# Indigenous Linguistic and Cultural Practices as Mediated Resources to Fight Against the Covid-19 Pandemic: A Case of a Zhuang-Centered Border Town in China

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#### **Abstract**

Previous studies on multilingual crisis communication seem to center on developed countries or cosmopolitan cities. Our knowledge about how linguistic minorities get access to health-related information in peripheral regions remains under-explored in the existing scholarship. Given that China's border towns are peripherally located and inhabited multilingual and multicultural populations, it is of significance to understand how linguistic minorities overcome their communication barriers in times of crisis. Adopting Emergency Language Services (ELS) (Li, Rao, Zhang, & Li, 2020) as a theoretical framework, this study makes a six-month ethnographic study with Zhuang people on how they mobilize their linguistic and cultural resources to get access to health-related information during the Covid-19 pandemic. Multiple types of data were collected from six Zhuang people of diverse backgrounds in age, gender, education and language through semi-structured interviews, participant observation, field notes and online interactions. Findings demonstrate that traditional Zhuang folk arts including Zhuang Tianqin Plucked Instrument, Zhuang Folk Songs, and Zhuang Clappers constitute important resources to facilitate indigenous Zhuang people's understanding of public health information. The study also finds that Zhuang people have actively participated in fighting against the Covid-19 pandemic together with the local government by the revitalization of Zhuang language and cultural practices. This study can shed lights on including the indigenous linguistic and cultural resources as legitimate construct to participate in crisis communication and response to local and government policies.

Keywords: Emergency Language Service, China-and-Vietnam borderland, Covid-19, folk arts

#### 1. Introduction

The large-scale exclusion of linguistic minorities from timely high-quality information is one of characteristics in global public health communication (Piller, Zhang, & Li, 2020). Language emergency service has been concerned by sociolinguistics at home and abroad. Emergency language services refer to language products, language technologies, or language rescue operations for prevention, monitoring, rapid disposal, recovery and reconstruction of major natural disasters or public crises (Wang, Ren, & Sun, 2020). There is little research on the emergency language service in the borderland between China and Vietnam. The demographic and social structure of indigenous and foreign residents are different from central and metropolitan cities. Based on the theory of emergency language services, this paper makes an in-depth study of the subject and proposes to fight against Covid-19 pandemic with folk arts and Zhuang language. It takes Zhuang villages in the China-and-Vietnam borderland as the investigation site and conducts a 6-month language-related ethnographic study, mainly in the form of semi-structured interviews, participant observation and research, field notes and online research. The study found that when Zhuang villages in the China-and-Vietnam borderland were coping with the crisis, people spontaneously organized anti-epidemic groups from top to bottom, using local multi-ethnic languages and various art forms to effectively fight the epidemic, which played certain roles in enriching the current emergency linguistics theories.

# 2. Research Status of ELS and the Folk Arts of Zhuang People

Emergency language services include first aid translation of Chinese and foreign languages, minority languages, dialects, sign languages of the disabled, language software development for disaster relief and disaster information dissemination. As an important part of language service, emergency language service itself is a

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complete system, covering many aspects such as emergency language infrastructure, emergency language planning, emergency language ability, emergency language talents and emergency language discipline (Wang, Ren, & Sun, 2020). Language services are generally divided into narrow sense and broad sense. The narrow sense of language services mainly refers to translation and localization services (Yuan, 2014), Yuming Li (2014) pointed that Language service in a broad sense is a service that uses language and language derivatives to meet social needs.

#### 2.1 Research Status of Emergency Language Service at Home and Abroad

Studies have found that most ethnic minorities, immigrants, students, foreign workers and other groups face many challenges due to language barriers when major natural disasters or public crisis events occur (Teo, Goonetilleke, Deilami, Ahankoob, & Lawie, 2019). Foreign academic research on disaster prevention and communication centering on the role of disaster multilingual communication and translation mainly involves the following three aspects (Wang, Ren, & Sun, 2020): the negative consequences caused by the failure of crisis communication; the emergency responsible department encountered multiple language barriers in the process of information release and warning; translation playing an important role in disaster information release and early warning. Language vulnerable groups are more likely to be injured in the event of a disaster (Uekusa, 2019). When major natural disasters or public crisis events occur, these vulnerable language groups are physically and psychologically damaged far more seriously than others. It is precisely so that the problem of solving language barriers can be solved in time to reduce the impact of disasters on vulnerable language groups.

Multilingualism in China's public sphere has captured great attention shortly after the coronavirus was officially confirmed on 20th of January 2020 (Li et al., 2020). China has invested great efforts into mobilizing mass participation in health communication via delivering timely multilingual information which is "critical to the success of prevention and containment efforts" (Piller, 2020, p. 14). Wang Hui (2020) proposed that emergency language ability is an important manifestation of the modernization of social governance ability. The COVID-19 epidemic has had different degrees of impact on all walks of life. Under the influence of the epidemic, the economies of various countries have suffered a lot, and tourism, catering, transportation, entertainment, and other industries have been greatly affected. A large number of catering enterprises closed down; various industries suffered an unprecedented blow.

#### 2.2 The Development of Art in Borderland in Ethnic Areas

#### 2.2.1 Zhuang Tiangin Plucked Instrument

China is a multi-ethnic and multicultural country with rich historical and cultural heritage. In the long process of development, it has formed different kinds of clothing, diets, music, cultures and languages among different ethnic groups. Tianqin Plucked Instrument, which is called "ding" in Zhuang language, is one of the oldest plucked instruments of the Zhuang nationality in Wenshan city, Yunnan province and southwestern Guangxi, which possesses long history of more than two thousand years. Tianqin is used for ritual activities, weddings, and daily entertainment activities of the local Zhuang people. In the local society, Zhuang people will also ask the player to play the Tianqin Plucked Instrument to pray for health and safety during the period when women give birth to a child, when it comes to the full moon, marriage and birthday celebrations (Huang, 2020). It can accompany songs and dances and deeply affect the Zhuang people's way of life psychologically and ideologically.

As one of the unique representatives in the traditional cultural system of Zhuang people, Tianqin culture is one of the excellent intangible cultural heritages of Zhuang people. Li Yan (2014) points out that Tianqin integrates spiritual culture and material culture including musical instruments, music, lyrics, playing and singing, dance, performance and so on. It has high inquiry value in anthropology, sociology, folklore, art, archaeology and religious belief (Li, 2012). Tianqin Plucked Instrument has penetrated all aspects of people's lives.

## 2.2.2 Zhuang Folk Songs

Zhuang people have been fond of and good at singing since ancient times. Zhuang folk songs culture has been spread for thousands of years with its strong vitality. With the development of society, the content of Zhuang folk songs is constantly enriched, including wedding, romance, story, farming narration, puzzles, ask-and-answer of knowledge in regular rhymes. There are many famous folk singers among the Zhuang people. They are known for singing Zhuang folk songs, such as "Liu Sanjie" who is smart, kind, sweet, brave, and good at singing. Liu Sanjie is a folk legendary figure of Zhuang people, deeply loved by Zhuang people. Annual lunar March is one of the grand festivals of Zhuang people to commemorate Liu Sanjie, but also to promote and inherit Zhuang folk songs culture. It is believed that the Zhuang folk songs culture reflects the Zhuang people's beliefs and attitude

towards life, marriage and family. Since the content of Zhuang folk songs covers all aspects of Zhuang people's life, Zhuang folk songs carry their language, culture, thought, wisdom, and history.

# 3. Methodology

Based on the theory of emergency language services, the research conducts a 6-month language-related ethnography in Zhuang villages in the China-and-Vietnam borderland where is the investigation site mainly in the form of semi-structured interviews, participant observation and research, field notes and online research. There are six Zhuang villagers with different educational degrees and linguistic backgrounds interviewed, and the basic information about them is put in the below table (Table 1). These six Zhuang people are interviewed online and at the same time offline. The study's online investigation is based on some popular social media in China, including TikTok, WeChat, QQ etc., among which Tik Tok works as one of most popular applications involving short videos in China and WeChat runs as one of popular social media applications, too.

Table	I. The	basic	information	about	S1X	participants	as	ınterviewees
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Participants	Gender	Age	Educational degree	Language competence			
P1	Female	57	Uneducated	Zhuang language, Han dialect, Putonghua			
P2	Male	59	Graduate from primary school	Zhuang language, Han dialect, Putonghua			
P3	Female	49	The 1st grader	Zhuang language, Putonghua, Han dialect			
P4	Male	26	Gradute from high school	Zhuang language, Putonghua, Han dialect,			
P5	Female	22	Undergraduate from a university	Zhuang language, Putonghua, Han dialect, English			
P6	Male	18	Undergraduate from a university	Zhuang language, Putonghua, Han dialect, English			

Their language competence is written in the table in the order from high proficiency to low one. For instance, P1, a woman at the age of 57, has accepted zero education and masters Zhuang language most. However, P1 has lower proficiency in Han dialect (the variety of national language) and the lowest proficiency in Putonghua (the national language).

# 4. Finding and Discussion

# 4.1 Tianqin Plucked Instrument Working as an Effective Form of Art to Fight Against the Covid-19 Pandemic

Tianqin Plucked Instrument has accumulated rich and profound historical and cultural connotations for thousands of years, reflecting the unique cultural achievements of the Zhuang people for generations. Tianqin is one of the oldest traditional folk musical instruments of Zhuang people, and it is a bond of spiritual exchange among the Zhuang people. Tianqin players are respected by the local people and have a certain prestige. When the Covid-19 pandemic hit the China-Vietnam borderland in the southwest of China, Tianqin turned into a unique art form to fight against Covid-19 pandemic with its unique artistic charm and power.

By combining the anti-epidemic content with the attractive music and melody of Tianqin Plucked Instrument, the players excellently played and sang. The video was recorded and posted online (see Figure 1) during the Covid-19, which was appreciated by and was praised by a great deal of Zhuang people, as well as by Han compatriots and other ethnic minorities compatriots.



Figure 1. Zhuang Tianqin Plucked Instrument was played by Zhuang people

In the picture above (Figure 1), Zhuang people from Longzhou city, Guangxi Province, wore Zhuang costumes. They all held the instrument Tianqin in their hands and sang about Covid-19 pandemic prevention while playing it accompanied by appealing and touching melodies. They sang: "wear a mask before going out; washing hands diligently cannot be overlooked; a vaccine can prevent health from virus; don't go to the places where are gathered with the crowd; do not believe rumors and do not panic since authoritative news is the most reliable; people having ever been to the high risk area should come to register in related communities; do not neglect the

importance of protection of health and the pandemic prevention knowledge must be remembered". The above content involved six important information points of anti-epidemic. First, the necessary pandemic prevention knowledge in daily life--wearing masks and washing hands frequently. Second, calling on people to be vaccinated for their own health. Third, telling people not to go to crowded places. Fourth, reminding everyone to believe official authority news, rather than easily to believe rumors from various informal channels. Fifth, calling on everyone to be responsible for themselves and others and thus to register consciously related communities if they come from high-risk areas. Finally, reminding people to pay more attention to the severity of the pandemic and keeping the knowledge of pandemic prevention in mind.

The study managed to find in what way Tianqin Plucked Instrument played its anti-epidemic function. First of all, Tianqin possessed fair-sounding musical tone, gentle and relaxed melody to attract listeners' attention, helping people learn pandemic prevention knowledge in a more relaxed atmosphere. Secondly, the content that was conveyed through the Tianqin was more easily accepted by the Zhuang people themselves. Since Tianqin itself is one of the traditional arts inherited by the Zhuang people for thousands of years, Zhuang people are the people who are most familiar with it. To certain extent, it exists as already a family member or an old friend for the Zhuang people. Countless generations of Zhuang people have been accompanied by this kind of identity of Tiangin. Thirdly, Tiangin is the bond of Zhuang people to communicate with each other, which can help people quickly remember pandemic prevention knowledge. The reason why the Tianqin has been able to spread among the Zhuang people for thousands of years is that the Zhuang people's spiritual and cultural characteristics was embodied in the Tianqin. No matter what ages or what gender they belong to, as long as they can understand the basic content played by Tianqin through attractive melody, they are more likely to remember the content on epidemic prevention knowledge. In daily life, the Zhuang people will listen to and appreciate the Zhuang folk songs sung by people at the same time playing the Tianqin, and memorize the content conveyed by Zhuang folk songs in their deep hearts, and then communicate with family members, friends. This habit and experience of listening to Tianqin and communicating can help Zhuang people remember the contents conveyed by Zhuang folk songs accompanied by Tianqin more easily.

4.2 Zhuang Folk Songs to Bid Farewell to Anti-epidemic Fighters, Strengthening the Unity Among All Ethnic Groups

Zhuang folk Songs are not just simple kinds of songs, but important social and cultural activities of Zhuang people society. Zhuang Folk Songs activities exist in the gathering places for Zhuang people. There are many Zhuang people who participate in the Zhuang Folk Songs activities. They are mainly Zhuang people, including farmers and workers who return to their places from cities they work in during the Spring Festival. Sometimes, Zhuang people will raise money together to hire photographers to record the whole process of Zhuang Folk Songs activities. Zhuang Folk Songs activities are held mainly by participants comprised of men and women who sing against each other as the main way, and the content of songs can contain all aspects of lives of Zhuang people, including wedding, romance, story, farming narration, puzzles, ask-and-answer of knowledge in regular rhymes.

For the Zhuang people, Zhuang Folk Songs activity is one of their cultural symbols and the medium to convey their inner feelings. Zhuang Folk Songs activities are the output form of their language and culture. Anti-epidemic requires not only human, medical equipment and other material supply resources, but also emotional needs. When there were Covid-19 pandemic outbreaks in various places, there was a shortage of medical staff in some areas, so medical staff in hospitals in other areas acted as volunteers to help areas lacking medical resources. Their timely help saved countless patients, and the patients were sincerely grateful for their efforts. When these medical staff left, they expressed their gratitude and blessings by gifting their poetic and emotional Zhuang Folk Songs. The screenshot (Figure 2) below shows the Zhuang villagers in Funing County, Wenshan City of Yunnan Province, in the China-and-Vietnam borderland, sending farewell to anti-epidemic "fighters" with Zhuang Folk Songs.



Figure 2. Zhuang Folk Songs sung by Zhuang people to medical volunteers

As one of the traditional arts of Zhuang people, Zhuang Folk Songs embodied the spirit of anti-epidemic in a unique and novel way, which was a powerful means to resist the Covid-19 pandemic. The title of the screenshot

(Figure 2) is "The Farewell to the Anti-epidemic Fighters Zhuang Folk Songs is Touching". It was sent to Tik Tok in a video way, and people in the comments area were empathizing with it. This also embodied the whole nation's united anti-epidemic spirit--which expressed the great strength of unity of the Chinese people and the hundreds of millions of Chinese uniting as one, uniting to tiding over the special time. The farewell of Zhuang Folk Songs was a special emotional farewell way for Zhuang people to show their respect and gratitude to anti-epidemic fighters. It was a true portrayal of the great anti-epidemic spirit of solidarity and mutual assistance among all ethnic groups in China. For one thing, it strengthened the communication between people in other regions and Zhuang areas, including cultural communication of different ethnic groups, and emotional communication of different ethnic groups.

## 4.3 A Variety of Minority Languages to Fight Against the Covid-19

China has been a multi-ethnic country since ancient times. A total of 56 ethnic groups were officially confirmed by the central government survey statistics, of which the Han population was the main population, and the total population of the other 55 ethnic groups was small, thus they were called ethnic minorities.

## 4.3.1 News Broadcast in Variety of Ethnic Minorities' Languages

Wenshan, located in the borderland of Yunnan Province in the southwest of China, is regarded as the research site, bordering Baise City in Guangxi Province in the east and bordering Vietnam in the south with borderline of 438 km (The overview of Wenshan Zhuang Miao Autonomous Prefecture. http://www.ynws.gov.cn/wsgk.htm). There are 11 ethnic minority groups living in Wenshan, including Han, Zhuang, Miao, Yi, Yao, Hui, Dai, Buyi, Mongolia, Bai and Gelao. The total population of Wenshan is 3.5032 million, of which the Han groups is 1.4879 million, accounting for 42.47 % of the total population. There are 2.0148 million ethnic minorities, accounting for 57.51 % of the total population (the overview of Wenshan Zhuang and Miao Autonomous Prefecture, http://www.ynws.gov.cn/wsgk.htm). Among them, there are 987,600 Zhuang people, accounting for 28.19 % of the total population. Zhuang people mainly distribute in Guangnan, Funing, Yanshan, Qiubei and other counties and cities (the overview of Zhuang people in Wenshan Zhuang and Miao Autonomous Prefecture, http://www.ynws.gov.cn/wsgk/wsgk/sqbz.htm). There are also Zhuang people in other places.

In this area with a large proportion of ethnic minority population and a great deal of ethnic minority group types, the language types are rich and complex, and thus there are extremely rich language resources. When major natural disasters or public crisis events occur, the ability to obtain information is very pivotal. People who obtain and master information can make the necessary response in the face of the crisis, reducing the negative impact of the crisis, and improve prevention capabilities. However, for those who cannot obtain or have no way to obtain information, this could make matters worse. According to the field and network survey of this study, the reasons why those groups who cannot obtain information include the following reasons. First, low or zero educational degree, having low proficiency in Zhuang literacy, neither Chinese in spoken or writing form (P1 interviewer's answer). Second, the old age and the complicated work on weekdays lead to the elderly's non-ideal mastery of modern intelligent tools, resulting that they cannot obtain important information (P2) from the major cumbersome apps of mobile phones. Third, emergency language services need to be more developed, and language service talents need to be expanded. Major information that is mainly spoken in Putonghua and written in Chinese characters or English is selected for transmission. However, in the borderland area such as in Wenshan, when the Covid-19 pandemic broke out, language volunteers were consciously organized from top to bottom to translate real-time news in multiple languages and did a good job in epidemic prevention and control.



Figure 3. News spoken in Miao language



Figure 4. News spoken in Yao language



Figure 5. Telling the story of aid to Hubei in Zhuang language

The study found that during the pandemic prevention period, P1 could not obtain effective or latest news from other channels since she did not have been educated and with low proficiency in Chinese. P3 said that there were

so many apps that made people like her dazzled, and she preferred to using short video social software such as Tik Tok directly. Tik Tok will recommend videos according to their location and preferences to offer the important information they need in time. P1 said that her cultural level was too low to understand Chinese characters and Putonghua. During the Covid-19 pandemic, the news about where to go or where should not go was learned through the news broadcast in Zhuang language in Tik Tok. P1 also added that he would not unload or delete Tik Tok because he could understand the news broadcast in Zhuang language and get much important information in Tik Tok.

4.3.2 Conveying Pandemic Prevention and Control Information Through Zhuang Clappers and Zhuang Jingling Rhymes

The clapper of Zhuang people is one of the traditional arts of Zhuang people. It is a traditional rap art. Anti-pandemic content is accompanied by the clapper with strong rhythm in Zhuang language, which is a new form of anti-epidemic. Jingling rhymes is a common language phenomenon, which is very popular in various places. The sentences are uneven in length, usually appearing in the oral form, and they are read smoothly. Jingling rhymes has the following characteristics: easy to speak, pleasant to hear, good to remember, and humorous, vivid. When clappers and jingling rhyme are combined with Zhuang language or other ethnic minority languages, they will become powerful ways to fight crises. The following figures are Zhuang clappers and Zhuang Jingling rhymes speaking content about Covid-19 prevention.





Figure 6. Zhuang clappers in Zhuang language

Figure 7. Zhuang Jingling Rhymes

Figure 6 is a screenshot of a short video playing Zhuang clappers, which is used by the chief of a Zhuang village in the China-and-Vietnam borderland to send to the village WeChat group. It's one of the videos that the village chief forwarded to WeChat group, which represents the local people's approbation of this form of artistic anti-epidemic. The original video in Figure 6 tells the severity of the epidemic situation with clappers, praising the hard work of doctors and the help of the government, and calls on everyone not to panic and unite to fight against the awful pandemic. The original video in Figure 7 uses Jingling rhymes in Zhuang language to remind people clearly that the Spring Festival is coming, and people should take good self-protection measures. Short videos of Zhuang clapper's version and rhyming similar to Figure 6 and 7 spread widely on the Internet. P4 was usually busy at work, but he expressed that after watching such entertaining short videos, he would be very interested in watching them, and he can easily remember the content of these videos. P5 said that when the Covid-19 was severe, the school would occasionally paused classes or sometimes thus she had to stay at home alone, which inevitably affected her own mood. However, she often played Tik Tok where she would see anti-epidemic videos related to her own ethnic group. She found these kinds of videos were very interesting, and she could calm down to learn the contents since the language is her own ethnic minority groups, which made her feel the great effort government were making in order to make sure that all ethnic minority unite against crisis. P5 added that when she finished learning these things, I would have many feelings, such as having an optimistic attitude. It can be seen from various language videos that there were efforts from top to bottom in the face of the Covid-19 pandemic, and people believed that the Covid-19 could be overcome by uniting and working together. Further, P5 also said that it was comforting and touching to see one's own language appearing in such a novel way on popular short video software, because it reflected the importance the country attaches to the culture of ethnic minorities.

To sum up the above points, firstly, it is an effective and helpful way to convey the information Zhuang people, as one of the linguistic vulnerable groups, need in the form known to themselves – Zhuang clapper and Jingling rhymes in Zhuang language. Secondly, these videos with ethnic minority traditional arts combined with ethnic minority languages are recognized on the Internet, which reflects the government care for people in ethnic minority areas and is conducive to consolidating the security of border areas.

#### 5. Conclusion

In this study, a six-month linguistic ethnographic study focused on Zhuang villages along the China-and-Vietnam borderland was conducted, based on the theory of emergency language services. It takes Zhuang villages in the China-and-Vietnam borderland as the investigation site mainly in the form of participant observation and research, semi-structured interviews, field notes and online research. The results of this study show that using local multi-ethnic languages and various art forms can work well to effectively fight against the Covid-19 pandemic, which played certain roles in helping Zhuang people and other ethnic minority groups to get effectively pivotal information and maintaining stability, security, and development of the China-and-Vietnam borderland, enriching the current emergency linguistics theories.

Tianqin players use Tianqin Plucked Instrument as an accompaniment to sing out the information needed by the Zhuang people who are one of the linguistic vulnerable groups in time of crisis. Using the beautiful melody of Tianqin combined with the Zhuang language of the player is the main way to transmit information. As one of the familiar traditional arts inherited by Zhuang people for thousands of years, Tianqin has become an effective and high-quality way for Zhuang people to obtain effective and high-quality information by taking advantage of its own virtues. It is a novel and unique way to effectively fight the epidemic in the form of art. The characteristics of Tianqin and its role in Covid-19 pandemic prevention can be summarized as follows: to begin with, Tianqin's fair-sounding musical tone and gentle melody not only can attract listeners attention but also can help people learn epidemic prevention knowledge well in a more relaxed atmosphere. Furthermore, the content conveyed through the Tianqin is more easily accepted by the Zhuang people themselves considering that Tianqin itself is one of the traditional arts inherited by the Zhuang people for thousands of years, existing as already a family member or an old friend for the Zhuang people. Additionally, Tianqin is an important bond of Zhuang people to communicate with each other, which can help people quickly remember epidemic prevention knowledge.

Zhuang people used Zhuang folk songs to farewell the anti-epidemic fighters, which reflected the great anti-epidemic spirit and emphasized the importance of national unity. The great anti-epidemic spirit of the whole country - the great unity of the Chinese people--is vividly demonstrated through the Zhuang folk songs. The lack of medical human resources in one place and the help from another place is an effective allocation of human resources in times of crisis and a manifestation of the joint efforts of all ethnic groups to fight the Covid-19 pandemic. When the crisis is ended, these medical volunteers left given with the gratitude and blessings of those Zhuang people who have been helped. Their gratitude and blessings are carried by their traditional songs, deeply imprinted in the hearts of the medical volunteers, which is a sincere emotional exchange.

The use of multiple ethnic minority groups' languages to fight against the Covid-19 pandemic is in line with the language needs of people in ethnic minority gathering areas and is also a necessary measure to consolidate ethnic minority groups in border areas. In a border area where there are more than half of the population of ethnic minorities (2.0148 million ethnic minorities, accounting for 57.51 % of the total population) and 11 native ethnic groups such as Han, Zhuang, Miao, Yi, Yao, Hui, Dai, Buyi, Mongolia, Bai, Gelao etc., when the crisis occurs, the challenges caused by language barriers are unimaginable for people in the developed regions of the central and eastern regions. From top to bottom, the grass-roots organizations have made their own efforts to produce a variety of news themes about pandemic prevention in multiple ethnic minority language such as Zhuang language version of Clapper on the epidemic prevention and Jingling rhymes in Zhuang language. These novel art form to fight Covid-19 online and offline were widely recognized and loved.

In a word, anti-epidemic with art and with minority languages should occupy a place in multilingual crisis communication and should not be ignored. Both are unique and novel measures to meet the information needs of linguistic vulnerable groups, reducing the impact of disasters on them, and consolidating security in the China-and-Vietnam borderland.

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#### **Authors contributions**

Miss Luo was responsible for study design and revising. Miss Lu was responsible for data collection and drafted the manuscript and Miss Luo revised it. All authors read and approved the final manuscript. In this paragraph, also explain any special agreements concerning authorship, such as if authors contributed equally to the study.

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No additional data are available.

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