



Reconstructing Social Networks and Connections in Indigenous Tribes: An Analysis of Countermeasures to COVID-19 among Rural Tribes in Taiwan

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Abstract

Since the first outbreak of COVID-19 in December 2019, numerous countries have experienced waves of outbreaks that have had severe social, economic, and political effects. Many medical and anthropological studies have suggested that tribes and elders in rural and indigenous villages became isolated from the outside world due to a lack of resources and because of cultural constraints. On January 22, 2020, the first confirmed case of COVID-19 in Taiwan was discovered. As of October 23, 2022, 7,476,478 confirmed cases have been reported; of these, only 64,298 were in Taitung County, making it the region with the fewest cases in Taiwan. In this ethnographic study, I visited indigenous tribes in Taiwan that were less affected during the pandemic, conducted in-depth interviews with tribal-care providers, and collected secondary data from reports and social media regarding pandemic prevention on tribes in Taitung County. I also explored the difficulties created by the suspension of tribal-care services due to pandemic-related social distancing and isolation measures, and how care providers overcame these challenges. COVID-19 is not the first and nor will it be the last virus to threaten humans. Thus, it is important to gain insight into how care networks and connections were rebuilt through innovative measures that enabled tribal elders to receive culturally sensitive care and maintain their health during the pandemic.

Keywords: COVID-19 Pandemic; Indigenous Tribes; Social Networks; Taiwan

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Introduction

Since the first outbreak of COVID-19 in December 2019, numerous countries have experienced waves of outbreaks and implemented various preventative measures in response. In general, physical distancing, isolation, and lockdowns have been the most effective measures to prevent the virus from spreading. “Lockdown” is an emergency protocol that prevents the general public from freely moving from one area to another. “Complete lockdown” further means that people should stay where they currently are, and no entry/exit movements are allowed. Thus, lockdowns can be both a preventive and an emergency strategy to save the lives of vulnerable or at-risk people (Grover *et al.* 2020). However, these measures have had social, economic, and political effects, and have led to stagnation. Employees began to work from home and contact their co-workers through digital technologies such as videoconferencing. For older adults without digital competencies and/or access to technology, social distancing and home isolation have meant isolation from everyone except their family; this in turn may change their lifestyle, decrease their access to social support, and strain social ties. As a result, some older adults, who should enjoy their lives in place, begun to experience loneliness, which can lead to an increased risk of death (Chang 2022); these problems may be even greater for older adults living in tribes.

Since the pandemic was first declared, some medical and anthropological studies have suggested that older adults in rural areas in the US and Belgium may be more vulnerable and less financially solvent and that they often lack resources, which may exacerbate the challenges created by the COVID-19 pandemic (Verbruggen, Howell, and Simmons 2020; Williams and Mattos 2021). Various rural tribes in Mexico (De León-Martínez *et al.* 2020) could not respond to and prepare for the pandemic because they lacked knowledge about the virus, infrastructure (e.g., water), and network resources, and experienced language barriers. As other qualitative studies have indicated (Kaplan *et al.* 2020; Suratana *et al.* 2021), they were forced to comply with the prevention, control, and lockdown policies implemented in their countries, which isolated many older tribal members from the outside world, thereby threatening their health.

On January 22, 2020, the first case of COVID-19 was confirmed in Taiwan. As of October 23, 2022, 7,476,478 confirmed cases have been reported, of which only 64,298 were in Taitung County, making it the region with the fewest cases in Taiwan. In this ethnographic study, I visited remote indigenous tribes in eastern Taiwan and investigated their community-care practices using in-depth interviews, ethnographic observations, and data analysis to determine whether the tribes’ core social networks were being weakened due to the pandemic—and to what effect—and to understand how certain measures prevented the pandemic from reaching the tribes. This report is based on qualitative interviews and observations conducted with care providers working with these tribes. I explore the

social implications of these effects and offer policy recommendations to address the isolation that many rural elders may experience due to climate change, natural disasters, epidemics, and other unprecedented and unforeseen events (Verbruggen 2020).

Taitung County: Historical-Social Context and Its People

As humans live longer, growth in the number of older adults worldwide is unprecedented. Taitung County is a rural area located in eastern Taiwan. It also known as ‘back mountain,’ which means that Taitung County lags far behind other areas in all aspects of its development. In 2021, the population of Taitung was 213,386 people, 16.65% of the Taitung population was 65 years or older, which is higher than the average in Taiwan. Moreover, the average life expectancy (75.79 years) is the lowest in Taiwan (Lee *et al.* 2021). One-third of the population of Taitung is indigenous (about 78,463 people), and there were 23,186 indigenous adults over 55 years of age. Taitung has the highest proportion of indigenous people of any county in Taiwan (Council of Indigenous Peoples 2022a). There are seven ethnic groups (e.g., the Amis, Puyuma, Bunun, Tao, Paiwan, Rukai, and Kavalan) and 183 tribes (Liu, Kuo, and Lin 2018). The indigenous culture has been well preserved within the county because Taitung developed relatively late. Among the 16 townships in Taitung, only one has no indigenous people (Green Island Township), and the remaining 15 have indigenous tribes (Taitung County Government 2022).



Figure 1. Map of Taitung County (Council of Indigenous Peoples. 2022b).

<https://www.cip.gov.tw/en/village/info.html?VID=D199EC951076FA3B&cumid=CA8286A69511C172>

This drew my attention because Taitung is a rural area, and about one-third of the residents are

indigenous; they are associated with relatively high levels of physical activity when compared with residents in other urban areas (Wu *et al.* 2016). Since 2015, the Council of Indigenous Peoples in Taiwan provides services that combine indigenous culture with elements from the local environment. These services integrate culture and health in one location, hence the name “culture and health station.” The indigenous culture and health stations (referred to as ICH stations in the following) are funded by the Taiwanese government together with local social-welfare groups, religious groups, and non-profit organizations to jointly provide services for the local tribal elders (Han 2019). Through the establishment of these stations, the local service network and professional organizations can be connected; this integrates the local service capacities and various resources (Huang 2020).

The ICH stations support the daily life of indigenous older adults, including care visits, telephone greetings, consultations and care-service referrals, meal delivery, and spiritual, cultural, and health-promotion services. These stations integrate eldercare, long-term care, after-school care and child care, and try to strengthen the care service and support systems for indigenous peoples and ensure that indigenous elders receive appropriate services and daily care (Council of Indigenous Peoples 2020, 2021). As of January 2022, there are 433 ICH stations in Taiwan and 103 stations in Taitung, which accounts for about 23.8% of all ICH stations. Under the indigenous policy, the ICH station provides full-day services to support healthy aging in place (Fang and Liao 2021).

Many medical and anthropological studies indicate that taking cultural perspectives into account is an important factor in caring for older tribal adults (Anderson *et al.* 2020; Kirmayer, Simpson, and Cargo 2003; Liu 2021; Weaver 2004). The ICH stations are a platform for providing services, promoting healthcare, and optimizing the service network for indigenous older adults. On the basis of this literature and Taitung’s experience with indigenous tribes, I wanted to investigate how the tribes responded to COVID-19, prevented the virus from entering their communities, and thus protected the people of Taitung County

Materials and Methods

Research Framework and Methods

This report is not focused on the interviews with elders, but interviews with the care providers. I adopted two research methods. First, I recruited the tribes’ eldercare providers and, through videoconferencing, conducted in-depth qualitative interviews from June to August 2021. Before the interviews, I directly contacted the person in charge of ICH stations, invited and informed them of the purpose and topic of the interview, and received their consent. The main topics were the effects of the pandemic on eldercare, and how care providers responded. Second, I collected secondary data from reports on pandemic prevention in tribes and social networks to understand the challenges to providing care, how the care system was adjusted, and the new methods adopted in response to the COVID-19 pandemic. I also conducted participant observations, where I shadowed the service providers as they cared for indigenous older adults in order to gain insight into the process of care-service provision from January 2020 when the first COVID-19 case was confirmed in Taiwan.

Research Participants and Contents

The goal of observing the interactions between the care providers and indigenous older adults was to understand how services were provided during this period. I conducted in-depth interviews with the care providers using semi-structured questionnaires to collect comprehensive data on the challenges they may experience, how they deal with them, and what they think would improve the process. The three main questions were: (1) “What are your challenges during the COVID-19 pandemic?”; (2)

“How do you cope with these challenges?”; and (3) “What suggestions do you have for the care process?”

Table 1 shows information about each interviewee. All five of the care providers I interviewed were women age 32 or above. Four of the interviewees had a senior high school-level or junior college-level education. Only two of the interviewees were not married. Each of the five interviewees had no more than six years of experience as a care provider.

Table 1 Interviewees' Demographics – Care Service Providers

Code	Sex	Age (years)	Education	Marital status	Experience as care provider (years)
A	F	48	Junior college	Married	3.5
B	F	43	Senior high school	Unmarried	1.5
C	F	36	Senior high school	Married	2
D	F	32	University	Unmarried	4
E	F	56	Junior college	Married	6

Findings

Challenges for care providers during the COVID-19 Pandemic

Eldercare in Taiwan is mainly provided through community care and long-term care facilities. The community-care model offers various services (e.g., physical activity, nutrition, social support, and long-term care) through institutions such as the ICH stations. An important feature of these facilities is that all of the care providers are indigenous; this ensures that the recipients and providers of care share the same cultural background. As I learned from my interviews with care providers at the ICH station in Taitung, the suspension of services at these stations during the pandemic strongly affected the tribal elders.

Elders felt disconnected from other tribal people

Because of the emigration of young people from Taitung, most tribal elders live alone and rely on care from relatives and the community. Due to the pandemic, many tribal people and the relatives of tribal elders who were heavily involved in tribal affairs and the ICH stations were cut off from each other. Without opportunities for interaction and communication, the tribal elders stayed home for long periods, which changed their everyday routines. With less social interaction, some elders began to experience depression and loneliness, which can negatively affect health (Chang 2022; De León-Martínez *et al.* 2020; Kaplan *et al.* 2020; Suratana *et al.* 2021). The care providers described:

The daily lives of tribal elders have changed. They have lost their focus and conversational partners, and they have no social lives [less language stimulation, cognitive activity, and muscle movement], which makes them lonely and accelerates aging. (A)

In the tribes, few families took care of the elders. Without a place to go, the elders stayed home for a long time, which made them depressed. (C)

Weddings, funerals, and the Harvest Festival are major events in tribes and not being able to attend made the elders feel lost. The restrictions on going to church and other religious sites deprived them of their spiritual outlets, which affected them emotionally. (B)
The tribal elders had never taken classes over video, so keeping up their exercise habits was difficult. (D)

Because many tribal elders highly value social gatherings related to weddings, funerals, and religious events, the inability to attend such gatherings made them feel lost. In addition, because religion is a crucial part of their lives, they were distressed by the suspension of church services and other ceremonies. Social isolation often leads to loneliness and depression, but it may be just the tip of the iceberg of harm (Steinman, Perry, and Perissinotto 2020). In other words, reduced social activity and a lack of engagement with the outside world can worsen health and hasten cognitive decline in older adults.

Changes to routine daily activities and schedule

A major function of the ICH stations is to offer activities that can help indigenous elders maintain their physical fitness. However, these daily health and physical activities were suspended during the pandemic, which made it difficult for the elders to maintain their musculature and health. Inadequate musculature can negatively affect balance and movement, which increases the risk of falls.

The elders who lost muscle strength may have a higher risk of falling at home. (C)

The care providers couldn't monitor the elders' health problems and medication use because of lack of regular physiological assessments. (E)

Furthermore, eating meals together is typically a daily routine that enables the elders to interact, and the meals are nutritionally balanced. When the ICH stations were temporarily closed due to the pandemic, meals were instead delivered to individuals at home. However, maintaining food supplies and meal services was a challenge, and the risk of a supply shortage remained. This also made it difficult for the elders to consume a regular diet of healthful meals.

During the epidemic, due to the shutdown of the ICH station, the daily meal schedule was interrupted. (B)

According to these interviews with the care providers, tribal elders may decline due to a lack of activity and proper nutrition. Thus, decision-makers within the government and service providers should pay attention to the inequality within society and ethnic groups. From the perspective of 'vulnerability,' it is necessary to consider why indigenous peoples bear higher risks (Huang 2020).

Lack of knowledge regarding pandemic prevention, medication, and assistance for medical treatment

Most of the indigenous elders had chronic diseases. But helping them visit physicians, fill prescriptions, and take the proper medicine was challenging during the pandemic. Informing the elders about pandemic prevention was also crucial to maintaining their health. The care providers described:

When elders who lived alone or did not have a phone required help, we couldn't help them immediately because we couldn't visit them. (A)

The elders felt isolated, and they were embarrassed to ask for help because we didn't see each other in person at the [ICH] stations. (E)

Most research suggests that there was a lack of knowledge about infection-prevention measures for COVID-19 during the first months of the pandemic. In this early stage, knowing that specific treatment and prevention options, such as targeted antiviral drugs and vaccines, were not yet available for COVID-19 (Yoshito *et al.* 2021; Wu and McGoogan 2020). Therefore, service providers and caregivers had a general lack of knowledge regarding pandemic prevention, medication, and assistance for medical treatment.

Transformation and innovation of social networks and connections

Since March 11, 2020, when the World Health Organization declared the novel coronavirus (COVID-19) outbreak to be a global pandemic, governments worldwide have requested that citizens avoid unnecessary activities such as taking public transportation, participating in group events, and travelling, and have encouraged them to stay at home in response to the spread of COVID-19. With the increase in cases and subsequent waves of infection, the end of the pandemic has become unpredictable, and the virus may become a part of daily life. As a result, lifestyles must change to live comfortably with COVID-19 (Suzuki 2020). Based on my interviews on pandemic-prevention measures worldwide, in the following sections, I propose a method of rebuilding the networks and connections that were disrupted by the pandemic in order to ensure age-friendly care.

Strengthening communities and tribes, cooperating to care for elders

Although social distancing and isolation have been highly effective preventative measures worldwide, they preclude the provision of external assistance. As a result, the rural tribes in Taitung County relied on the integrated strength of individuals, communities, and local institutions to prevent the spread of the COVID-19 virus. For example, volunteers and tribal members measured body temperatures and sanitized the hands of visitors. When cases of infection were identified, village-wide screening was conducted through the cooperation of township offices, District Public Health Centre Community Development Associations, tribal youth unions, volunteer teams, and other groups. With regards to social connections and support, care providers from the community care centres and ICH stations called the elders and interacted with them during meal delivery to evaluate their health condition and prevent them from feeling depressed or lost because of a lack of social interaction.

As such, the eldercare network that had been dismantled by the pandemic was rebuilt through cooperation among community-care centres, ICH stations, community residents, and members of the tribes. The strengths of the local government, community institutions, and tribes were leveraged to create a virus protection network to ensure the health and safety of the tribal elders.

Taking care of older adults by considering their culture

The tribes themselves adopted several health-care practices to prevent infection; the care providers and volunteers evaluated the elders' physical and mental conditions, identified problems related to medication, and reminded the elders of the virus-prevention regulations and practices through phone calls and home visits; this information was conveyed so that the elders could easily understand. For example, the regulations were translated into their tribe's language, and posters were created with information written in large, easy-to-read fonts.

Images 1-2 show that different tribes used their tribe's language to teach older adults how to protect themselves. Image 1 is a poster for an Amis tribe: "1. Ano masadak kita ci tangoyosan/ tamokis"

means “Remember to wear a mask when you go out,” and “7. Sungilaen/ halafineng a mananaw to kamay” means “Wash your hands thoroughly for longer than 20 seconds.” Image 2 shows a poster from a Paiwan tribe: “Pasusu ta ljinulesan a pinatatide tidean na caucau” means “Maintain social distance,” and “nakuya matevetavel itjen asematalidu ta wma” means “Avoid group activities.” These posters helped older adults understand more about COVID-19, and ultimately served to protect them.



Image 1. Pandemic prevention regulations in A'tolan Amis. Courtesy: Li-Hsien Wang



Image 2. Pandemic prevention regulations for a Paiwan tribe. Courtesy: Li-Hsien Wang

Beside this, foods believed to have antiviral properties (e.g., onions, ginger, and Chinese scallion) were collected in the tribes and added to meals. The tribal chiefs played music for cardiovascular exercise throughout the villages to encourage the elders to leave their homes and exercise.

Helping older adults stay physically active during the pandemic

As mentioned above, most daily health and physical activities were suspended due to the pandemic, which made it difficult for the elders to maintain their musculature and overall health. Care providers were assigned to help the elders exercise and perform simple activities. They brought bowling and ball equipment to the elders' homes and played games with the elders to help them to engage in daily physical activities (see Images 3 and 4).

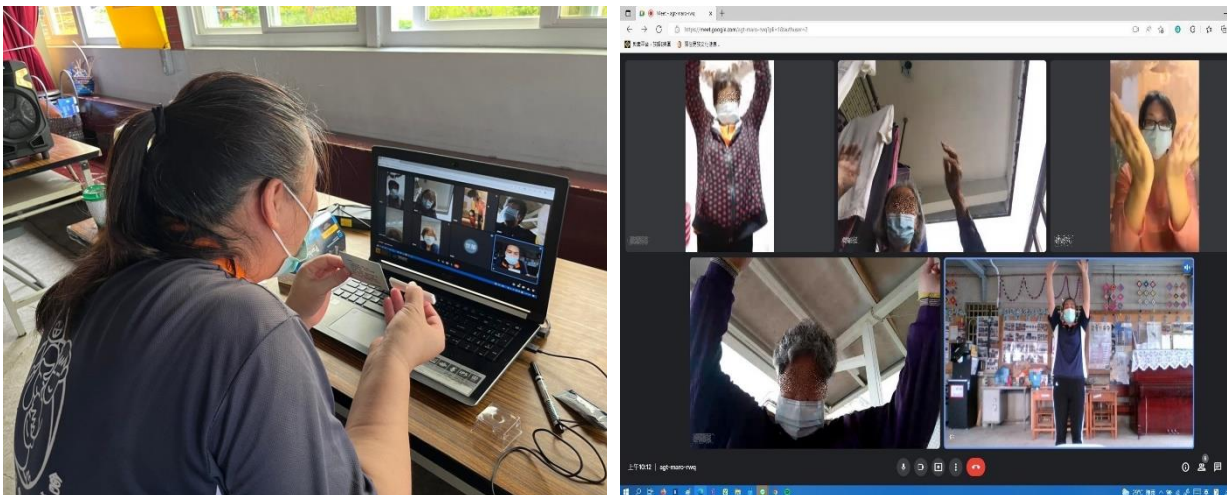


Images 3 and 4. Care providers playing bowling and ball games with elders in their homes during COVID-19. Courtesy: Shu-Ping Liao

Several services were also offered during meal delivery; e.g., in order to maintain elders' hand function, arts-and-crafts kits were delivered along with the meals. The care providers explained the crafts and arranged a date to collect the result; this was an example of suspending classes but not the learning process.

Using technology to help older adults stay healthy

During the COVID-19 pandemic, technology became an important tool for communication. First, care providers taught the indigenous elders how to use the technology so they could connect with service providers, relatives, friends, and other people. Care providers also used technology to teach the elders how to use COVID-19 rapid antigen tests, and how to keep exercising every day (see Images 5 and 6).



Images 5 and 6. Care provider used technology to help tribal elders maintain their health. Courtesy: Hsiao-Chun Hsu

Discussion: Rebuilt tribal networks and connection during the COVID-19 pandemic

Social connection creates a sense of belonging and enhances relationships with family members, friends, and neighbours; such relationships can even be established through volunteer work and community service. These connections are a source of happiness and support for many people. However, when individuals are disconnected from others, they may become socially isolated (Wildevuur *et al.* 2013). Because COVID-19 is highly transmissible, especially in cases of frequent and long interpersonal interaction (CDC 2021), social distancing, isolation, and lockdowns have been the main countermeasures implemented worldwide during the pandemic. Providing eldercare in this context without the required resources is thus a considerable challenge. The inability to provide eldercare as well as insufficiencies in terms of service providers, space, and materials during the pandemic have exacerbated health problems for many older adults and increased the risk of death (Verbruggen 2020). An example of disconnect between service providers and care recipients and their families during the pandemic occurred at the Life Care Centre in Kirkland, Washington, US, in February 2020. Approximately 43 individuals died from COVID-19 at the facility, which was locked down soon after the first confirmed case was reported. The countermeasures to the cluster infection in the community created physical and mental stress and were opposed by the care recipients' families. Similarly, on May 11, 2021, Taiwan's Central Epidemic Command Center (CECC) announced that visits to people staying at hospitals and long-term care facilities would be banned and only one family member would be allowed to enter the facility for accompany older adults or resident. This prevented the spread of the virus yet prevented interaction and connection between older adults and their families, which strongly affected their mental health.

For remote indigenous tribes, a lack of resources has challenged their lifestyles and increased health disparities. During the pandemic, the tribal environment negatively affected older adults' health, making them more vulnerable to COVID-19 and its associated complications, which led to an increase of deaths (Da Silva *et al.* 2021; Williams and Mattos 2021). Manderson and Levine (2000) studied a tribe in South Africa and revealed that isolation and distance from family members created loneliness and fear among the elder members, some of whom died because of a lack of proper care. In some indigenous Mexican tribes, the community environment, lack of water, language barriers, and pollution had threatened members' health and the tribal environment before the pandemic began. After the pandemic began, cultural traditions, such as group living and sharing daily necessities, facilitated the spread of COVID-19 (De León-Martínez *et al.* 2020). In another case, Kaplan *et al.* (2020) discovered that, in Bolivia, where half the population is indigenous, tribal sovereignty is crucial because it allows tribes to make decisions about food production and other needs. Their study indicates that strong food-production capacities may have accelerated recovery and prevented deaths during quarantine.

Furthermore, Suratana *et al.* (2021) conducted qualitative interviews to examine how tribal villagers in Mae Fah Laung, Chiang Rai Province, Thailand, adapted to COVID-19. Their study revealed that the adaptation process was comprised of six phases: (1) feeling shock due to a lack of experience, (2) seeking help from health agencies and other groups, (3) considering adopting mainland Thailand's lockdown policy, (4) complying with preventative and control measures, (5) reducing stress and following new norms, and (6) solving problems at home and elsewhere. Through these steps, the tribe began to gradually adapt to the pandemic.

In summary, the most significant effects of the pandemic on the tribal elders in Taitung County were the suspension of social events and feeling disconnected from their community. Therefore, providing

social participation channels was essential. Another challenge caused by the pandemic was the use of digital technological tools. Many of the challenges of isolation were overcome through the use of technology; however, most of the elders were not familiar with the technological tools. To construct a social environment that could coexist with COVID-19 viruses, prevent isolation, and create an age-friendly environment, elders should be familiarized with technological tools. Therefore, it is important to ensure that communities are not isolated, can gather safely, and are not deprived of privacy. National governments should reconsider which spaces are conducive to living and working in order to promote improved well-being during public-health crises and enable interaction without technology (Suzuki 2020).

Conclusion

In this report, I have outlined how care providers in Taitung County, Taiwan, changed their way of working to provide health services to remote indigenous older adults during the COVID-19 pandemic. This included translating countermeasures and regulations into their tribe's language, creating posters with information written in large fonts, bringing bowling and ball equipment to elders' homes to play games with them, helping them to maintain daily health and physical activities, and teaching older adults how to use digital technologies and COVID-19 rapid antigen tests. All these approaches served one central purpose: to keep older indigenous adults connected to their family members, friends, neighbours and their communities, which had a strong positive effect on their mental health.

History suggests that COVID-19 is not the first nor will it be the last virus to threaten humans. However, the mutation of the virus represents an opportunity to determine how to prevent loss of life while continuing to maintain health, work, and engage in leisure and social activities. In some rural tribes, several aspects of the traditional culture have facilitated the spread of COVID-19 (De León-Martínez *et al.* 2020). However, as I have discussed here, considering the local culture and using tribal wisdom to educate elders about infection prevention can help them combat viral threats. Humans must learn and improve from their experiences to create systems equipped to face the future. Amid global change, such as that caused by the COVID-19 pandemic, it is necessary for societies to create and support age-friendly environments.

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