to describe the phenomena to enhance comprehension, and generate knowledge; 5) Creating categories: similar or related subcategories were grouped to describe the phenomenon of the research topic at the most abstract level.[27] The data from hill tribe people and HCPs were collected and analyzed separately. Subsequently, we compared and contrasted findings and arrived at the overall conclusions.

Trustworthiness: Lincoln and Guba's trustworthiness criteria[28] were applied. Credibility was achieved through building confidence and trust through prolonged engagement. Member checking was informally and formally employed. Dependability was achieved when the researchers reviewed the interviews and analyzed the data independently. After that, the researchers discussed reaching a consensus. Confirmability was gained through a triangulation of interviews, field notes, and observations. A thick description of the

phenomenon was written to demonstrate that the research findings might be applied to different contexts or populations, thus helping to achieve transferability.

Ethical Considerations: This study was approved by the Mae Fah Luang University Ethics Committee on Human Research (REH-61228) and the Chiang Rai Public Health Office No. CRPPHO 53/2561. Written or thumbprint consent was obtained from all participants. The research project's goals and their right to withdraw from the interview were explained. This research project had no withdrawals. Data were password-protected. This research project followed the Declaration of Helsinki criteria.

Findings

Sixteen hill tribe people from three subdistricts (7 male, 9 female) were interviewed. The majority were married (n = 13), with a median age of 36.5. There were six Lahu, five Akha, four Lishu, and one Mong. More than half could not read or write the Thai language. Most worked in the agricultural sector (n = 7) with an average monthly income of approximately 100 US dollars. Over two-thirds were stateless, while the rest received healthcare coverage through the Thai universal coverage scheme. Nearly two-thirds had no underlying diseases, and a quarter of them used IFT services at tertiary-level hospitals more than once. Nearly half were accidents, followed by severe postpartum hemorrhage and acute high-grade fever with chills. Based on patient acuity levels for IFT, half were stable but had a high risk of deterioration; half were unstable; another half were stable with a medium risk of deterioration.

Twenty-two HCPs (10 male, 12 female) had a median age of 32.5 years. Two-thirds had earned a bachelor's degree. Thirteen worked at primary-level hospitals. Eight were registered nurses, five were staff of the subdistrict administrative organizations, and the rest were village health volunteers, community healthcare providers, and others. Six HCPs were hill tribe people. The average time that HCPs had worked with IFT for hill tribe people was 7.7 years.

Italics below indicate participant excerpts, "..." denotes the omission of an unrelated phrase, and "*XX*" or "*YY*" indicates omitted place names. HCPs are coded "H" and hill tribe people "P."

Hill Tribes' Experience of EMCs and IFT

Four categories emerged from the data and were divided into eight subcategories (**Table 1**). The categories included 1) perceived barriers to rapid access, 2) helping hands, 3) the polarity of IFT services, and 4) ways toward a bright future.

Table 1. Categories, subcategories, and codes of hill tribes' experience of emergency medical conditions and interfacility transfer (n = 16)

Categories	Subcategories	Codes
Perceived barriers to rapid access	- Lack of knowledge regarding EMCs	- Unknowing of "emergent" conditions
		- Using common sense to make decisions about medical care needs
	- Communication barriers	- Language barriers
		- Limited internet and telephone access due to its cost
The helping hands	- Seeking ways out	- Seeking help when self-management is impossible
		- There must be ways out
	- Neighbors and VHVs making a difference	- Helping hands from friends and neighbors
		- Neighboring VHVs, the great supporter
The polarity of IFT services	- Inefficient IFT services	- Delayed coordination
		- HCPs shortage
		- Long transportation time
	- No ethnic boundary	- Primary-level hospitals for all
		- Caring for stateless people

Table 1. Categories, subcategories, and codes of hill tribes' experience of emergency medical conditions and interfacility transfer (n = 16) (Cont.)

Categories	Subcategories	Codes
Ways toward a bright future	- Changing a means of communication for health-related information	- Use of local language - Use of spoken language - Use of local authority
	- Prompt local services (sub-district level)	- Available rescue team - Available transport vehicles

Category 1: Perceived barriers to rapid access to EMCs management

This category comprises two subcategories: Lack of knowledge regarding EMCs and communication barriers. Limited knowledge of EMCs, consequences, and first aid can cause patients to feel unsafe. Inability or limited ability to read and understand national language impacts their ability to interact with HCPs.

Subcategory 1.1: Lack of knowledge regarding EMCs. Three-quarters of the participants did not know the signs of a severe illness considered "emergent" conditions requiring rapid medical attention. Most of them had no idea about EMCs but used common sense to make decisions about the necessity of medical care.

> *"I don't know about the emergency illnesses. My stomach hurts badly. Two hours of colic. I rested, but the discomfort worsened. I only know sick people ought to endure until they can't."* (P13 – Abdominal aortic aneurysm)

Subcategory 1.2: Communication barriers. Hill tribe participants informed that they did not fully understand Thai. They could speak simple Thai but could not read. Even if translated, they cannot understand the pictures, cartoon characters, or text of health information materials. The rescue crew arrived late because the staff did not understand their verbal requests for help. In addition, due to internet and phone costs, health information may be hard to access. For example,

> *"Although we can speak Thai or our language (Lahu), we cannot read or understand pictures or words they have posted at the hospital."* (P4)

> *"We called 1669. They asked several questions that we did not know...it took a very long time for them to come and help an unconscious person."* (P8)

> *"Most of us have a telephone and can use the internet...It is costly, so we keep it for necessary or emergency calls only."* (P9).

Category 2: Helping hands

This category, divided into two subcategories, described the experience regarding help they received for serious medical conditions. This category represents key facilitating factors enabling the participants to perceive that they could find help and who could be their helpers.

Subcategory 2.1: Seeking ways out. Most hill tribe participants did not know the emergency phone number 1669. They also did not know basic first aid. Thus, they needed to seek first aid. They expressed that there must be someone in the community who could help.

> *"I have a phone, but I don't know the emergency call number. So, when somethings go wrong, I know I must ask for help."* (P3)

Subcategory 2.2: Neighbors and VHVs making a difference. Hill tribe participants indicated that they might not have survived without helping hands from their friends, neighbors, and village health volunteers (VHVs). Friends and neighbors offered transportation to the closest primary-level hospital, whereas VHVs could save lives as they knew how to perform basic first aid. Two participants expressed:

"On that night, I didn't have a motorbike. I called our friends and asked them for help... and they delivered me to primary-level hospital." (P15)

"In our village, only the VHVs know first aid...they can help and save us." (P2)

Category 3: The polarity of IFT services

Two poles, negative and positive experiences, were expressed. Hill tribe participants reported several challenges that may compromise the current IFT services efficiency. They expressed the sources of inefficiency that might cause further injuries or worsen medical conditions. On the contrary, they highly appreciated the staff at healthcare facilities where they received care without ethnic boundaries.

Subcategory 3.1: Inefficient IFT services. Nearly half pointed out that there was a delay in coordination among HCPs, mainly when an incident occurred at night. In addition, coordination among HCPs was slow. Usually, primary-level hospitals provided health services from 08:00 a.m. to 08:30 p.m. because they had inadequate staffing after these hours. In some areas, primary-level hospitals stayed far from home. It was cumbersome when they decided to go to the nearest primary-level hospital and needed to transfer to a higher level of care. For example,

"My dad was unconscious. It took a too long time to wait after our VHV called 1669 and got a car to transfer him to the hospital...We had no other choice, just kept waiting and that could turn bad." (P2)

"I was unwell that night and the primary-level hospital was closed. It was awful to go down the mountain to the hospital. It was far, and we had no vehicles... I asked the HCPs, and they said they didn't have enough staff." (P7)

Subcategory 3.2: No ethnic boundary

Although several sources of inefficiency toward IFT services were stated, hill tribe participants expressed their admiration for the services and HCPs' willingness to help without discrimination of who they are, providing proactive services and helpful guidance, even though some of them were not eligible for UCS due to illegally living in Thailand.

"I talked to HCPs at our primary-level hospital when I have health queries. I always received prompt and kind responses. When it was the day, I was seriously sick, within a very short period, a swarm of HCPs was taking care of me." (P2)

Since there were several stateless people from ethnic minorities, they may get caught when entering cities. However, hospital staff offered a permission card that allowed relatives to care for a hospitalized family member regardless of whether they held a legal identification card.

"We carried our kids to primary-level hospital from our hilltop home. We have no nationality, yet our daughter was cared for until she recovered from a serious illness. A patient transfer form saved our child. The HCPs treated us as if we were Thais." (He cried, and his voice trembled) (P16)

Category 4: Ways toward a bright future

To improve healthcare services toward EMCs and IFT for a brighter future, hill tribe participants proposed that there should be ways to get rid of language barriers when health information is communicated. These might include the use of local languages by the local authority person through direct spoken words or local broadcasts. Another important suggestion was that prompt local services at the sub-district level should be available 24 hours. These should include rescue teams and vehicles for transporting patients to healthcare facilities.

Subcategory 4.1: Changing a means of communication for health information

Lack of language proficiency is a major communication barrier hindering efficient EMC management and IFT. Changing a means of communication

is worth the actions. Using their local languages and conveying effective health-related messages via spoken language would be more efficient than written language. Additionally, using a village headman to convey health-related information can be a powerful local authority person.

> *"We have a local radio channel and a military channel that use our languages...We do follow important news and health-related messages."* (P8)

> *"Announcement on the voice over the line in the village is accessible and understandable to everyone."* (P7)

> *"When important messages are to be given to us...you should inform our leader, so when he arranges the community meeting, he could convey such messages directly."* (P2)

Subcategory 4.2: Prompt local services (sub-district level). All hill tribe participants wished to have local first responders to rescue those with EMCs in their community. Moreover, there should be proper vehicles available for transporting those in emergencies.

> *"We should have a rescue unit and team here. Everyone in our community needs this."* (P5)

> *"We want a transport car. The primary-level hospital does not have one to transfer patients to the hospital. Sometimes we called, they couldn't send a car."* (P9)

HCPs' Experiences of IFT

HCPs provided rich information about how IFT was taken place between the district, subdistrict, and village facilities, where the incidents occurred, what worked and did not work, and proposed recommendations for further improvement. Three categories and seven subcategories emerged (**Table 2**).

Table 2. Categories, subcategories, and codes of healthcare providers' experience of IFT (n = 22)

Categories	Subcategories	Codes
The district system of IFT	- Primary-level hospital: The starting point	- The first responder - Primary assessment and first aid - Calling for help
	- Secondary-level hospital: The key hub	- Point of coordination - 24-hour services
Making it work: The 3 sources of power	- The power of caring	- Goodwill to help - Enculturation
	- The power of collaboration and coordination	- Helping what one can - Working in concert with documentation
	- The power of information and communication technology (ICT)	- A popular means (mobile application) - A lifetime means (wireless communication network)
Hope for the better IFT	- Overcoming challenges	- Increasing the number of staff, equipment, and transport vehicles - Strengthening human capacity - Eliminating communication barriers between HCPs and hill tribes and among HCPs
	- Tailoring to the context	- Use of capable VHVs - Developing contextual-specific manual/ guidelines for IFT

Category 1: The district system of IFT

This category explains the IFT system in the district health services. After an incident, HCPs of the nearest primary-level hospital acted as the first responders either by witnessing the scene or getting to the scene after receiving a 1669 call. They started primary assessment and provided first aid. If the EMCs exceeded their local capacity, help from higher-level facilities would be requested immediately.

Subcategory 1.1: Primary-level hospital: The starting point. HCPs who worked at the primary-level hospital pointed out that they were responsible for providing emergency medical care at the scene and at their workplace. As the first responders, they provided primary assessment and first aid to ensure patient safety. In most cases requiring a higher level of care, they managed to ask for help with transportation due to limited resources, particularly vehicles, ambulances and the like. They expressed,

> *"When there was an incident, we assessed the situation and decided whether further help was needed. We performed first aid and called for help from XX hospital* (the secondary-level hospital). (H15)

Subcategory 1.2: Secondary-level hospital: The key hub. Secondary-level hospitals act as a coordinator of IFT between a primary-level and a tertiary-level hospital to make it easier for patients to access medical care. These hospitals provided 24-hour services. The HCPs of these hospitals were responsible for multitasking in the IFT process, such as a nurse responsible for an emergency call, coordination between the HCP team, and referring in and referring out from and to a primary-level and a tertiary hospital, as stated:

> *"The responsibility for the referral system falls on secondary-level hospitals... A nurse team leader of an emergency room of the secondary-level hospital has the authority to assign HCPs according to their monthly scheduling assignment."* (H20)

> *"The secondary-level hospital is open around-the-clock to coordinate and send patients to and from XX Hospital* (a tertiary-level hospital)." (H15)

Category 2: Making it work: The three sources of power

This category describes why and how the IFT works. HCP participants expressed important facilitating factors. Although several challenges were defined, they showed positive impressions that with these sources of power, they could help hill tribe people living in their responsible areas. Three sources of power emerged: The power of caring, coordination and collaboration, and information and communication technology (ICT).

Subcategory 2.1: The power of caring. HCPs expressed their willingness to help people in their communities even when it was not during their office hours. They described how they devoted themselves to their people.

> *"One night, a seriously ill patient came to primary-level hospital... We had no car, but XX Hospital's car was coming through an IFT arrangement. Since it was far, we arranged to meet in between at a place* (namely YY)*... A nurse drove the patient and relatives to that place* (YY) *because we didn't have enough HCPs. A patient needed CPR. Our off-duty colleague helped us with only one person on duty. We all are willing to help each other. This is our agreement to help our people."* (H4)

> *"If you asked whether it is worth the salary, the answer is 'no,' what makes us work this way is our 'heart'."* (H1)

In addition, most HCPs working in primary care settings are local people, and some are hill tribe people. This enculturation contributes to being easily accessible, friendly, and comfortable for hill tribe people.

> *"Most HCPs and other personnel* (e.g., patient helpers) *who work here are local people. We understand what they* (hill tribe people) *want. We also can be good interpreters and able to take medical histories and all other necessary information accurately with great details."* (H6)

Subcategory 2.2: The power of coordination and collaboration. The staff from several sectors play important roles in driving effective IFT. These include staff from the primary-level hospital (nurses, public health officers, patient helpers, drivers); Subdistrict Administrative Organizations (SAOs); police and military departments; secondary- and tertiary-level hospitals including medical doctors; and 5) VHVs. They shared common goals to make the IFT process as rapid and safe as possible. Each party lends a helping hand to whatever they can.

> *"I'm an official staff of the SAO. In many incidents, staff from several parties come to help. I could not help with the medical conditions but lift a raised stretcher, organize traffic by putting up road barriers, manage to impede traffic, etc. For first aid, I left that for 'MOR'* (a nurse). *If it happened in the 'RED' zone (drug epidemic areas), police officers and soldiers were responsible for safety protection."* (H12)

Many HCPs indicated that they collaborated to create a concert-like working place from their locations under limited human resources and supplies. Good documentation helps make this collaborative work effective.

> *"We have a clear agreement* (guidelines) *on who will do what. For example, in trauma cases, a nurse of primary-levels hospital is responsible for first aid. An emergency room* (ER) *nurse of a second-level hospital is also responsible for this kind of care, but the decision whether or not the patient should be transferred falls on to a medical doctor* (ER doctor)*."* (H20)

> *"After prescribed medications and treatments were given to the patient, we documented in the Patient Transfer Form so that it could convey what's going on here to the hospital we referred out."* (H2)

Subcategory 2.3: The power of information and communication technology (ICT). ICT plays a significant role in rural healthcare delivery. Although several means of communication existed, most HCPs stated the use of a mobile phone and its application (LINE app., an interface on the mobile application where users can send group text messages and use voices or video calls) as a popular means to convey key health-related information.

> *"We have a LINE group for communication between ER staff. We can also make a call all the time for consultation."* (H10)

> *"We have several LINE groups, for example, a LINE group of SAOs. We communicated with SAO staff...to transfer the patient to the hospital. Having Line groups make the work easily manageable."* (H3)

In addition to a mobile application, HCPs still used outdated equipment, a wireless device over a radio communication network, especially during patient transfer.

> *"During the patient transfer, we used a wireless radio transmission device to communicate with staff of the dispatch center and the higher-level hospital and to report the progress of the patient's conditions to them. This device still works well for us even when sometime the signals may be low."* (P9)

Category 3: Hope for better IFT

This category comprises directions the HCPs proposed, hoping for a better IFT. Although there were positive points of view on the current IFT system, the

participants identified several challenges and proposed recommendations to overcome these challenges. They also indicated that tailoring the recommendations to the context was the potential success factor for more rapid and safer transfer.

Subcategory 3.1: Overcoming challenges. The participants identify several challenges, including inadequate or unqualified personnel (e.g., nurses, emergency medical technicians, drivers), lack of or unequipped transport vehicles, and communication barriers resulting in time delays. Their wishes and recommendations were expressed thus:

> *"Staff shortage. We have only one driver who cannot work every day. A patient needs CPR, and only two staff are on duty, one public health officer and one patient helper... Imagine who drives a car and who performs CPR! Driving a car from this highland, on narrowed and twisty roads, to the town, we are most likely to have a car accident. Increase workers, especially during weekends."* (H2)

> *"We want equipment for life-saving, such as an automated external defibrillator. If we really have it, we may not dare to use it because we do not have enough knowledge and skills."* (H3)

Another challenge most HCPs voiced was communication barriers. This happened between HCPs and hill tribe people due to language barriers. Two participants informed that,

> *"We used to have health information available in hill tribe people's languages. They didn't read. Videos or audio messages are suitable for them. Interpreters on call are helpful. It helps reduce time spent taking history, explanations, etc. This helps us treat them on the spot."* (H10)

Communication problems existed among HCPs too. This happened when unclear messages were sent, especially when telephone communication was used. These resulted in time delays. They proposed strategies to eliminate these barriers.

> *"We called the XX hospital to receive the patient. We waited hours for the transportation car. Calling again, they misunderstood. They assumed we sent the patient.* (H4)

> *"We should have a center of coordination in each district. Currently, we have a communication detour which slows down the IFT process."* (H7)

Subcategory 3.2: Tailoring to the context. To ensure that hill tribe clients would receive the best possible IFT services, HCPs indicated the need to increase both the number and the capability of VHVs. This was because, generally, VHVs were hill tribes who are most suitable for a link between hill tribe clients and HCPs for community-based care, especially care in cases of EMCs requiring IFT. For example,

> *"We should have VHVs to educate hill tribe people about how to report emergent situations. The District Administrative Organization should recruit more VHVs...they are the right persons for us."* (H5)

> *"VHVs should receive training, and it would be good to have a manual for them to provide emergency care in the same direction with us."* (H22)

Discussion

The findings of this study revealed that the hill tribe people lacked knowledge regarding EMCs and first aid. These findings support a limited existing study in that tribal people considered acute stroke and acute myocardial infarction unimportant. They believed healthy persons could not develop acute stroke or myocardial infarction. Some individuals misunderstood their emergency illness experiences.[12] Another study

demonstrated insufficient health literacy in Thailand's hill tribe people, including parents' understanding of the HBV vaccine for their children.[9] However, hill tribe people seek first aid from neighbors, friends, and VHVs. Evidence demonstrated that VHVs had flexible work hours based on community requirements and their principal occupation. So, when a villager got sick, one had to administer first aid and take them to the hospital.[29]

Communication issues, especially language barriers, were discovered. Hill tribe people have their own spoken and written languages.[24] This issue has been identified as another obstacle to healthcare services. This result is consistent with previous studies, which demonstrated that communication obstacles were a significant barrier to accessing healthcare services, as some did not speak Thai.[7,9,12,23] Similarly, a systemic review study reported that ethnic minority patients had a higher risk of safety occurrences due to language proficiency, illness and treatment attitudes, and health-professional interactions.[30]

Hill tribe people viewed delays in IFT services as caused by various factors, including delayed coordination, a shortage of HCPs, and distance between home and hospitals. This perspective partially aligned with the opinion of HCPs. The global shortage of HCPs, particularly emergency room nurses[31] and rural first responders,[32] is a significant issue in rural and urban areas. Low income, workload, and a lack of resources made it harder to keep HCPs in rural areas.[32] Furthermore, due to the shortage of manpower,[4,32] and the high turnover of staff at work, this may affect their IFT skills,[20,32] and the majority of HCPs lacked adequate expertise in EMCs.[32-33] Delays in IFT services harm receiving necessary medical care.[4] This may impact IFT's management and coordination delays. According to McNaughton et al.,[5] communication and coordination were crucial to rural interfacility ED transfers.

However, despite limited resources such as ambulances and HCPs, hill tribe participants perceived that HCPs were taking good care when they had EMCs and had to transfer to other hospitals even though they did not have a legal identification card. It reflects there is no ethnic boundary. This finding was in line with HCPs' perspective. Although a lack of resources in many parts existed, they were able to complete the mission with the three sources of power (caring, coordination and collaboration, and ICT). Chui et al.[34] examined the inequalities in pathways in South East London. They found that Black African and Black Caribbean people were twice as likely as White British people to be referred to inpatient services than outpatient services. This reflects equality in IFT. Consistent with a prior study, nurses in remote communities believed they were doing the best they could with the resources they had.[20] They mentioned close-knit, flexible, and adaptable HCP teams operating in remote regions covering areas such as the emergency room, outpatient department, inpatients, and IFT.[35]

Our finding suggested that local broadcasting by the village head was an important means to communicate in the rural mountain areas. A previous study showed that such heads disseminated information, news, and announcements via local broadcasting. Hill community depression care benefits from local broadcasting.[36] In addition, hill tribe people need more first responders and proper vehicles available for IFT. This was congruent with a prior study in another mountain area that found a significant proportion of hill tribe people needed an ambulance for IFT.[12] A qualitative study showed that lacking financial, human, and infrastructure resources influences the absence of FRs in rural communities.[32] Additionally, improving the IFT by tailoring it to tribal groups and increasing local VHVs is needed. Because the VHVs were members of the local community, they had a deep understanding of the area's context. VHVs worked with a mindset of volunteer service and in various roles.[37] These results align with the hill tribe participants' experiences and previous studies that described why the VHVs were key for the community.[29]

The result showed the IFT in this district began at the primary-level hospitals, and the secondary-level hospital served as an IFT hub for the hill tribe people.

This was consistent with the limited literature in that the primary-level hospital acted as a gatekeeper in IFT when referring patients to the secondary-level hospital. The secondary-level hospital provides care for primary-level hospital patients. It refers patients who exceed the hospital's capacity for treatment to tertiary-level hospitals, which serve as the hub of admission and referral.[19] This pattern is seen in other rural hospitals in New Zealand. The HCPs indicated that, as a hospital, it can serve patients locally and facilitate access to transportation to specialized care.[35]

Limitations

This study's results were context-specific to a district of rural mountain areas in the upper north of Thailand. The findings may represent other districts with similar populations and contexts. During data collection, three hill tribe participants could not speak Thai fluently. We used an interpreter and took a maximum of three interviews that might cause them to be fatigued.

Conclusion

The findings of this study revealed that primary-level hospital was the starting point, and the secondary-level hospital was the key hub. When hill tribe people had EMCs, they sought ways out and made a difference through neighbors and VHVs. Based on both groups of participants' experiences with EMCs and IFT, there was no ethnic boundary, and the three sources of power (caring, collaboration and coordination, and information and ICT) were important strengths on which they all agreed. Hill tribe people perceived inefficient IFT services and communication barriers. In response, the HCPs tried to address these issues by overcoming challenges and strengthening human capacity. The hill tribe participants suggested ways toward a bright future, including changing how to communicate health-related information and prompt sub-district level. The HCPs preferred overcoming challenges and tailoring IFT to the context.

Implications and Recommendations

The findings have important implications for HCPs, especially nurses, nurse educators, clinicians, and VHVs. An education on EMCs for hill tribe people should be performed and made aware when choosing health education materials appropriate for the level of knowledge and experiences of hill tribe people. As a result, considerable challenges for policymakers, staffing (HCPs and VHVs), good-conditioned vehicles, air ambulances, geographic information systems (GIS), and emergency equipment supplies for IFT are essential and should be executed. It is also recommended that in future research, there is a significant need for guidelines and information technology programs to create a more effective IFT in rural mountain areas with hill tribe people and limited resources.

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มุมมองของชาวเขาและผู้ให้บริการด้านสุขภาพต่อภาวะฉุกเฉินทางการแพทย์และการส่งต่อผู้ป่วยระหว่างโรงพยาบาล: การศึกษาเชิงคุณภาพในชนบทภาคเหนือของไทย

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บทคัดย่อ: การส่งต่อผู้ป่วยในเขตภูเขาชนบทมีหลายประเด็นที่ต้องศึกษาเพิ่มเติม การขาดแคลนทรัพยากรและการไม่สามารถให้การรักษาแก่อาการที่เกิดขึ้นในผู้ป่วยได้เป็นเหตุผลของการส่งต่อผู้ป่วยระหว่างโรงพยาบาล การวิจัยเชิงคุณภาพแบบพรรณนานี้เก็บรวบรวมข้อมูลเพื่อศึกษาประสบการณ์ของชาวเขา (n = 16) และผู้ให้บริการด้านสุขภาพ (n = 22) เกี่ยวกับภาวะฉุกเฉินทางการแพทย์และการส่งต่อผู้ป่วยระหว่างโรงพยาบาลในเขตภูเขาชนบท ภาคเหนือของประเทศไทย เก็บรวบรวมข้อมูลระหว่างเดือนกุมภาพันธ์ถึงกรกฎาคม พ.ศ. 2562 ด้วยการสัมภาษณ์เชิงลึก บทสัมภาษณ์ทั้งหมดถอดความแบบคำต่อคำและใช้ขั้นตอนการสังเคราะห์เนื้อหาของอีโลและคินแกสสำหรับการสร้างความน่าเชื่อถือของข้อมูลใช้แนวคิดของกูบาและลินคอร์น

ผลการศึกษาแสดงให้เห็นถึงสี่กลุ่มหลักที่สะท้อนประสบการณ์ของชาวเขาเกี่ยวกับภาวะฉุกเฉินทางการแพทย์และการส่งต่อผู้ป่วยระหว่างโรงพยาบาล ได้แก่ 1) การรับรู้อุปสรรคในการเข้าถึงบริการอย่างรวดเร็ว 2) การให้ความช่วยเหลือ 3) สองมุมมองของบริการของการส่งต่อผู้ป่วยระหว่างโรงพยาบาล และ 4) หนทางสู่ความสดใสแห่งอนาคต สำหรับประสบการณ์ของผู้ให้บริการด้านสุขภาพแบ่งออกเป็นสามกลุ่มหลัก ได้แก่ 1) ระบบการส่งต่อผู้ป่วยระหว่างโรงพยาบาลในเขตที่ศึกษา 2) สำเร็จได้ด้วยสามแหล่งแห่งพลัง และ 3) ความหวังสำหรับการส่งต่อผู้ป่วยระหว่างโรงพยาบาลที่ดีขึ้น

ผลการศึกษานี้อาจนำไปสู่ความเข้าใจที่ดีขึ้นของพยาบาลและผู้ให้บริการด้านสุขภาพที่ให้การสนับสนุนการส่งต่อผู้ป่วยระหว่างโรงพยาบาลสำหรับผู้ป่วยที่มีภาวะฉุกเฉินทางการแพทย์ซึ่งเหมาะสำหรับประชาชนชาวเขาและสถานบริการสุขภาพ

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คำสำคัญ: ชาวเขา ภาวะฉุกเฉินทางการแพทย์ เขตชนบท การส่งต่อผู้ป่วยระหว่างโรงพยาบาล ผู้ให้บริการสาธารณสุข ประเทศไทย

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