



**PATHWAYS OF INEQUALITY IN MATERNAL AND
UNDER-FIVE CHILD MORTALITY RATES AMONG
ETHNIC MINORITY COMMUNITIES IN VIETNAM**

BY

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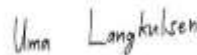
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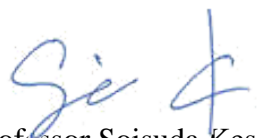
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Independent study Title	PATHWAYS OF INEQUALITY IN MATERNAL AND UNDER-FIVE CHILD MORTALITY RATES AMONG ETHNIC MINORITY COMMUNITIES IN VIETNAM
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ABSTRACT

Background: Over the past decades, most ethnic minority groups in Vietnam have been excluded from the processes of making significant progress in maternal and child mortality, maternal health, and gender equality indicators across the country. The maternal mortality rate of ethnic minority women was significantly higher than this national average rate, with 100 to 150 compared with 46 deaths per 100.000 live births. The under-five mortality rate among ethnic minority groups was 3.5 times higher than for the Kinh people. In addition, infant mortality and stillbirth were popularly reported in mountainous rural areas, where most ethnic minorities lived. In Vietnam, ethnic minorities' access to maternal and child healthcare services remains inequality status.

Objectives: Updates on pathways to vulnerability and inequality in maternal and under-five child mortality rates among ethnic minorities in Vietnam since the previous work subject of Malqvist et al. and extension of analyses for the role of governmental agencies and policy in addressing the gaps and inequalities in healthcare outcomes of ethnic minorities in Vietnam.

Methods: The research was conducted under a purposive narrative literature review method. The electronic databases included Pubmed, The Lancet, Google Scholar, Google, and Thammasat University's electronic library were searched for relevant

studies from 2011 to the present. PRISMA Flowchart was used to select the relevant articles for this review based on inclusion and exclusion criteria.

Results: Out of the 91 identified sources, 26 were eligible for analysis in the study. These sources provided relevant data and information on vulnerability and inequalities in maternal and under-five child mortality rates among ethnic minority groups in Vietnam. These inequality pathways occurred at all five levels. Firstly, individual level, including maternal ethnicity, low income, low educational attainment, childbirth at an earlier age, and the tendency to have more children in ethnic minority women. Relationship level: poor economic households, cultural and language barriers such as not knowing the Vietnamese language, and patriarchal structures in ethnic minority communities limited the self-determination right of ethnic minority women in access to and use of health services during pregnancy. Organization level focused on health facilities: Lack of medical equipment and human resources, limited capacity in providing reproductive healthcare services, and managing complications in pregnancy and childbirth. In addition, discrimination based on ethnicity persisted in health facilities leading to obstacles for ethnic minorities to access quality maternity healthcare. Community level: Ethnic minority groups maintained backward traditional practices such as preferring delivery at home, early marriage, or consanguineous marriage, which had increased the risk of complications and maternal and neonatal mortality. Inequalities in accessing antenatal and postnatal care services among ethnic minority mothers and infants, and ethnic minority groups' residence areas in remote and mountainous areas with long distances from health facilities led to difficulties in finding health care. Policy level: Intervention policies and the implementation of universal health coverage lacked cultural adaptation and sensitivity in ethnic minority communities, and overlapping policy frameworks reduced the effectiveness of interventions in improving ethnic minority health outcomes.

Conclusions: Pathways to vulnerability and inequality in maternal and under-five child mortality rates among ethnic minority groups remained in all five levels of individuals, relationships, organizations, communities, and policies. To address these inequalities, the Government of Vietnam needs more strengthening in reforming the health system and implementing intervention programs to ensure equitable access to healthcare services for ethnic minority mothers and children, promoting the process of

poverty reduction and reducing socioeconomic disparities among regions, increasing awareness and health information for the ethnic minority communities in maternal and child healthcare practices during pregnancy and childbirth.

Keywords: Maternal, newborn and child health (MNCH); Maternal and child healthcare; Health outcome; Vulnerability; Inequality pathways; Ethnic minority groups; Vietnam.



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LIST OF ABBREVIATIONS

Symbols/Abbreviations	Terms
ANC	Antenatal Care
ANC4+	Four or more antenatal care
BCC	Behavior Change Communication
CEMA	Committee for Ethnic Minority Affairs
CM	Consanguineous Marriage
CSOs	Civil Society Organizations
EM	Ethnic Minority
EMs	Ethnic Minorities
FP	Family Planning
HCFP	Health Care Fund for the Poor
HICs	High-Income Countries
INGOs	International Non-governmental Organizations
LMICs	Low-and middle-income countries
MDGs	Millennium Development Goals
MNCH	Maternal newborn and child health
MOH	Ministry of Health
NGOs	Non-governmental Organizations
RMNCH	Reproductive, maternal, newborn and child health
SDGs	Sustainable Development Goals
STDs	Sexually Transmitted Diseases
UHC	Universal Health Coverage
UN	United Nations
UNDRIP	The United Nations Declaration on the Rights of Indigenous Peoples
WHO	World Health Organization

GLOSSARY

Key terms	Definition
Inequality	The state of not being equal, especially in status, rights, and opportunities (UN, 2015).
Vulnerability	The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards. (United Nations Office for Disaster Risk Reduction [UNDRR], 2022).
Maternal mortality ratio (MMR)	Defined as the number of maternal deaths during a given time period per 100,000 live births during the same time period (UNICEF, 2021).
Under-five child mortality rate	Refers to the probability of a child dying between birth and exactly 5 years of age, measured per 1000 live births (UNICEF, 2022d).

CHAPTER 1

INTRODUCTION

This chapter provided a background on the global ethnic minority (EM) communities. It also covered the main issues related to health care, specifically maternal and child healthcare issues, as well as maternal and under-five child mortality ratio among EM communities (EMs) in Vietnam; And framed a problem statement to conduct the proposal literature review.

1.1 Background

1.1.1 Health vulnerabilities of indigenous and ethnic minority groups internationally

Indigenous populations are the most vulnerable (Axelsson & Sköld, 2006). More than 476 million indigenous people live in 90 nations worldwide, accounting for 6.2 percent of the total population globally. In this, there are over 5000 separate groups. Estimated, indigenous people speak the majority of the world's 7000 languages. According to United Nations (UN), indigenous individuals have a triple risk of living in extreme poverty compared with their non-indigenous counterparts. Moreover, they use their own language, culture, belief, and knowledge system (UN, 2022a). In some aspects, they are a demographically vulnerable population with significantly high infant and child mortality rates. The results of historical events contributed to the increasing vulnerability of indigenous people more than the majority group in the country (Axelsson & Sköld, 2006). In addition, the health status, mortality rates, and life expectancy of EMs continue to lag in need of urgent concern. A study found that ethnic disparities in health inequality are based on societal elements rather than natural physiological differences (Wang et al., 2020). According to Huang and his partners, ethnic minority groups usually hold worse health and social outcomes than non-ethnic minority peoples globally.

The factors driving health inequalities are complicated and diverse among ethnic and non-ethnic minorities. However, elements involved in employment, income, education, food security, health policies and systems, health behavior, societal policies,

societal structure, and cultural standards claim to have contributed to these social and health inequality outcomes (Huang et al., 2018). In the context of the global pandemic, COVID-19 has highlighted inequality and emphasized the necessity to strengthen activities to control and handle poor health and deprivation of ethnic minority populations. Therefore, these population groups at risk of poor health and high mortality rates need strategies to reduce health inequalities and address their diverse healthcare needs (Raleigh & Holmes, 2021).

1.1.2 Health vulnerabilities of indigenous and ethnic minority groups in Vietnam

Regarding the context of ethnic minority communities in Vietnam, this multi-ethnic nation has 54 ethnic groups. Of those, there are 53 ethnic minorities and account for 14.7% of the total population, with around 96 million across the country. Each ethnic minority group has its traditions, culture, and language. Though The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) had been voted in favor by the Vietnamese government, the government did not admit ethnic minorities as indigenous people. Instead, authorities utilize the term ethnic minority to refer to everyone except the Kinh people (the majority group in Vietnam) with a focus on unity in diversity. As a result, the term indigenous peoples is often replaced by the term ethnic minorities by international organizations when working in Vietnam. All ethnic minorities have Vietnamese nationality, and the Vietnamese constitution recognizes equal rights for all people. Ethnic minority communities have higher poverty rates, especially the rates of multidimensional poverty in the Northern mountainous areas and the Central Highlands, which are more than twice the national average level. The percentage of people without educational certificates in ethnic minority groups is twice as high as that of the Kinh and Hoa people. In addition, the income gap has widened in recent years between ethnic minorities and Kinh and Hoa people (IWGIA, 2022). Over the past decades, the majority of ethnic minority groups in Vietnam have been excluded from the process of significant progress in childhood mortality, maternal health, and gender equality indicators around the country. Meanwhile, the national maternal and under-five child mortality ratios have halved since 1990. According to the last three Vietnamese Censuses, results of data disaggregation found that the total fertility, infant and child mortality ratios of ethnic minorities are significantly higher

than Kinh people (the majority ethnic group), and they are less accessible to maternal healthcare. In Vietnamese mountainous regions, where the majority of ethnic minorities are concentrated, the prevalence of malnutrition and stunting are three times higher than in the more affluent delta provinces. The maternal mortality ratios of ethnic minority women had also significantly higher than that of Kinh women, specifically 316 compared with 81 per 100.000 live births, respectively (McBride et al., 2018).

1.1.3 Maternal and child health policies and programs internationally

Women and children have an important place in societal development. Strategies to advance women's and children's health have been emphasized by the United Nations from 2000 through 2015 in both Millennium Development Goals (MDGs) 4 and 5 and from 2016 through 2030 in Sustainable Development Goal (SDG) 3. Timely access and utilization of maternal and child health (MCH) services are critical to reducing maternal and child mortality rates (Yan et al., 2020). However, every day there is a woman who is died during pregnancy and delivery somewhere around the world. It was equivalent to more than half a million mothers' death in pregnancy and delivery each year, with 99 percent of these cases appearing in developing countries. According to the United Nations Population Fund, disparities in risk of maternal death among high-income countries and low-and middle-income countries (LMICs) are remarkable, the lifetime risk of death in pregnancy and delivery was 1 in 22 in Africa, it was 1 in 120 in Asia, and it was 1 in 7300 in developed countries. Most maternal mortality is preventable, but ensuring SDG 3 aimed to improve maternal health remains a challenge. In particular, in LMICs countries, there are not enough actions and health services to protect maternal and infant health, leading to poorer women receiving less care (UN, 2022b). In 2019, estimated that approximately 2.0 million babies were stillborn at 28 weeks or over, and the global stillbirth ratio was 13.9 stillbirths per 1000 total births (Hug et al., 2019). Most of these dyings could be preventable if more equitable approach to high-quality healthcare services during pregnancy and delivery were obtained (UNFPA, 2017).

1.1.4 Maternal and child health policies and programs in Vietnam

In Vietnam, the access to maternal healthcare services of the EM communities remains unequal status. The ethnic disparity in coverage index levels of maternal and reproductive health interventions is around 25 percentage points between

Tay and other ethnicities. The lowest levels of coverage index below 35 percent are the Ba Na and H'Mong ethnic groups (UNFPA, 2017). Additionally, childbirth in Vietnam remains a risky experience for many women and their children. Limitations and inadequate approaches to health care for pregnancy and childbirth lead to 600 maternal deaths and over 10000 neonatal deaths per year in Vietnam (UNICEF, 2022a). Vietnam had noteworthy advancements in improving reproductive health care for mothers and children. However, neonatal mortality was the highest ratio of under-one mortality accounting for approximately 70 percent total of deaths in under-one children and making up 52 percent total of deaths in under-five children. Studies found that there was a disparity in neonatal mortality ratio among the region and ethnic groups in Vietnam. The death ratio in mountainous rural areas was higher than in urban and plain rural areas from 2 to 2.5 times (UNDPVN, 2022). Children still do not have the best start in life, estimated at approximately 100 under-five child deaths per day of preventable causes. Although ethnic minority communities occupied 15 percent of the total national population, the under-five mortality ratio in the ethnic minorities was 3.5 times higher than for the Kinh majority people. Furthermore, infant mortality and stillbirth are commonly reported in mountainous rural areas where a lot of ethnic minorities are living (UNICEF, 2022a). In rural mountainous regions, many women did not approach basic health care such as pregnancy examination, childbirth support, post-natal care, vaccinations, and access to routine health care and treatment (UNDPVN, 2022).

1.2 Problem Statement:

Vietnam has made significant progress in improving maternal and child health and is also the country that has achieved SDG 3 on reducing maternal and under-five child mortality by 2030. However, inequality of these proportions among ethnic minority groups in Vietnam remains a matter of concern and challenge for the Vietnamese government. Current evidence shows that although the national average maternal mortality rate has fallen to 46 per 100000 live births, it remains high from 100 to 150 maternal deaths per 100000 live births in mountainous areas and ethnic minorities regions, specifically in the Northern Midlands and Mountains, and the Central Highlands (UNFPA, 2021). Additionally, The national average under-five mortality rate was 22.3

per 1000 live births. Meanwhile, in Dien Bien and Kon Tum Provinces (two mountainous provinces have the majority of ethnic minorities living), this rate was 45.5 and 50.2 per 1000 live births, respectively (UNICEF, 2022c).

Therefore, a clear understanding and a detailed view of the factors as well as pathways leading to vulnerability and inequalities in health outcomes in this vulnerable population is essential and aims to ensure all people enjoy fair and quality health care services. Our study will describe and analyze the pathways to inequality in maternal and under-five child mortality rates among ethnic minorities in Vietnam. Furthermore, this study can provide potential approaches for interventions to enhance the quality of life and health care of pregnant women and children who live in mountains or remote sites of ethnic minority populations, as well as a decreased vulnerability in these groups.



CHAPTER 2

PURPOSE AND DESIGN

Based on the problem statements mentioned in Chapter 1. This chapter described the research purpose from which to formulate the research question and identify research objectives. All of these were summarized in a conceptual framework to guide the implementation of this research.

2.1 Study purpose:

This research aims to review and describes the pathways of vulnerability and inequality in maternal and under-five child mortality among EMs in Vietnam. Besides this, the results from this research will provide more information for policymakers, healthcare providers, researchers, or international organizations such as UN agencies, INGOs, and NGOs to have a more specific view at many levels about the pathways and factors that cause disadvantages and inequalities in the enjoyment of healthcare services for ethnic minority women and children in Vietnam.

On the other hand, the findings and recommendations from this research will serve as a reference for studies, projects, or strategies related to the health issues of Vietnamese ethnic minorities in the future. Moreover, based on the results of this research, we can continue to carry out further studies focusing on specific solutions for each pathway, each level of causes of inequalities, and gaps in the health outcomes of ethnic minority communities.

2.2 Inquiry question

What are the pathways of inequalities to maternal and under-five child mortality rates among ethnic minority communities of Vietnam?

2.3 Study objectives

Regarding the research question constructed above, to answer and clarify this question, this research will address the following two specific objectives:

Objective 1

To update the previous work subject of Malqvist et al (Malqvist et al., 2013a) on pathways to vulnerability and inequality in maternal and under-five child mortality rates among ethnic minorities in Vietnam, which was based on data up until 2011, for the situation up until 2022.

Sub-objectives for objective 1 will be

Sub-objective 1.1 To summarize the situation of the pathways to vulnerability and inequality in maternal and under-five child mortality rates among EMs at the time of the Malqvist et al study using the conceptual framework described below (based on data up until 2011).

Sub-objective 1.2 To identify and review studies and data related to progress in addressing inequalities in maternal and under-five child mortality rates among ethnic minorities in Vietnam since the study of Malqvist et al and to summarize the current situation using the conceptual framework described below (based on data from 2011 to 2022).

Objective 2

To extend the analysis of the role of governmental agencies and policy in addressing the gaps and inequalities in healthcare outcomes of ethnic minorities in Vietnam.

Sub-objectives for objective 2 will be

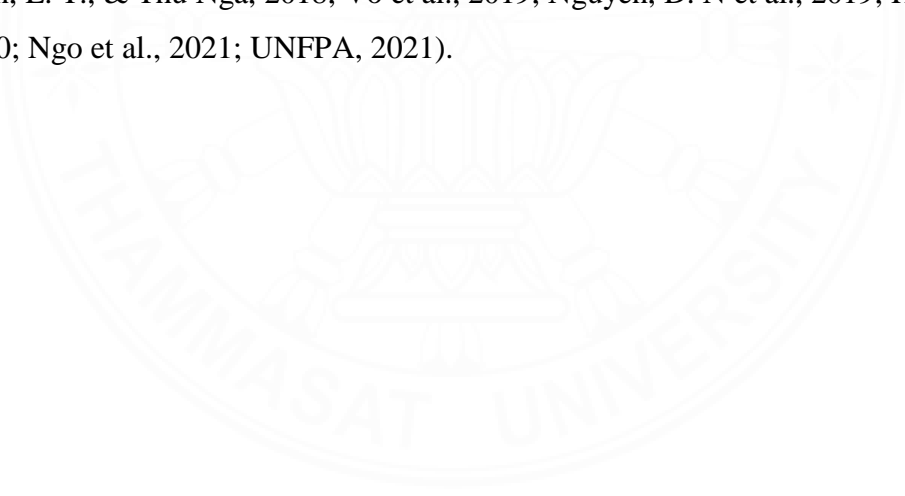
Sub-objective 2.1 To summarize international guidelines and examples of the best practices.

Sub-objective 2.2 To compare examples of activities in Vietnam with examples of best practices and also describe how Vietnam government responses have developed since Malqvist et al study.

Sub-objective 2.3 To summarize lessons and recommendations from the field about future strategies to address inequalities in maternal and under-five child mortality rates among ethnic minorities in Vietnam.

2.4 Conceptual Framework:

This study formulated and developed the socio-ecological problem framework. It performed as a foundation for this study and was summarized in Figure 1 with five levels of the problem framework model. This model visually illustrated the levels of individuals, relationships, organizations, communities, and policies. This problem framework reflected what we had from research on existing issues that were considered contributing factors to inequality in maternal and under-five child mortality rates among ethnic minorities in Vietnam (ADB, 2010; Hung et al., 2010; Målqvist et al., 2013a; Målqvist et al., 2013b; UN WOMEN, 2015; Lee et al., 2016; McBride et al., 2018a; Kien, L. T., & Thu Nga, 2018; Vo et al., 2019; Nguyen, D. N et al., 2019; Huong et al., 2020; Ngo et al., 2021; UNFPA, 2021).



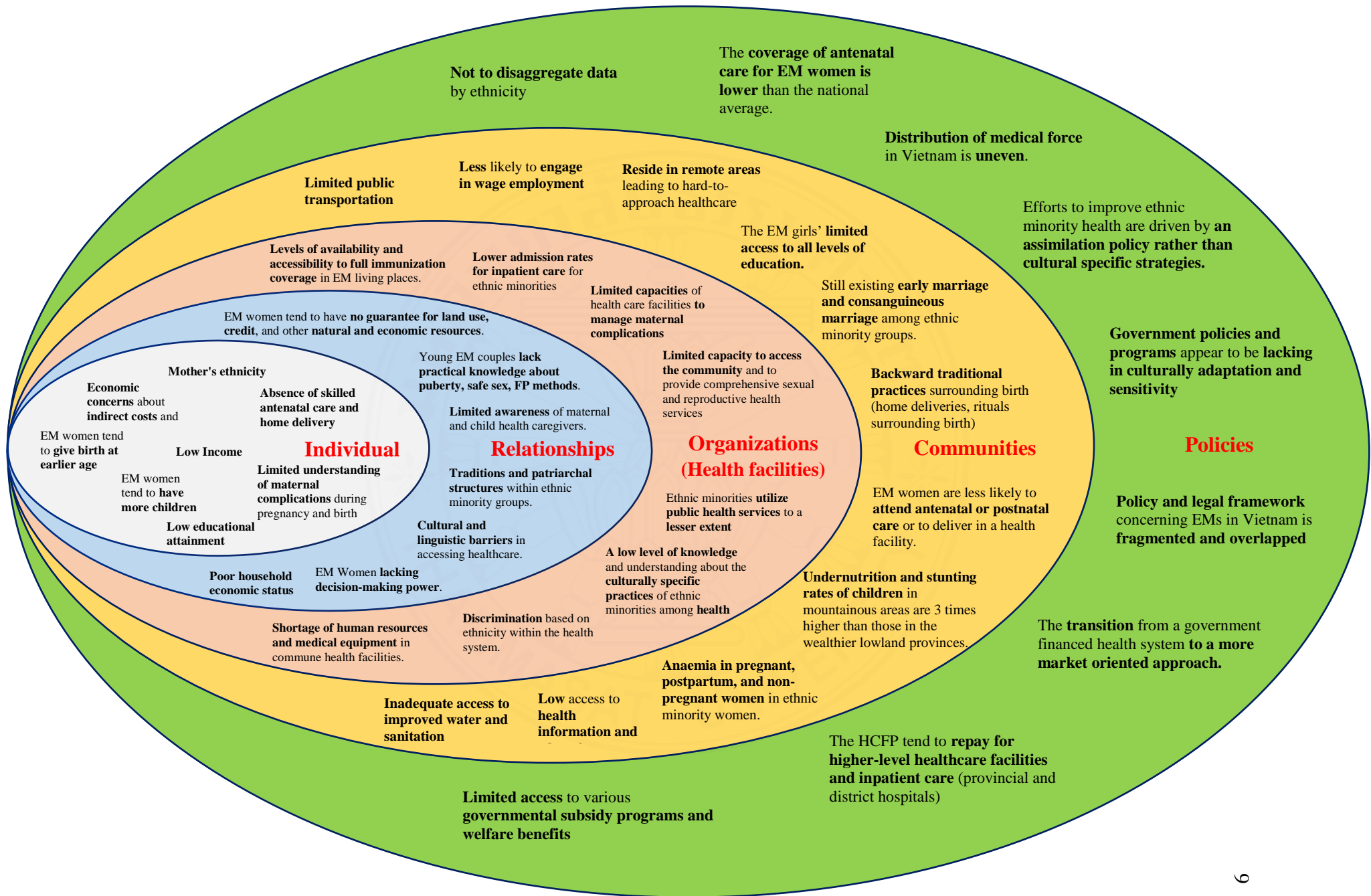


Figure 2.1 The social-ecological problem framework in maternal and under-five child healthcare of ethnic minorities in Vietnam. Formulated and adapted from the social-ecological model of the health of Mcleroy et al (Mcleroy et al., 1988).

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Study design:

The study was conducted under a purposive narrative literature review method. Document types and purposes in the analysis were described in Table 3.1

Using mixed method studies with both quantitative and qualitative data for analysis study. Regarding quantitative, the study used data from correlational, descriptive studies, and quantitative secondary data analysis to explain the association between the inequality pathways and disparities of maternal and child health as well as mortality rates in these population groups. For qualitative, the study used sources related to culture, and awareness to understand in terms of policies and interventions for inequality in the mortality rates of mothers and children under five years between regions and ethnicities.

3.1.1 Data Sources:

Based on the electronic databases (Pubmed, The Lancet, Google, Google Scholar, and Thammasat University's electronic library), the relevant studies published from 2011 to the present were searched and utilized for this study. Simultaneously, PRISMA Flowchart (Figure 4.1) was utilized to select the sources following inclusion and exclusion criteria. A data extraction matrix was created for research purposes and attached as an appendix. In addition, research journals and public access documents from global organizations (World Health Organization, United Nations Organizations, UNFPA, UNDP, UNICEF, OHCHR, World Bank, USAID, OECD, CARE international), international non-governmental organizations, and governmental organizations concerning maternal and child healthcare and their impacts on the health outcome of women and children in the context of Vietnam.

3.1.2 Search Strategy:

The Boolean search technique was utilized to create search strings for literature queries for this study. Specifically, applying the keywords and operators "OR", "AND", and "NOT" for search strings. For example:

- 1) Maternal, newborn and child health AND Ethnic minorities AND Vietnam.
- 2) Maternal mortality OR Under-five child mortality AND Ethnic minorities AND Vietnam.
- 3) Inequality AND Healthcare AND Ethnic minorities AND Vietnam.
- 4) Ethnic minorities AND (Policy OR Law) AND Healthcare AND Vietnam.

3.1.3 Data analysis:

Our research developed a data analysis table (table 1) to describe the data sources for the study, including both qualitative and quantitative data sources. At the same time, it would provide an overview of how the data used for analysis and evaluation in the study corresponded to each specific research objective. Besides that, the data analysis table would ensure answering and clarifying each constructed objective in this study.

Table 3.1 How to use data and information for research

Objectives	Data sources		How the data will be used
	Qualitative data	Quantitative data	
Objective 1: To update the previous work subject of Malqvist et al (Malqvist et al., 2013a) on pathways to vulnerability and inequality in maternal and under-five child mortality rates among ethnic minorities in Vietnam, which was based on data up until 2011, for the situation up until 2022.			
Sub-objective 1.1: To summarize the situation of the pathways to vulnerability and inequality in maternal and under-five child mortality rates among EMs at the time of the Malqvist et al study using the conceptual framework described below	<ul style="list-style-type: none"> - Academic journal articles - Grey literature - Reports of Vietnam's Government - Reports of international agencies published by agencies such as 	<ul style="list-style-type: none"> - Academic journal articles - Reports of Vietnam's Government 	<ul style="list-style-type: none"> - Data comparison received in different literature. - Analytical interpretation to clarify the factors leading to inequality in health outcomes of EM mothers and children at five levels from individual to policy. - Compared and described the inequality of data related

Table 3.1 How to use data and information for research (continue)

Objectives	Data sources		How the data will be used
	Qualitative data	Quantitative data	
(based on data up until 2011).	UN, UNICEF, UNDP, WB, WHO., etc.		to maternal and child health among ethnic minority groups.
Sub-objective 1.2: To identify and review studies and data related to progress in addressing inequalities in maternal and under-five child mortality rates among ethnic minorities in Vietnam since study of Malqvist et al and to summarize the current situation using the conceptual framework described (based on data from 2011 to 2022).	- Academic journal articles - Grey literature - Reports of Vietnam's Government - Reports of international agencies published by agencies such as UN, UNICEF, UNDP, WB, WHO., etc.	- Academic journal articles - Reports of Vietnam's Government - Reports of international agencies published by agencies such as UN, UNICEF, UNDP, WB, WHO., etc.	- Compared the rates of access to maternal health care before birth (Antenatal Care) and care for mothers and children after birth (Postpartum Care). - Analyzed data on interventions and investments in EM communities of government, locality, governmental organizations, as well as NGOs.
Objective 2: To extend the analysis of the role of governmental agencies and policy in addressing the gaps and inequalities in healthcare outcomes of ethnic minorities in Vietnam.			
Sub-objective 2.1: To summarize international guidelines and examples of the best practices.	- Grey literature - Reports of international agencies published by agencies such as UN, UNICEF, UNDP, WB, WHO., etc.	- Grey literature - Reports of international agencies published by agencies such as UN, UNICEF, UNDP, WB, WHO., etc.	- Described international guidelines in promoting the role of government in addressing inequality between ethnic groups. - Used examples to suggest the best practices from countries with similar socioeconomic situations to Vietnam.

Table 3.1 How to use data and information for research (continue)

Objectives	Data sources		How the data will be used
	Qualitative data	Quantitative data	
<p>Sub-objective 2.2: To compare examples of activities in Vietnam with examples of best practices and also describe how Vietnam government responses have developed since Malqvist et al study.</p>	<p>- Academic journal articles</p> <p>- Reports of Vietnam's Government</p> <p>- Reports of international agencies published by agencies such as UN, UNICEF, UNDP, WB, WHO., etc.</p>	<p>- Reports of Vietnam's Government</p> <p>- Reports of international agencies published by agencies such as UN, UNICEF, UNDP, WB, WHO., etc.</p>	<p>- Comparison of health expenditure data.</p> <p>- Described the change in infrastructure in the healthcare system, specifically commune health facilities.</p>
<p>Sub-objective 2.3: To summarize lessons and recommendations from the field about future strategies to address inequalities in maternal and under-five child mortality rates among ethnic minorities in Vietnam.</p>	<p>- Academic journal articles</p> <p>- Reports of international agencies published by agencies such as UN, UNICEF, UNDP, WB, WHO., etc.</p>	<p>- Academic journal articles</p> <p>- Reports of international agencies published by agencies such as UN, UNICEF, UNDP, WB, WHO., etc.</p>	<p>- Described lessons presented by many studies related to solving inequalities in maternal and child healthcare among EMs.</p> <p>- To identify the potential approaches to address inequalities in health outcomes of EM children and women.</p>

3.2 Inclusion and exclusion criteria:

As mentioned in part of the data sources about inclusion and exclusion criteria, this content presented the detailed criteria of inclusion and exclusion criteria. Specifically, inclusion criteria were used to identify which studies were included to analyze in our research. In contrast, exclusion criteria referred to criteria that make a study ineligible to be included in this study.

3.2.1 Inclusion criteria:

The inclusion criteria for the selection of research literature would include:

1) Studies published from 2011 to current in English for full text were available and relevant to review purposes and objectives.

2) Peer-reviewed articles and technical reports provided data and information on assessment/analysis of the current status of reproductive health care for mothers and under-five children among ethnic minority communities in Vietnam.

3) Peer-reviewed articles and technical reports provided data and information on assessment/analysis related to determinant factors leading to maternal and child mortality in pregnant women of ethnic minorities in Vietnam.

4) Peer-reviewed articles and technical reports provided data and information on assessment/analysis of healthcare policies/strategies/programs for mothers and children under 5 years old in the context of Vietnam.

5) Peer-reviewed articles and technical reports provided data and information on discussion/analysis of the approach to addressing inequalities in women's health outcomes in Vietnam or LMICs that had a similar socioeconomic background to Vietnam (e.g. Countries in Southeast Asia).

3.2.2 Exclusion criteria:

Criteria to exclude ineligible materials for use in this study would include:

1) Studies that were unrelated, duplicates, unavailable full texts, and available before 2011.

2) Conference abstracts, editorials, sources only provided contextual and information without correlation to the status of ethnic minority women or children under 5 years old in Vietnam.

3) Conference abstracts, editorials, sources only provided contextual and information without correlation to healthcare policy for mothers and under-five children in ethnic minorities in Vietnam.

4) Conference abstracts, editorials, sources only provided contextual and information without correlation to solutions for addressing the pathways of inequality of maternal mortality and children under five years old in Vietnam.



CHAPTER 4

RESULTS AND DISCUSSION

This chapter presented the findings of this study and analyzed the pathways of vulnerability and inequalities at all five levels, which included individuals, relationships, organizations, communities, and policies for health outcomes of women and under-five children in EM communities. In addition, this chapter also discussed the approaches to address the vulnerability and inequalities that remained in the presented results and analyzed the roles of the government and policies in improving equity in health outcomes for EM communities, specifically women and children.

4.1 Results:

The results of identifying research sources through the databases were interpreted by Prisma Flow Chart.

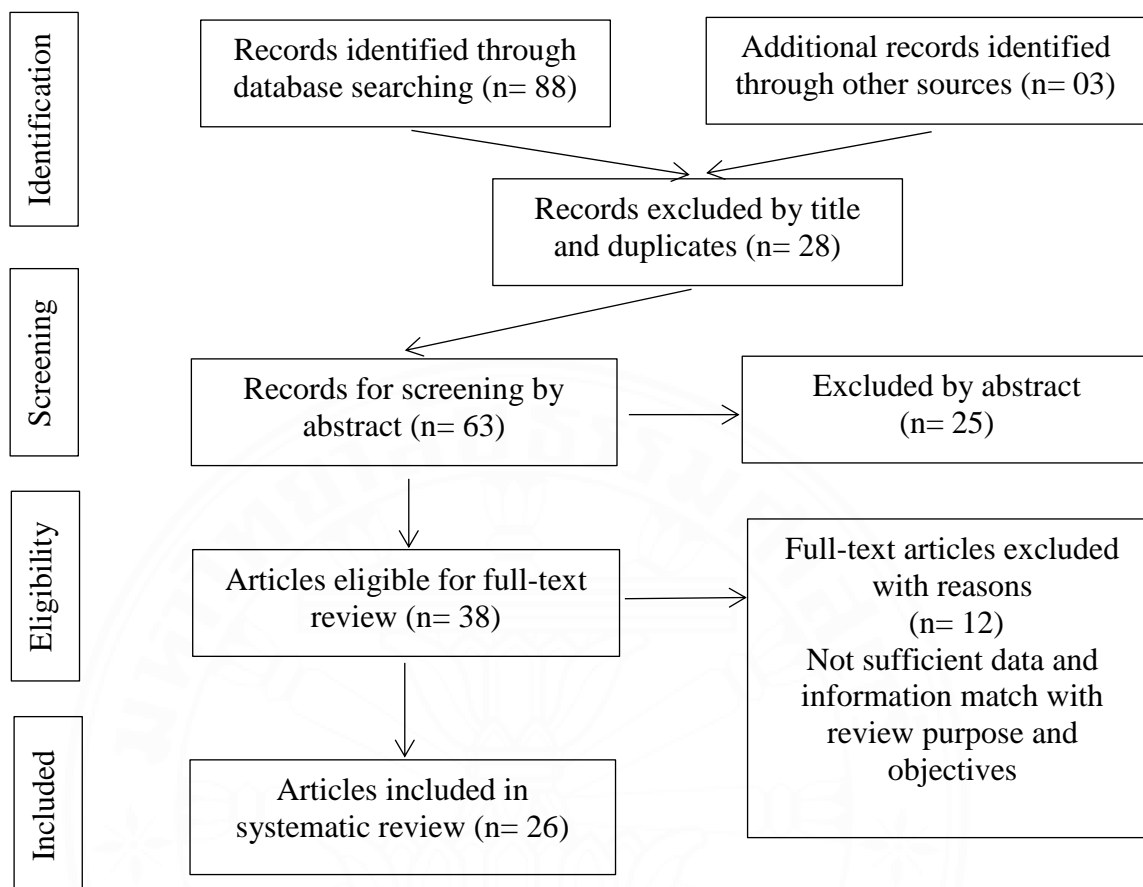


Figure 4.1 PRISMA Flow Chart

Present a summary of the number of documents evaluated and included in our study via the PRISMA flow chart. The total number of documents identified through search databases and other sources was 91 documents. Of these, 28 documents were excluded due to duplication and titles unrelated to the research criteria. Therefore, we were left with 63 documents to screen with abstracts. Then 25 documents were eliminated because the abstract content did not match the inclusion criteria that our study previously developed. Thus, the number of eligible publications for full-text review was 38 articles. As a result, 12 articles were excluded due to insufficient data and information matching with review purpose and objectives. Finally, after a series of reviews and selections, the total number of articles included in our study was 24 different articles, and two reports from the international agency (UN) were published between 2013 and 2022.

The pathways to vulnerability and inequalities in maternal and under-five child mortality rates among EM groups were described and analyzed in this section at all five levels according to the conceptual framework constructed in this research.

4.1.1 Individuals:

The first level determined biological and individual historical factors that raised the likelihood of vulnerability and inequalities in health outcomes of the target group were mothers and children under five years old of ethnic minorities.

(1) Maternal ethnic factor:

Maternal ethnic factor played an important role as a main structural determinant of inequality in healthcare outcomes in Vietnam generally. Specifically, it was often inequality in maternal, neonatal, and child health (Målqvist et al., 2013a; McKinn et al., 2019). Related to factors considered barriers in accessing healthcare services, namely, ethnicity, education, and household economy, they all affected the utilization of antenatal and post-natal healthcare services from skilled medical staff. However, ethnic factors had a more impact than both factor remainder. The studied results found that the risks, including not receiving antenatal care and not being assisted in childbirth by qualified healthcare workers during the delivery phase for EM women were six times higher than the national average level (Loi, 2021). Moreover, researchers have shown that ethnicity was an important factor affecting the low utilization of maternal healthcare and ANC services, as well as related to low ANC coverage and skilled health staff support during childbirth (Ha et al., 2015; Minh et al., 2016; Kien, V. D et al., 2019; Loi, 2021). Kinh/Hoa women groups utilized ANC services 3.0 and 2.6 times higher than EM women in 2011 and 2014, respectively (Kien, V. D et al., 2019). Non-ethnic women were twice as likely to receive four or more antenatal care (ANC4+) services than EM women (Ha et al., 2015). In addition, the rate of postpartum health examinations in newborns was notably related to an ethnic element. In particular, this rate was 4.3 times higher in the Kinh/Hoa ethnic group than in the EM groups (Lam et al., 2019). Neonatal mortality was strongly associated with ethnic minority status, and the risk of neonatal mortality also grew in EM groups compared to the Kinh group (Målqvist et al., 2013a). Furthermore, ethnic minority was the most important risk factor for high neonatal mortality (Lee et al., 2016). Neonatal mortality of EM children was four times higher than the national average level (Dang & Nguyen, 2022). Besides, the child mortality rate

among EM women was 1.6 times higher than that of Kinh women (Lee et al., 2016). Additionally, there was a relation between EM status and malnutrition in children (Målqvist et al., 2013a), and ethnicity was highlighted as a primary factor that exists as inequality in complete immunization of children before one year of age between ethnic minorities and Kinh people (Vo et al., 2019). The intersection of inequality patterns founded on ethnicity and gender grew the excluded and marginalized risk of society for EM women and girls (UN WOMEN, 2015).

(2) Low educational attainment:

The Population and Housing Census in 2019 found the illiteracy rate among EM women at 26.6% was significantly higher than the national average of 5.3%. Hence, EM women faced many disadvantages in interacting with society and limited access to information, knowledge, and the rearing of children (Hoa et al., 2022). Besides, women with illiteracy had an opportunity to access maternal healthcare services that were lower than triple compared to women with finished secondary education (Dang & Nguyen, 2022). Although there were efforts to develop education for EM groups, the gap between Kinh and EM children still exists. The rate of female EM children attending the correct educational level was much lower than that of the Kinh, with 70.7% compared to 83.6%. The rate of EM children of secondary age who attend the correct education level at 72.6% was lower than that of the Kinh children with 83.7%, the difference up to 11.1%. This gap raised to 32.7% at the high school educational level, specifically EMs at 32.3% compared to Kinh people at 65.0% (UN WOMEN, 2017).

In addition, educational attainment was associated with health awareness and promoted healthcare-seeking and protective behaviors (Le et al., 2021). However, educational attainment contributed notably to inequality in postpartum healthcare for newborns. In particular, the children of women with secondary education or over had significantly higher postpartum health checks than children whose mothers only had primary education or below. Among the primary or less, lower secondary, and upper secondary, the percentage of postpartum health checks had a difference of 68.3%, 89.7%, and 96.0%, respectively (Lam et al., 2019). Regarding access to ANC4+ services, mothers with higher educational levels were 1.7 times higher than mothers with lower educational levels. Besides this, mothers with less education often limited knowledge about ANC services and faced disadvantages in accessing ANC services (Ha et al., 2015). Lastly,

there was a relationship between educational attainment and improved water sources and sanitation, and lower access in household heads who were illiterate and had primary and secondary education levels (Huong et al., 2020).

(3) Limited understanding of maternal complications during pregnancy and delivery, lack of skilled ANC and home delivery care:

A study by Ha et al. found that adequate knowledge of complications appearing during pregnancy and the important role of ANC services led to raised accessibility to ANC services. Remarkably, the proportion of ANC4+ services among high-risk pregnant women was not higher than in low-risk pregnancies, which could be a high-risk group of pregnant women not realizing these risks (Ha et al., 2015). The results of qualitative research showed that EM women often sought healthcare services when they experienced complications during pregnancy, and antenatal care would be nonessential if there were no complications (McKinn et al., 2019). In addition, EM women mentioned that they usually had less access to healthcare services when feeling well or for normal physiological processes such as delivery. On the contrary, they only accessed healthcare services when signs or symptoms were abnormal during their pregnancy phases. Regarding perceptions of both healthcare workers and EM women, they tended to prioritize treatment over disease prevention (McKinn et al., 2019). Besides, women with a better understanding of ANC were 2.4 times more likely to access and use ANC4+ services than women with less understanding (Ha et al., 2015). Finally, determinants such as low reproductive health knowledge, poor maternal, newborn, and child health (MNCH) behaviors, and poor access to antenatal and post-natal services had significant impacts on poorer MNCH and higher neonatal mortality among EM women and their infants (McBride et al., 2018a).

(4) Low income, and economic concerns about indirect costs and loss of income:

Low income:

A survey of 53 EM groups for socioeconomic status showed that an income gap still existed between Kinh people and ethnic minorities, in rural and urban areas, among socioeconomic regions (UN WOMEN, 2017). Specifically, in 2015 the average monthly income of EM households was 1.161 million Dong, equal to 41 % of the average income of Kinh households with 2.888 million Dong and equivalent to

45% of the national average at 2.605 million Dong. The average monthly income of EM households in rural areas with 1.028 million Dong was equal to 45% of the average household income in urban areas with 2.287 million Dong. There were differences in income levels between socioeconomic regions. The average monthly income per capita of EM families in the North Central and Central Coastal regions was the lowest at 873,000 Dong per person per month, equivalent to one-third of that in the South East region of 2,657,000 Dong per person per month. Among 53 EM groups, there were 34 groups with per capita income of less than one million Dong. Of those, the lowest level was Mông ethnic group, with 436,000 Dong (UN WOMEN, 2017). The income gap was a strong determinant of increasing inequalities in health outcomes between the EM group and the Kinh/Hoa people. Of those, the Kinh/Hoa group belongs to the high-income group, while the EM group belongs to the lowest-income group (Dang & Nguyen, 2022). Related to the income gap in using ANC services, women with higher incomes had higher rates of using ANC4+ services than women with low incomes, with 68.1% and 30.9%, respectively. Furthermore, the possibility of using ANC4+ services was 2.3 times higher among high-income women than among low-income or near-poor women (Ha et al., 2015).

Economic concerns about indirect costs in accessing health services:

Regarding concerns about indirect costs and loss of income in EMs, this affected access and use of their healthcare services. Financial barriers such as informal fees, conveyance costs, and medication expenditures caused inequality between EMs and Kinh people (Målqvist et al., 2013a). Most ethnic minority households had low income, and healthcare payment became a barrier to full access to healthcare services. Health costs were an actual burden on many families and made raised the poverty rate in EM communities. Although health insurance agencies covered health expenses, EMs were facing barriers to accessing higher-quality health services due to high non-medical costs, such as high travel, food, and accommodation costs (Loi, 2021). Besides, in disadvantaged groups such as EMs, a lack of understanding of benefits and how to use health insurance cards led to the burden of medical expenses increasing in EM groups. Accordingly, health insurance could not decrease economic risks for EM families (Loi, 2021). In addition, disastrous medical costs have driven many families

into poverty, resulting in lower income and negative effects on their health situations. Most of these households were forced to pay out-of-pocket for health remedies, and the payments exceeded their financial ability by at least 40%. (Dang & Nguyen, 2022).

(5) EM women tended to give birth at an earlier age and have more children:

EM women tended to give birth at an earlier age and had more children than Kinh/Hoa women (Målqvist et al., 2013a; UN WOMEN, 2015). Early marriage status leads to a significantly high adolescent birth rate in EMs, especially in the Northern mountainous region, where the teenage birth rate was nearly triple that in other areas. The adolescent pregnancy rate in rural areas was much higher than in urban areas, and this ratio for Vietnam was 45 per 1000 women aged 15–19 years (Hoa et al., 2022). Additionally, the birth rate for EM adolescents was 115 versus 30 births per 1000 female adolescents in Kinh/Hoa (UN WOMEN, 2015). Related to the number of children of EM women, the fertility rate among EM women was higher than that of Kinh women, and this group was less likely to use modern contraceptive methods than Kinh women (Målqvist et al., 2013a; McBride et al., 2018a). The total fertility rate of 53 EMs was 2.38 children per woman, which was higher than that of the Kinh people at 2.02 children per woman. The proportion of women delivering three or more children among the 53 EMs was also higher than that of the Kinh ethnic group, with 17.7% versus 13.6% (UN WOMEN, 2017). A study by Huong et al. showed an inverse ratio between the number of members per household and access to improved sanitation, in which adding one person to a family would reduce to 0.9 times the possibility of access to improved sanitation (Huong et al., 2020).

4.1.2 Relationships:

The second level identified relationships that were likely to increase the vulnerability and inequalities in maternal and child health among ethnic minorities, as well as mortality rates in these groups.

(1) Poor household economic status:

In Vietnam, the most stable pattern of chronic poverty was the poverty status of EM groups. In 2014, the proportion of the EM population living below the poverty line was 29.1%, while the Kinh/Hoa group was only 5.1%. Besides, the ability of ethnic minorities to escape poverty was lower than that of the Kinh/Hoa people

(UN WOMEN, 2015). Additionally, the proportion of EM households living in temporary houses at 15.3% was three times higher than that of Kinh households at 5.2%, EM groups with the highest percentage of temporary housing include Mông 47.6%, Khmer 38.3%, Kơ Mú 37.3%, La Hủ 36.2%, and Xin Mun 34.8% (UN WOMEN, 2017). As reported by the World Bank, the poor were more likely to suffer from health problems and less likely to benefit from the Vietnamese healthcare system (Nguyen, P. T et al., 2021). Though most EMs had health insurance cards, they were afraid of being unable to afford them if they were regular medical checks (Ngo et al., 2021). Therefore, these vulnerable groups could withhold full access to health improvement resources, leading to inequalities in health outcomes among specific ethnic groups (Dang & Nguyen, 2022). Because the poverty rate was still high, EM pregnant women still had to work hard to earn a living even though they knew it was harmful. Additionally, inadequate conditions in the household economy led to their eating were insufficient nutrition for both the mother and fetus (McKinn et al., 2019). Moreover, the access rates to healthcare services of the wealthy in the rich lowland were six times higher than that of the poor, who live in Vietnamese mountainous regions (Places have the majority of ethnic minorities live). The frequency of access to maternal healthcare services of the wealthiest population group was three-fold more than that of the poorest group, with 67% compared to 25% (Dang & Nguyen, 2022).

Regarding postpartum health checks in poor households, there was a disparity in the rate of postpartum health checks among groups, specifically, the poorest group 61.3%, the nearly poor group 88.7%, the middle group 92.8%, the wealthy group 95.8%, the wealthiest 96.4% (Lam et al., 2019). In addition, the study by Lam et al. showed that infants in richer households received more frequent postpartum health checks. Simultaneously, postpartum health examinations were notably related to women in richer households. The rate of postpartum health checks increased 2.2 times in the nearly poor group, 2.4 times in the middle group, 3.5 times in the wealthy, and 2.9 times in the wealthiest households compared to the poorest households (Lam et al., 2019). Finally, results from the study by Målqvist et al. have shown that childhood stunting was strongly related to household economic status in EM groups (Målqvist et al., 2013a).

(2) Lacking decision-making power in EM women, and traditions and patriarchal structures within EM groups:

Regarding the role of EM women in their families, they lacked decision-making power. Traditions and patriarchal structures within ethnic minority groups were considered contributing elements to the maintenance of harmful health behaviors in this population group (Målqvist et al., 2013a).

EM women lacked decision-making power:

EM women did not have decision-making power, not allowed to travel on their own due to gender norms that affected access to healthcare services as well as seeking care (Målqvist et al., 2013a). Besides, women in poorer households used lower ANC services because they possibly had limited freedom of decision-making authority (Kien, V. D et al., 2019). Related to the access to healthcare services, in many households, the husband's family kept a primary role in making decisions about a woman's utilization of healthcare services. Despite being fully covered by health insurance, many pregnant women of EMs in the Central Highlands selected home delivery following their tradition (Loi, 2021). The influence of Eastern culture founded on Confucian ideology notably affected on freedom and decision rights of girls and women. In EM families, men were the head of the family, and women had the responsibility and duty to care for family members. These standards and ideologies greatly impacted the perceptions and behaviors of EM girls and women, leading to limited development chances and a failure of confidence in integrating into society to access societal services, including healthcare services. They even were required to sacrifice their studies and plays to spend all their time on domestic work. Men often despised women and thought women were inferior. Hence, men did not respect women's rights and always wanted to control women's lives (Hoa et al., 2022). Furthermore, EM women often faced challenges representing and participating in formal and informal decision-making that impacted their lives in the community or national organizations (UN WOMEN, 2015).

Traditions and patriarchal structures within EM groups:

In Vietnam, based on the influence of Confucianism, the man was the primary decision-maker in the family, and pregnancy and childbirth were seen as a woman's matters. Husbands were often less likely to attend their wives to ANC services. In addition, in many studies, the husband's role as the primary decision-maker was

related to lower ANC use and more home childbirth (Ha et al., 2015). In particular, most women had unequal income versus their husbands at 85.1%, and 66.5% of women were unequal with their husbands for decision-making. Although most husbands and wives did not communicate on ANC services, 66.9% of women were aware of an equality role between men and women in the ANC. And only one-third of husbands had economic support for their wives in the pregnancy phase (Ha et al., 2015). Access to ANC4+ services of women with financial support from their husbands was 2.2 times higher than that of women without husbands' financial assistance (Ha et al., 2015). Additionally, EM women who experienced violence by their husbands or partners were more than Kinh women. There were 58.6% of EM women between the ages of 15 to 19 years old agreed that it is acceptable for a husband to beat his wife for many reasons, and this rate in Kinh women was 48.5% (UN WOMEN, 2015). Finally, the patriarchal prejudices and notions of EM parents, the sons were always valued and prioritized positions for development over daughters, regardless of ethnicity's ideology as the matriarchal or patriarchal system. Therefore, sons were required to study more than daughters to serve the family and easily find a job. Meanwhile, daughters only needed to complete secondary school, do housework, and care for their families were the foremost things in daughter roles. The limitations of awareness, parental prejudices, and traditional beliefs have pushed teenage girls into the vicious circle of child marriage and school dropout, leading to a very high illiteracy rate in Vietnam's ethnic minorities (Hoa et al., 2022).

(3) EM women tended to have no assurance for land use, credit, and other natural and economic resources:

There was a tendency for ethnic minority women were not guaranteed the right to use land, credit, and other natural and economic resources. According to custom, the right to inherit land was reserved for men only (UN WOMEN, 2015). The percentage of ethnic minority households with only man land owners at 74.2% was higher than that of the Kinh group at 40.6%. However, land use certificates with both husband and wife names of Kinh people were higher than those of ethnic minorities, 36% and 21%, respectively. Especially, EM women were unknowing of their legal rights to get named on the household's land owner certificates (UN WOMEN, 2015). In addition, the percentage of EM households who had never accessed bank credit

was higher than that of Kinh people. The situation of credit loans among EM people was considered severe in households headed by women because these people did not have the right to own property that could utilize as collateral (UN WOMEN, 2015). Lastly, there were EM couples get married without legally registering their marriage, resulting in the woman facing uncertain legal consequences, including ownership of property and land, custody rights, and inheritance rights. Or there was uncertainty about suing their husbands for violence, and they often did not get the necessary protection or compensation (UN WOMEN, 2015).

(4) Young EM couples lacked practical knowledge about puberty, safe sex, and FP methods:

Shortage of practical knowledge for puberty, safe sex, FP methods, HIV/AIDS, and sexually transmitted diseases (STDs) protection, as well as the low rate of using modern contraceptives in young EM couples (UN WOMEN, 2015). Specifically, the percentage of married or unmarried couples in EMs who did not apply any contraceptive methods was around 30% compared with the Kinh/Hoa people at 23.4%. In addition, EM girls and women aged 15 to 49 tended to have the lowest complete knowledge of HIV transmission at 29% versus 47% of Kinh people (UN WOMEN, 2015). According to qualitative research, reasons such as limited contraceptive knowledge, apprehension of domestic violence, cultural taboos, and time limitations were the reasons for the prevalence of contraceptive utilization among Hmong EM women was low (Målqvist et al., 2013a).

(5) Cultural and linguistic barriers in accessing healthcare:

Cultural barriers:

Cultural barriers to accessing healthcare services included prejudices, customs, beliefs, and habits in the EM communities for using health services. These cultural barriers mainly came from the beneficiaries of healthcare services, especially EM women, and there was a variety and intersection in EM communities in terms of cultural barriers to accessing healthcare (Loi, 2021). The public health service system in the regions of EM communities in Vietnam basically rejected the healthcare practices and habits of EM people, such as squatting during labor, wrapping towels hanging from the rafters, bathing after birth, the healer performing the rituals, or the family members present in the childbirth stage. The custom of childbirth at home was rather popular

among several EM groups (Loi, 2021). A study showed that the Hmong people believed that pregnancy and childbirth were normal and natural processes of women, resulting in most of them giving birth at home, except for difficult or high-risk cases. After childbirth timing, a woman would not contact outsiders to prevent unlucky for others and often kept in their home for about a month to recover (Loi, 2021). In addition, access to and acceptance of ANC services was related to cultural beliefs among pregnant women and their families (Kien, V. D et al., 2019). The cultural customs of EMs had established prejudices against girls and women. Women not only became the primary workforce but also had to take care of their families. As a result, EM girls and women lacked opportunities to communicate with their environment outside the community, and the high rate of girls getting into early marriage and early pregnancy led to negative consequences on maternal, newborn and child health care as well as nutrition (Hoa et al., 2022). In addition, these customs and cultural standards of ethnic minorities created social exclusion, which has prevented girls and women from participating in social activities during their development (Hoa et al., 2022).

Linguistic barriers:

Besides other influencing factors, language barriers were also considered a determinant affecting health outcome inequality among EMs (Dang & Nguyen, 2022). Language barriers were obstacles to EMs accessing healthcare services in Vietnam. EM mothers were less likely to use healthcare services than Kinh mothers because of this language barrier (Lee et al., 2016; Le et al., 2021; Loi, 2021). In particular, the language barrier between EM women and healthcare workers in health facilities prevented women from seeking reproductive healthcare services (Oanh et al., 2022). For instance, Hmong women faced more communication barriers with healthcare workers in primary maternal healthcare. There was not always a health professional who spoke the Hmong language, so EM women hesitated to access services in these health centers. Hmong women were in the group with poor Vietnamese proficiency and faced difficulty or inability to read health information (McKinn et al., 2019). In addition, EMs in the Northwest areas did not speak the Kinh language (Vietnamese) when they went for medical examination, which formed a barrier between EM patients and medical staff (Dang & Nguyen, 2022). According to the nearest survey in 2019 by the Committee for Ethnic Minority Affairs, the percentage of EMs speaking Vietnamese was only

80.1%. Significantly, the literacy proportion was extremely low among EM groups such as Mang 46.2%, La Hu 46.9%, Lu 49.7%, and Mong 54.3%. EM communities in the North and South Central Coastal areas had the lowest proportion of Vietnamese utilization compared to other regions, notably the Ta Oi ethnic group at 74.8%. These created a large barrier to accessing healthcare (Loi, 2021). As reported by UN Women about 53 EMs in 2017, around 79.1% of survey respondents could be reading and writing Vietnamese. Generally, the literacy rate of EM women was lower than that of men of all ethnicities and age groups in all regions of Vietnam. Specifically, the literacy proportion among EM girls and women was extremely low in several groups, namely Lu 23.2%, La Hu 25.1%, Mong 30.8%, Mang 32.8%, Co Lao 33.9%, and Brau 35.7% (UN WOMEN, 2017).

(6) Limited awareness of maternal and child health caregivers:

Three indicators for family behavior of WHO, including oral rehydration therapy, family planning needs satisfying, and exclusive breastfeeding were forecasted to not reach the target by 2030 from the national to all local levels in Vietnam. Studies have shown that self-treatment and traditional experiences impacted healthcare practices among people, especially in reducing the prevalence of oral rehydration therapy in Vietnam. Early breastfeeding and exclusive breastfeeding achieved slow progress nationally, and there are inequalities in coverage between poor and rich households (Nguyen, P. T et al., 2021). In addition, healthcare workers, EM women, and family members maintained awareness of healthcare and medical services in the direction of treatment rather than prevention. It was represented in terms of responses to addressing their current health problems instead of preventing future health risks (McKinn et al., 2019). Similarly, in finding health information, a part of EM people considered health facilities as improper sites to look for health advice if they were healthy. Simultaneously, EM women who wanted to consult on how to care for their pregnant daughter and newborn baby said that they would not seek advice on this issue from the health facilities but only learn from others' experiences (McKinn et al., 2019). Furthermore, pregnant EM women and their families showed that they considered access to preventive healthcare services and argued there was not much benefit to accessing healthcare services when they felt well. Finally, regarding the remarkable diets of pregnant and postpartum ethnic minority women, Thai women said they did not eat buffalo meat,

beef, and water spinach because of fear of infection in the first month postpartum (McKinn et al., 2019).

4.1.3 Organizations:

The third level explored issues related to organization levels, specifically health facilities.

(1) Ethnic minorities utilized public health services to a lesser extent, and the lower admission rates for inpatient care for EMs:

A study in the mountainous areas of Vietnam on the utilization of public health services showed that the access and use of healthcare services by EMs was lower than that of the Kinh people (Målqvist et al., 2013a; Le et al., 2021). Limitations to services in accessing gynecological examination and treatment and cancer screening among rural women still existed, with the rate of genital tract infections among Vietnamese women around 40% to 80%, of which 64.1% for Thai ethnic women in the rural mountainous regions of Nghe An province. Reasons for this issue were associated with inadequate medical conditions, few women having regular gynecological checks for cancer screening, and a shortage of widespread screening programs, particularly in EM regions (Oanh et al., 2022). In the early stages of the 21st century, EM groups in Vietnam suffered from health inequalities and less access to health care (Dang & Nguyen, 2022). The EM groups had a higher rate of stillbirth and less utilization of ANC services (Målqvist et al., 2013a). In addition, some EM people in mountainous areas did not trust the quality of examination and treatment provided by healthcare workers at commune health facilities (Ngo et al., 2021). Moreover, the child health of EMs was seriously influenced by restricted access to healthcare services. Especially during the COVID-19 pandemic, up to 88% of commune health facilities stopped supplying vaccination services and guiding the care and observation of children under-five child growth (Dang & Nguyen, 2022).

Furthermore, although Vietnam had made speedy progress in health insurance coverage for EMs, the rate of using health insurance cards for some EM groups was still low and unsteady, with the proportion of EMs utilizing health insurance cards to treat and care for diseases nearly 45%. Estimated 2019, there were 5,617,167 per 12,867,449 EM people using health insurance cards, only 43.7%. This rate was lowest among Lo Lo ethnic group at 28.8% (Loi, 2021). The ineffective utilization of health

insurance came from beneficiaries having limited awareness of benefits and rights in using the health insurance card. Besides, instead of going to healthcare facilities, EMs had many selections for treatment, such as treatment with traditional methods (folk remedies or superstitions existing in the EM communities). EM people only went to healthcare facilities when their disease was too severe to be remedied (Loi, 2021).

Regarding inpatient care among EMs, the low proportions of hospitalization and inpatient care contributed to sustaining health inequalities in this population (Målqvist et al., 2013a). The study of Le et al. indicated that the population in mountainous areas (where the majority of ethnic minorities live) had a high rate of using healthcare services but mainly outpatient care. The low utilization rate of inpatient care was related to the traditional perception and the poor economic household, so they feared losing their income during inpatient treatment (Le et al., 2021). Finally, a study in the mountainous Bac Kan province of Vietnam showed that the rate of study participants used outpatient healthcare services at 48.2%, which was higher than the rate of inpatient service users with only 24.4% (Le et al., 2021).

(2) Discrimination based on ethnicity within the health system, and a low knowledge and understanding level about the culturally specific practices of ethnic minorities among healthcare workers:

Some part of healthcare workers had a discriminatory attitude toward EM patients, which was a severe issue that needed attention but had not been fully investigated and evaluated in medical reports (Loi et al., 2021). Regarding evidence of discrimination founded on ethnicity, and there were very few medical staff who are EMs in the healthcare system, even when EM pregnant women gave birth in healthcare facilities, they still had a higher risk of neonatal mortality. In addition, EMs were less expensive in care and treatment in healthcare facilities. Despite being similar in disease, sex, and age, the possibility of EM people experiencing large surgery was less than Kinh people (Målqvist et al., 2013a). The limitations in providing public healthcare services for EMs reflected in some local authorities that had no attention to administrative and judicial processes to protect people using their legal rights, such as responding to complaints toward organizations and individuals supplying healthcare services. The current situation was rather popular in Vietnam, where healthcare workers still had a limited understanding of human health rights. If the medical staff could not overcome

the barriers of language and culture with the EM community, this limitation would be even more serious (Loi, 2021). In addition, poor attitudes, discrimination by healthcare workers towards EMs, and shortage of culturally sensitive services in seeking and using healthcare services further increase inequality among EMs (Målqvist et al., 2013a; McKinn et al., 2017). On the other hand, a study by Målqvist et al. showed that the understanding and knowledge level related to culturally typical practices among healthcare workers was low, which exacerbated complications in practical adjustments in the EM community effects on maternal and child health, such as EM people still maintain national practices around childbirth and give birth at home (Målqvist et al., 2013a). Moreover, consideration of the practices in EM groups as a barrier to the use of healthcare services could become the prejudice that EMs faced. The blame for EM practices also showed an unwillingness to assess problems with the satisfaction, quality, and sufficiency of healthcare services that might contribute to low service usage (McKinn et al., 2019).

(3) Limited capacities of healthcare facilities to manage maternal complications:

The rate of using maternal healthcare in primary healthcare facilities showed low rates and unsuitable service quality in Southeast Asian nations (Liabsuetrakul, 2022). A study in Vietnam related to the childbearing practices of EM people showed that healthcare services did not meet the options for giving birth to EMs. In public healthcare facilities, the healthcare professional-centered approach resulted in low utilization rates of healthcare services among EMs due to their denial of healthcare services (McKinn et al., 2017). Results from studies on the quality of healthcare services in EM regions found that most families were unreliable with the quality and professional competence of commune healthcare centers. Because they considered there was a limited capacity to manage emergencies and provide a mother with healthcare, a shortage of specialized medical equipment, and a weak infrastructure in local healthcare centers. The loss of faith in commune health centers of EM families was because there was often only one or even no medical staff on duty to monitor patients in these health facilities. In addition, limited expertise, inadequate and inappropriate medical equipment consisting of medicines, or worsened facilities made healthcare workers less confident in their competence to manage emergency cases (Loi, 2021). Moreover, commune healthcare centers had poor quality healthcare services. Hence, EM women often did not access

and use services here (UN WOMEN, 2015). For instance, Tay pregnant women came to the commune health center for examination but did not have clean birth-equipment aids, so they had to move to a higher-level hospital (district hospitals) (Loi, 2021). An EM woman stated it was safer to give birth at home. She had successfully given birth to three children at home while she had lost one child during childbirth in a health facility (McKinn et al., 2019). Besides, the more aged women also encouraged their daughters to give birth at the hospital instead of at the local health centers (McKinn et al., 2019).

(4) Limited capacity to access the community and to provide comprehensive sexual and reproductive health services:

There was still a limited and weak capability in the healthcare system. The competence to fulfill the maternal and reproductive healthcare demands of EM women at commune health centers in EM areas was limited (Oanh et al., 2022). Research results from a rural district in Northern Vietnam showed that the rate of commune healthcare centers capable of providing ANC services was only 9.5% (Kien, V. D et al., 2019). Studies found that the low quality of healthcare services had led to disadvantages for mountainous and rural women. The percentage of women receiving prenatal health education during ANC examination was low. Ultrasound services were often interested by rural and mountainous women but did not commonly supply in local health centers. Therefore, they sought private ANC services, even though expenses were higher than public healthcare services. These led to higher costs, and women in rural and mountainous areas would have less access to private ANC services than when they had access to healthcare services in public health centers (Ha et al., 2015). In addition, Thai ethnic women who had experienced primary healthcare services considered that the quality of healthcare services at these facilities was still poor. Based on this perception, they increasingly made many decisions regarding their healthcare utilization. For example, the majority of Thai ethnic women put a priority on childbirth and antenatal care at District Hospitals because they believe that healthcare services here were higher quality in terms of human factors and facilities. A Thai ethnic woman stated that the medical staff at the local healthcare centers were not as good as the medical staff in the hospital, and the facilities and space were not as good as in the hospital (McKinn et al., 2019). Even the healthcare workers at the local health centers condemned their facilities

compared with the District Hospital. Despite the available equipment, space, and personnel, medical professionals at some local health centers still transferred pregnant women to District Hospitals for uncomplicated childbirth as a regular thing. Some other statements expressed that healthcare workers were short of confidence in delivering babies or worried complications occurring that they could not afford to detect and address in time. The result was a high referral rate (McKinn et al., 2019).

(5) Levels of availability and accessibility to full immunization coverage in EM living places:

The rate of full vaccination coverage among EM children at 32.5% was lower than that of Kinh children at 53%. Besides, the rate of complete immunization among Kinh children was 1.5 times higher than that of EM children. In addition, the ability to fully vaccinate women in urban areas was also higher than women living in rural areas, with 58.5% versus 46.3%. With regard to maternal education, children aged 12 to 23 months who were children of mothers with higher education had a higher chance of being fully vaccinated (Vo et al., 2019). Specifically, the rate of complete immunization among children whose mothers had an education level from high school or higher was 1.89 times higher than that of children whose mothers had a primary education level or lower (Vo et al., 2019). The study by Vo et al. showed that poverty was the main influencing factor in the use of vaccination services in Vietnam. Specifically, the proportion of children under one year of age in the poor household group who were fully vaccinated accounted for the lowest rate at 33.4%, while in the affluent group, it was from 49.3% to 57.9%. Research also showed that the proportion of children aged 12 to 23 months who were fully vaccinated was still more concentrated in the wealthy group (Vo et al., 2019). This issue was attributed to negative attitudes toward the acceptance of childhood vaccinations, residence in remote areas where free vaccinations were hard to receive, and limited freedom of decision-making among poor households (Vo et al., 2019). In addition, the difference in access to full immunization between the poor and the rich among Vietnamese children belonging to different ethnic groups and whose mothers with a low education level may be due to differences in availability as well as access to full immunization in their place of residence (Vo et al., 2019). Regarding ethnic factors, ethnicity was considered a main factor in the existence of inequality in the complete immunization of children under one year of age between the rich and the poor.

The inequality gap between the poor and the rich was higher in the EM groups than in the Kinh group in terms of full vaccination (Vo et al., 2019). Evidence from previous studies in Vietnam indicated that the region of residence was elements associated with higher immunization coverage rates. The EM residences in Vietnam were mostly in areas with difficult socioeconomic status, leading to many barriers to going to school and access to healthcare services (Vo et al., 2019). Inequalities between children from better-off and poorer families still existed in rural areas, while there was no significant gap between children from poor and wealthy households in urban areas. This issue was related to the concentrated efforts of the authorities and private organizations in the availability and quality of immunization services in urban areas of the country (Vo et al., 2019). Specific determinants that contributed to effecting on significantly poorer neonatal and maternal health outcomes and higher infant mortality rates among EMs included tetanus vaccination rates and the rate of modern contraceptive use among EM women were low (McBride et al., 2018a). Lastly, a study in 2021 by Nguyen et al. predicted that the Northwest and Central Highlands regions would not meet the vaccination targets for DPT3, Polio3, Measles, and full immunization by 2030. Therefore, measles outbreaks in remote and poor mountainous areas in Vietnam were related to the gap between current coverage and coverage required for herd immunity (Nguyen, P. T et al., 2021).

(6) Shortage of human resources, medical equipment, and quality healthcare services at commune health facilities:

Although the Vietnamese government had many exertions to quality improvement in providing healthcare services for EMs, problems such as a lack of healthcare workers and doctors, a limited list of medications covered by health insurance, a lack of medical equipment suitable to the health care requirements of specific patient groups including children, women, the older people, people with disabilities, and people living with HIV still existed. In addition, the lack of professional capability, the poor attitude of healthcare workers, and the sanitary condition of the commune and district health facilities that had not met the expectations of ethnic minorities are considered large challenges for the healthcare system (Loi, 2021). In the study by McKinn et al., commune health centers provided preventive medicine, primary healthcare, FP, and maternity healthcare, but not all of these health facilities had a doctor in charge.

Therefore, patients were often self-examined at district and provincial hospitals (McKinn et al., 2017). There were gaps in equipment among public health facilities at the same level and between provincial and district levels in the same province in the study of the ability to provide health services of public health facilities in five Central Highland provinces of Vietnam. Specifically, the rate of provincial general hospitals meeting the list of equipment of the MOH with four specialties, including internal medicine, obstetrics, pediatrics, and emergency and intensive resuscitation reached over 80%, and the average satisfaction rate for surgical equipment was only 60.5%. The percentage of district general hospitals with fully equipped obstetrics departments was only 58% to 60%. As a result, the EM community in the Central Highlands had the highest disease rate with 84.5%; the rate of gynecological examination of ethnic minority women aged 15 to 49 years old in this region was the lowest at 42.9%; the percentage of pregnant EM women receiving ANC4+ was the lowest only 19.6%; the rate of postpartum examination of EM women was lowest with 68.5%, and the rate of childbirth at health facilities was the lowest at 85.7% (Loi, 2021). In addition, the absence of ultrasound machines at health stations was a sign of the lower quality of healthcare, including ANC and reproductive healthcare services. Therefore, the medical staffs were not confident in their ability to manage and detect complications during pregnancy and delivery, so they transferred to the hospital with all the women in labor (McKinn et al., 2019). Regarding the responses of healthcare workers, they were particularly negative about the quality of the maternal healthcare services, which they could provide when working in health centers with inadequate facilities (McKinn et al., 2019). Particularly participants in McKinn et al.'s study, including health workers and community members, reported that long waiting times, absence of doctors, the low qualifications of health workers, shortage of ultrasound services, cramped spaces, lack of appropriate equipment, and poor hygiene led to women preferring access to hospital services over commune health centers (McKinn et al., 2019). Furthermore, the lack of healthcare services in mountainous areas was the cause of the difficulty in accessing timely medical care and the high rate of self-treatment in the mountainous community in the Central region of Vietnam (Ngo et al., 2021). The study by Dang & Nguyen also showed that the access to healthcare services for people in mountainous areas was less than for people living in lowland areas. Simultaneously, there was an unavailability of healthcare services

and infrastructure, as well as a lack of healthcare services for noncommunicable diseases for EMs in Vietnam (Loi, 2021; Dang & Nguyen, 2022).

4.1.4 Communities:

The fourth level explored pathways from environments, community, societal relationships, and cultural groups such as education, workplaces, and neighborhoods to identify characteristics of these aspects that were associated with vulnerability and inequalities in maternal and child health and mortality among ethnic minorities in Vietnam.

(1) EM communities often resided in remote areas leading to hard-to-approach healthcare services, and limited public transportation:

Compared with the Kinh people, EMs were more indigent and lived in more remote regions. The access of EM groups to healthcare services was affected by their geographic distance. Overall these population groups tended to isolate themselves in remote and mountainous areas (Målqvist et al., 2013a; Dang & Nguyen, 2022).

Residence in remote sites and lack of transportation:

The rugged terrain was considered one of the affecting elements in accessing and utilizing healthcare services. EM groups mainly focused on living in difficult geographical areas, and simultaneously their socioeconomic status was also destitution (Le et al., 2021). Similarly, the average distance to the nearest health facilities was one of the simple measurements in reflecting access to fundamental healthcare services (UN WOMEN, 2017). Of those, the average distance to the commune healthcare centers of the Kinh group was closer than that of EMs, with 3.2 ± 5.5 km versus 3.6 ± 12.8 km, respectively (Table 2) (Le et al., 2021). EM women with disadvantaged situations who were experiencing discrimination related to gender and ethnicity, hence the far distance from healthcare facilities would add adverse factors during pregnancy and delivery (UN WOMEN, 2017). Notably, the travel conditions with difficult mountainous roads, EM women rarely utilized or owned motorbikes, which traveling a distance of more than 10 km was a challenge for them (UN WOMEN, 2017). Moreover, the quality of the traffic system in mountainous and EM regions was worse and unsafe when traveling, the main vehicle was motorbikes, and even EM people in some local areas had to walk. General anxieties of Hmong and Ha Nhi ethnic mothers reported

that they were afraid of childbirth on the way because they could not arrive at the hospitals in time (Loi, 2021). According to the 2015 survey on the socioeconomic situation of 53 EMs found that the average distance of EM households to the hospital was 16.7 km, especially there were EM groups ranging from 30 km to 80 km, such as O Du up to 72 km, Ro Mam around 60 km, Ha Nhi to 53.8 km, Chut with 48 km, etc. (Table 4.1). Meanwhile, the rate of EM families owning motorbikes by gender included males at 83.5% and females at 67.3%. Besides, EM households headed by women that possessed under 50% of motorbikes comprised Ha Nhi, Ta-oi, Hre, Co Tu, Xo Dang, Bru Van Kieu, Khang, Si La, Xinh Mun, La Ha, Ro Mam, Co, O Du, Chut, Kho Mu, La Hu, Mang. Of those, the Mang ethnic group had a significantly low rate of motorbike ownership, with males at 38.8% and females at 15.9% (UN WOMEN, 2017).

Table 4.1 The average distance from home to healthcare facilities according to ethnicity.

Ethnicity	Distance (kilometer [km])
The average distance from home to the commune health stations	
EMs	3.6 ±12.8
Kinh	3.2 ± 5.5
EM groups with relatively far distances to local health stations	
La Hu	9.1
Lo Lo	10
Cong	11.2
Mang	15.5
The average distance from home to the hospital	
EM households	16.7
Gender and ethnicity of the head of the household	
Average distance from home to the hospitals	
53 EM groups	
Males	17.6
Females	12.7

Table 2: The average distance from home to healthcare facilities according to ethnicity.
(continue)

Ethnicity	Distance (kilometer [km])
EM groups were within 10 km of the hospital	
Chinese	5.3
Khmer	8.6
Ngai	9.0
Cham	9.2
EM groups with distance from home to the hospital ranged from 30 - 80 km	
Khang	31.3
Kho Mu	31.9
La Ha	32.6
Xinh Mun	33.3
Mang	33.6
Cong	37.6
La Hu	39.2
Chut	48
Ha Nhi	53.8
Ro Mam	60
O Du	72

(UN WOMEN, 2017; Le et al., 2021).

Difficulties and disparities in accessing maternal and child healthcare services related to EM places of residence:

A study by McKinn et al. in 2019 showed that the Hmong residence areas were far away, and they had difficulty accessing healthcare stations and district hospitals. Therefore, it increased costs due to long-distance travel and required an accompanying person when visiting district hospitals for examination and treatment. This problem could lead to a loss of income for family members (McKinn et al., 2019). For example, a Tay woman aged 23 years old described that the distance from her house to the hospital was very far, about 20 km. However, she was significantly costly for travel, while did not cost medical expenses (McBride et al., 2018b). Residence in rural or remote areas was believed to be a factor causing the profound disparity in healthcare outcomes among EMs, and this was also a determinant in their relatively poor health situation (McBride et al., 2018a; McBride et al., 2018b). Local people in mountainous areas had difficulty accessing higher-level medical services in the Vietnamese healthcare system, such as district or provincial hospitals (Ngo et al., 2021). Regarding maternal health care, a study by Ha et al. found that around half of women residing in rural areas had no access to ANC4+. The lack of ANC services could lead to neglected chances for better maternal health outcomes (Ha et al., 2015). Furthermore, living in urban areas was an element related to more access to ANC services (Kien, V. D et al., 2019). Lastly, related to child healthcare issues, the decrease in the mortality rate of children under five years old in Vietnam still had a large disparity between regions. In 2017, the under-five child mortality rate in the wealthiest areas was 12.6 ‰, while this mortality rate in the poorest areas was three times higher up to 36 ‰ (Nguyen, C. M., & Nguyen, M. P., 2020). The child mortality risk of mothers residing in the Northern Midlands and Mountains was 1.6 times higher than that of children of mothers living in the Red River Delta. This disparity was related to mountainous or semi-mountainous geographical characteristics that hindered access to health services. Similarly, the child mortality risk among women living in rural areas was 1.5 times higher than that of children of women living in urban areas (Lee et al., 2016). In addition, EM women who resided in remote areas had less opportunity for postpartum health examination for their newborns (Lam et al., 2019). A study presented that the prevalence of stunting was likely to be

impacted by geographic location, especially the study also found that children living in rural regions were more than twice as likely to be stunted (Målqvist et al., 2013a).

(2) Low access to health information and education:

In research by Ngo et al. regarding the status of periodic health examinations and self-treatment of the population in remote and mountainous areas of Vietnam, the proportion of participants in this study receiving health information from healthcare workers was only 3.4 %. And their primary information sources came from loudspeakers, television, or radio (Ngo et al., 2021). Especially, the local healthcare centers did not have health information documentaries designed in any EM language (Målqvist et al., 2013a). Many EM women did not have enough opportunities to get more information and access to health professionals to better understand pregnancy, childbirth, and health problems for themselves and their children. The reasons for this issue were associated with the nature of communication with medical professionals. Specifically, EM women indicated that healthcare workers provided pregnancy information in a didactic, one-way manner, and women played passive hearers. As a result, they could only recall the content that was mainly general and not detailed. For example, EM mothers received guidance from healthcare workers about iron supplements when anemic. However, these medical staff did not instruct how to supplement, how to dose, and when to iron supplement (McKinn et al., 2017). In addition, the Maternal and Child Health (MCH) Handbook containing recommendations and guidance from health professionals had been provided to EM mothers. A part of EM women said that the medical staff only provided the handbook and told them to read or keep it carefully without saying anything more. However, some people reported that they had difficulty comprehending the information in the MCH handbook, which included the content and language barriers related to literacy ability, even being illiterate and unreadable in the MCH handbook by Vietnamese language (McKinn et al., 2017). In the context of one-way communication, it required women to be more proactive in communicating with health specialists to satisfy their demands for healthcare information. However, this was not easy for EM women due to obstacles related to language, gender, time limitation, hesitance in asking questions, and a perceived shortage of consideration or sympathy from medical staff when expressed anxieties about pregnancy and delivery. Moreover, women's confidence in the information provided by the MCH handbook

was increasing, which led to EM women interpreting the health information in different manners, thus affecting their health behaviors during pregnancy and child-rearing periods (McKinn et al., 2017). The study results of McBride et al. also showed that the consultation sessions were short of details and hard to fully understand health information that brought benefits to the development of the fetus in the following months. The sessions providing one-way information significantly decreased the opportunity for further interactions between EM women and healthcare workers. In general, the strategies of providing health educational communication services had generalized and one-way manners for all pregnant women in the community, which had shown a limited capacity in supporting mothers' health for EM women (McBride et al., 2018b).

(3) Inadequate access to improved water and sanitation:

The difficulties of living conditions in EM regions influenced people's health status. Specifically, the rate of EM households with poor access to clean water was 30.7%. Over 50% of families of 14 EMs had difficulty accessing clean water, notably including O Du up to 86.5%, Chut at 77.9%, Bru Van Kieu at around 74%, Kho Mu at 72.9%, and Lo Lo at 72.2% (UN WOMEN, 2017). In rural regions, access to clean water was poorer than in urban regions. EM families in rural areas with the risk of lack of clean water were triple compared to those in urban areas, with 11.9% versus 34.2%. Besides, in the Northern Midlands and Mountainous regions, Central Highlands, North Central and Central Coastal regions, the highest rate of worse access to clean water among EM households were at 34.4%, 34.8%, and 45.5%, correspondingly (UN WOMEN, 2017). A study by Huong et al. showed that the percentage of rural households with an approach to improved water sources and improved sanitation facilities were 69.9% and 77%, while this percentage in urban households was up to 95.6% and 96.4%, respectively. In addition, burdens related to sanitation and water-borne diseases in Vietnam had unequal distributions. The highest prevalence of diarrhea and parasitic diseases was concentrated in the Northern Mountains and Central Highlands, where most of the population were EMs (Huong et al., 2020). Regarding access to water and sanitation conditions, there were regional differences. The lowest prevalence rates of improved water sources, only improved sanitation, and both improved water sources and sanitation in the Northern Midlands and Mountains were 17.7%, 57.6%, and 16.0%, correspondingly. In contrast, this ratio was highest in the Mekong Delta area at 98.0%,

91.9%, and 90.4%, respectively (Huong et al., 2020). The study also indicated that around 64.6% was the rate of EM households accessing hygienic water sources; 61% belonged to EM families, who had only access to improved sanitation; and 43% was the rate of EM households accessing both improved water sources and sanitation. In previous studies, EMs had lower access to hygienic water sources, only improved sanitation, and both improved water and sanitation compared to Kinh people (the ethnic majority group). This disparity led to considerable health risks for vulnerable populations from poor water and sanitation (Huong et al., 2020). In addition, EM groups had less utilization of sanitary latrines (Målqvist et al., 2013a), especially the rate of EM households using sanitary latrines was considerably lower than that in the Kinh group. The percentage of EM families using sanitary latrines was 27.8% in 2015. The rate of households using sanitary toilets was under 20% in 31 EM groups. Notably, no families utilized hygienic toilets in O Du ethnic households. The rate of using sanitary latrines was extremely low in EM groups, comprising Xinh Mun at 2.3%, La Hu at 2.7%, Chut at 3.3%, and Kho Mu at around 4.3% (UN WOMEN, 2017).

(4) Limited access to all levels of education among EM girls:

The literacy percentage of EM adolescent and youth girls was 83.2%, significantly lower than the rate of 99.1% for Kinh and Hoa girls. The rate of EM girls of elementary school age who attended school was 92.1% compared with Kinh and Hoa girls at 98.9%. These rates in secondary school were 76.6% versus 92.6%, correspondingly. The proportion of Kinh women with lower than primary education level was 20%, while the proportion of EM women was two to three times higher than that of Kinh women, with rates ranging from 41.9% to 75% (UN WOMEN, 2015). EM women usually started working in their young years. There were many EM girls at the age of 15 who joined the workforce the same as adults, while at this age, most of the Kinh/Hoa girls were studying in high school and then could transfer to vocational schools or study further colleges or universities (UN WOMEN, 2015). For specific examples, Hmong girls had considerably lower chances of attendance at school than boys, especially in secondary education. Besides, the rate of Hmong girls who attended school at the proper age of junior high school was low, only 24.36%. It meant that only one out of four Hmong girls in junior high school age attending secondary school. The out-of-school percentage of Hmong girls between primary and secondary school

age was 1.5 and 2 times higher than that of boys (UN WOMEN, 2015). In addition, societal norms in the Hmong community still supposed that girls had to take on a lot of household and farming work; and they would be unable to complete high school even if they wanted to (Hoa et al., 2022). Lastly, the main obstacles leading to school dropout among EM girls comprised difficult economic status, a great distance from home to school, rugged terrain in mountainous areas, and backward practices such as early marriage or EM girls without being encouraged to further their education to higher levels (colleges or universities) (UN WOMEN, 2015).

(5) Still existing early marriage and consanguineous marriage among EM groups:

Both early marriage and consanguineous marriage led to negative consequences for maternal and child health outcomes among EMs (UN WOMEN, 2017; Kien, L. T., & Thu Nga, 2018).

Early marriage among EM groups:

Early marriage is a situation in which one or both individuals get married under the minimum age regulated by Vietnamese Marriage and Family Laws (female full 18 years old, male full 20 years old) (UN WOMEN, 2017). Early Marriage, Child Marriage, and Early Pregnancy led to more risks and complications for maternal and child health, such as miscarriage, stillbirth, premature birth, maternal mortality, maternal and child malnutrition, and complications related to reproductive health due to pregnancy and childbirth at a very young age (UN WOMEN, 2015; UN WOMEN, 2017; Kien, L. T., & Thu Nga, 2018; Hoa et al., 2022). The evidence was that the neonatal mortality rate of EM groups was threefold compared to the Kinh/Hoa people (the majority ethnic group in Vietnam), the under-five child mortality rate in EM groups was fourfold compared to the Kinh/Hoa people, and the maternal mortality of EM groups was double compared to the national rate (Kien, L. T., & Thu Nga, 2018). In addition, EM girls in early marriages had to drop out of school and lose opportunities for development and societal integration (Hoa et al., 2022). Of the total number of marriages in the country, 2.6% were early marriages. The rate of early marriage in the Kinh people was the lowest at 1.5%. Meanwhile, the average rate of early marriage among the 53 EMs was up to 26.6%, according to the Survey of Population Change and Family Planning in 2014 (UN WOMEN, 2017). In the survey of 53 EMs, EM groups with a very high rate

of early marriage of more than 50% consisted of O Du at up to 72.7%, Mong at 59.7%, Xinh Mun at 56.3%, La Ha at 52.8%, Ro Mam at 50%, and Brau at 50%. EM groups with early marriage rates ranging from 40% to 50% comprising Lu, Co Lao, Mang, La Hu, Kho Mu, Lo, Ha Nhi, Si La, Gia Rai, Phu La, Chut, Khang, and Chu Ru (UN WOMEN, 2017). Besides, survey consequences on 53 EMs had 2991 cases of child marriages that involved children below 16 years old, and the number of child marriage cases among EM girls was 3.4 times higher than that of boys, with 2306 compared to 685, respectively (UN WOMEN, 2017). Rural areas had higher prevailing cases of early marriage than urban areas. Specifically, around one-third of the marriages of EMs in rural areas were early marriages accounting for 28.1%, and this was twice higher as this rate in urban areas at 13.4% (UN WOMEN, 2017). The rate of early marriage was high in the Northern Midlands and Mountainous regions, and Central Highlands in 2015, corresponding to 29.7% (with 33499 people) and 29.6% (with 10217 people) (UN WOMEN, 2017). In the Vietnamese Northwest, one in 10 boys from 10 to 19 ages got married. Meanwhile, one in five girls from 10 to 19 ages got married. The married rate of EM girls aged below 15 and below 18 (4.7% and 15.8%, respectively) was triple compared to the rates of EM boys (1.8% and 5.8%, respectively) (UN WOMEN, 2015). The mean age of early marriage for EM girls was 15.8 ages, and 17.5 ages for EM boys in 2018 (Hoa et al., 2022). With regard to the development of EM girls, early marriage became a considerable obstacle and challenge. Early marriage had more effect on girls because they had to be mothers at an age when the physiological function of the child girl's body was not yet complete for pregnancy and childbirth, and also a shortage of knowledge and skills in rearing and caring for their children (Hoa et al., 2022). EM groups with high child marriage rates were often associated with high poverty percentages, low schooling rates for girls, and poor access to healthcare services (Hoa et al., 2022). Gender prejudices and cultural tradition barriers continued the marginalization of Vietnamese EM girls and women, such as EM girls being enforced early marriage by traditional norms in EM customs, sexual discrimination, early and continued encouragement in childbearing, and priority in favoring educational and developmental chances for sons (Hoa et al., 2022).

Consanguineous marriage (CM) among EM groups:

Although Vietnam's Law on Marriage and Family prohibited marriage and living together as husband and wife between individuals of the same direct bloodline, consanguineous marriage was still an imperishable issue in EM society. The total number of consanguineous marriage cases in the survey of 53 EMs was 47224, of which 24977 cases of women (equivalent to 52.9%) and 22247 cases of men (equivalent to 47.1%) (UN WOMEN, 2017). Some EM groups had a high rate of CM, including Ma up to 43.8%, Mang at 43.0%, Mnong at around 40.0%, and Xtieng at 6.6%. The number of consanguineous marriages in rural areas at 40834 was 6.4 times higher than in urban areas with 6390 cases (UN WOMEN, 2017).

According to geography, the regions with the highest number of CM cases were the Northern Midlands and Mountainous Regions (where the majority concentration of EMs) up to 15585 individuals, following the Central Highlands (where the majority concentration of EMs) at 10196 individuals (UN WOMEN, 2017). Regarding CM consequences, it created quality degeneration in the following generations because of receiving recessive genes from their parents. As a result, the proportion of EM children occurring congenital malformations was much higher than in Kinh people. There were high mortality risks, malnutrition, illnesses, and especially, Thalassemia in children of CM couples. Specifically, approximately 2000 babies are delivered with Thalassemia annually in Vietnam, and the majority are concentrated in EMs (Kien, L. T., & Thu Nga, 2018). In several EM groups with a small number of residents, their next generations were impaired by genetic diseases associated with CM, which led to a reduction in population in their ethnic group (Kien, L. T., & Thu Nga, 2018).

(6) The high rates of undernutrition and stunting children in mountainous and EM areas:

The rate of stunting children in Vietnam had declined significantly. However, EM groups were still systematically left behind, which hindered the progress of reducing malnutrition at the national level (Kien, N. T et al., 2022). The evidence was that the rate of undernutrition and stunting children in mountainous regions (where the majority concentration of EM groups) was triple compared to the more affluent delta provinces (McBride et al., 2018a). Firstly, regarding the disparities in malnutrition among regions, the prevalence of stunting children in rural areas, Central

Highlands, and Northern Midlands and Mountainous regions was still high. Meanwhile, the rates of overweight and obese children in urban areas increased (Loi, 2021). There were disparities in the undernutrition rates of children across regions from 2005 to 2017. Compared to the Southeast region in 2017, the prevalence of stunting in the Central Highlands was significantly higher, with 33.4% versus 16.7%. The rate of underweight children in the Central Highlands was also much higher than this rate in the Southeast region, 20.8% versus 8.6%, respectively (Nguyen, C. M., & Nguyen, M. P., 2020). The Northern Mountainous and Western Central regions were places where the prevalence of malnutrition was popular and highest. The Northern Mountainous and Central Coastal regions had an alarmingly high proportion of stunting children at 30.7% and 34.9%, respectively (Hoa et al., 2022). Second, malnutrition had notable impacts on the health and development of EM girls and women. According to a study by Hoa et al., malnutrition in EM women was alarming because of obstacles in pregnancy and childbirth periods, especially pregnancy and lactation periods (Hoa et al., 2022). The rate of low weight in infants under two kilograms among EM groups at 8.1% live births was higher than this rate in Kinh women at 5.2%. The estimated proportion of EM mothers lacking knowledge and skills in weighing and monitoring weight for the infant stage was 14.6% higher than that of Kinh women at 8.7% (Hoa et al., 2022). Finally, in Vietnam, the determinants of disparity in the mortality rate of children under five years old included malnutrition, poverty, income, and attainment levels. The study also showed that EM children with chronic undernutrition lived in socioeconomically disadvantaged areas in Vietnam, and disparities in socioeconomic status were believed to be undernourished causality in various regions (Nguyen, C. M., & Nguyen, M. P., 2020). Especially, study results showed being underweight was considered a direct pathway of socioeconomic status that impacted the under-five child mortality rate. Related to two undernutrition types, stunting had a predominant influence on the under-five child mortality rate, which was 3.2 times higher than the influence level of underweight (Nguyen, C. M., & Nguyen, M. P., 2020). Additionally, the malnutrition rates among EM children increased by the situation of child marriages leading to an increase in the maternal mortality rate of EM women, the under-five child mortality rate, and the under-one child mortality rate of EM children (Hoa et al., 2022). Related to the context of the COVID-19 pandemic, this crisis seriously influenced the nutritional

status of EM children, notably children in poor families. Simultaneously, supported policies from the authorities did not meet the requirements of this group (Dang & Nguyen, 2022).

(7) Anemia in pregnant, postpartum, and non-pregnant women in EM women:

In the study of Målqvist et al. about anemia in the groups of pregnant, postnatal, and non-pregnant women in a mountainous province in the Central Highlands, results recorded that anemia was related to EM status (Målqvist et al., 2013a). Anemia in women impacted their health and living quality, and increased the risk of adverse maternal and neonatal health outcomes. Anemia was associated with high mortality and morbidity rates in females, growth child retardation, cognitive impairment, raised risk of disease, and reduced effective working. Overall there was a considerable effect on the family and society (Kien, N. T et al., 2022). A study by Kien, N.T. et al. indicated that in the total of 19744 study participants, 5089 non-pregnant women were impacted by anemia, and the rate of anemia was 23.2%. Particularly, there were geographic variations and grew in the mountainous, rural regions, and EM groups in the prevalence of anemia among non-pregnant women (Kien, N. T et al., 2022). In addition, studies conducted without including EM individuals showed notably lower rates of anemia than studies conducted with a part or whole of EM participants, with 22.5% compared to 25.1% (Kien, N. T et al., 2022). In Vietnam, studies related to the rate of anemia in women were performed in lowland, Vietnam's Central regions and urban areas had a lower rate (with 20.6%, 19.9%, and 9.4%, respectively) compared with the studies conducted in mountainous, Northern Vietnam, and rural areas (with 27.7%, 23.7%, and 28.7%, respectively) (Kien, N. T et al., 2022). Although many local authorities had efforts to reduce the prevalence of anemia, there were still significant and persistent disparities between mountainous regions, Northern Vietnam, rural areas, and EM groups or lagging compared to other localities in overall improvement of anemia in women (Kien, N. T et al., 2022).

(8) Backward traditional practices surrounding childbirth:

The site of childbirth played a significant role in deciding the health and life of both mothers and children. Studies on EM women reported that EM women had more possibility of home delivery. The reasons for the preference for giving birth

at home among EM groups were believed to be related to the influences of traditional beliefs, patriarchal structures, and complicated rituals encircling delivery that led to the low rate of EM groups in delivery at health facilities (Målqvist et al., 2013a). The neonatal mortality rate was predicted to be higher for EM groups due to the risk of neonatal mortality related to childbirths at home (Målqvist et al., 2013a). Besides that, improvements in childbirth at healthcare facilities were still uneven, with disparities among various ethnic groups (Målqvist et al., 2013b). The rate of births at health facilities of the 53 EM groups was 63.6%, and the rate of EM women in home deliveries was 36.3% (Loi, 2021). Meanwhile, the rate of childbirth at the medical facilities in the Kinh mothers was up to 99%. There was to 99% of Kinh mothers delivered with trained midwives, while this rate of EM women was only 68.3% (UN WOMEN, 2015). There were 25 groups out of 53 EM groups that had a rate of home deliveries over 50%, especially several EMs with a very high proportion of mothers giving birth at home, comprising Si La at up to 88.9%, Lu at 87.0%, Array at 86.3%, La Ha to 88.2%, Ha Nhi at 82.4% (Loi, 2021). Regarding disparities in regions, in the Northern Mountainous Regions, the very high percentage of EM mothers in home deliveries accounted for a range of 40% to 60% of the total number of births, whereas most of the Kinh mothers in lowland regions delivered in medical facilities (Oanh et al., 2022). A study by Lee et al. indicated that the traditional customs of EM groups comprising giving birth at home were still popular, and practices surrounding childbirth had slowed down the decrease of the child mortality rate in EM communities (Lee et al., 2016). In addition, combined with the absence of antenatal care, non-participation in pregnancy monitoring at medical facilities and childbirth at home led to a significant increase in maternal mortality rate among EM women during pregnancy and childbirth (Hoa et al., 2022). Furthermore, the psychosocial benefits of culturally proper care provided by the families of EM women for home deliveries and most absented the support of trained birth attendants. Therefore, EM women believed that childbirth at home had more advantages than delivery at medical facilities and kept the perception that giving birth at home was their best or even only choice (McKinn et al., 2019). Currently, although the educational level of EMs and the village healthcare networks improved, some EMs preserved the custom of home delivery and the slow changes in the rate of women seeking ANC services for examinations and treatments (Loi, 2021).

(9) EM women were less likely to attend antenatal care, postnatal care, or delivery in healthcare facilities:

Although the Vietnamese Government had reached the Sustainable Development Goal of decreasing the maternal mortality rate, there were still rising disparities between disadvantaged and wealthier women using ANC services. Women with difficult and disadvantaged conditions had low accessibility to safe and reasonable ANC services, resulting in higher maternal morbidity and mortality rates in these groups (Ha et al., 2015). Access to and utilization of ANC services was still centralized among women in wealthier families. Elements including Kinh/Hoa ethnic women and more affluent groups were significantly related to higher rates of using ANC services (Kien, V. D et al., 2019). Moreover, access to ANC services and childbirth with skilled caregivers among EM women was much lower than for Kinh women. Pregnant women of EM groups often focused on monitoring fetal health when using ANC services, while the important roles of regular monitoring of maternal health were less focused. In particular, EM women tended to have less access to ANC services to check their health when they had a good feeling or did not have obvious abnormalities (McKinn et al., 2019). Besides that, EM women had less possibility of accessing ANC services and childbirth at medical facilities, and EM parents were less able to search for health care for their children when sick (McKinn et al., 2017). With regard to the disparities in ANC, the rate of EM pregnant women aged 12 to 49 years old who had access to ANC at health facilities was only 70.9%, significantly lower than this rate in Kinh women at 99.3% and the national rate at 95.8% (UN WOMEN, 2017). Pregnant women in several EM groups had a significantly low percentage of ANC checks at health facilities during pregnancy, for example, La Hu at 9.1%, Ha Nhi at 25.4%, Si La at 25.5%, La Ha at 31.9%, Mang at 34.9%, Mong at 36.5%, etc. Related to geographic regions, the percentage of EM women receiving ANC checks was the lowest at 66.6% in the Northern Midlands and Mountainous Regions, following the Central Highlands at 70.5% (UN WOMEN, 2017). Notably, EM women residing in rural areas had an increased risk of the impossibility of delivery in health facilities. This risk of EM women increased nearly twentyfold from 2010 to 2011 instead of fivefold in 2006 compared to the Kinh/Hoa women (Målqvist et al., 2013b). In addition, EM girls and women had inadequate access to medical services during pregnancy and childbirth.

EM women were afraid of going to ANC examinations or accessing medical facilities when giving birth due to some main elements, including linguistic barriers, low living standards and access to medical services, low educational attainment, further geographical distance, shortage of conveyance, and rugged mountainous terrain. These issues led to inequalities in the utilization of healthcare services among ethnic groups (McKinn et al., 2017; Hoa et al., 2022). Lastly, the rate of postpartum health examinations of mothers and children in rural areas was significantly lower than in urban areas, 87.0% compared to 94.3%. Whereas, the rate of postpartum health examinations among EM groups was only 61.0%. This figure was much lower than the rate of postpartum checks in the Kinh/Hoa group at 94.8% (Lam et al., 2019).

(10) EM women were less likely to engage in wage employment:

In Vietnam, EMs had few opportunities to participate in wage employment. The wage employment rate among EM women was lower than that of Kinh/Hoa women, 37.9% versus 43% (UN WOMEN, 2015). The EM female groups with the lowest salary employment percentage included H'mong at only 23.7%, Muong at 29.8%, and Thai at around 32.7%. Moreover, the percentage of EM females working for wages was often lower than that of men. In rural areas, the rate of EM females working as self-employed or unpaid workforces of families in the agricultural sector was up to 77.1%. The highest percentage of EM females self-employed in the agricultural sector belonged to Muong at 90%, Nung at 90.5%, Thai at around 92%, and Hmong at up to 98.7% (UN WOMEN, 2015). Limited access to education and external societies contributed to fewer possibilities for salary employment or off-farm work for EM females (UN WOMEN, 2015). In addition, in 2014, the percentage of trained EM female employees was 7.2% lower than that of Kinh and Hoa female employees at 17.6%. Especially, trained female workers in the Hmong ethnic group were the lowest at only 1.4% (UN WOMEN, 2015). The rate of trained professional skills among EM women was only 5.7%, and it had no significant difference compared to this figure for men at 5.7% (UN WOMEN, 2017). Regarding disparities among EM workers, working EM groups aged 15 years and over had much lower education and technical skills than Kinh people. In 2015, the national rate of laborers aged 15 years and over who had received training in technical expertise was 3.5 times compared to this rate for EM groups, with 19.9% versus 5.7% (UN WOMEN, 2017). EM employees participated

the most in the simple working groups at 67.7%, and very few EM employees took on jobs that required knowledge and skills at medium and high levels, such as managers and intermediate or advanced professionals (UN WOMEN, 2017). In a Vietnamese study of eight mountainous and coastal provinces in the Southern and Central Coastal Regions, the majority of EMs resided in mountainous areas, and up to 83.1% worked in informal jobs such as housewives or self-employed workers (Ha et al., 2015). Particularly, women working informal jobs were inadequate access to and use of ANC services. While women with formal employment were higher possible access and utilization of ANC4+ services compared to women with informal jobs (Ha et al., 2015).

4.1.5 Policies:

At the final level, the policy level identified the existing issues of laws and policies that have changed and impacted access to health care for ethnic minority mothers and children.

(1) Policy and legal framework regarding EMs in Vietnam were fragmented, overlapped, and confused in the implementation:

Although the Committee for Ethnic Minority Affairs (CEMA) was the state agency that managed issues regarding ethnic minority people, the policy and legal framework related to EMs in Vietnam were fragmented and overlapped because regulations linked to EMs occurred in various legal documents (UN WOMEN, 2015). Some limitations existed in the systematic policy on healthcare access for EMs, including lack of synchronization, overlapping, inadequate specific management policies, unsustainable policies, and particularly the shortage of resources to secure the effective implementation of those policies (Loi, 2021). Related to an illustrated example of these issues, a study by Loi showed that the issuance of health insurance cards to EMs in some localities was not timely and slow; the duplication of health insurance cards for beneficiary subjects; confusion in making statistics and creating a list of EMs; It was not clear and complete to determine who was beneficiary to health insurance under the provisions of the Law on Health Insurance and Decree 105 of the Government. On the other hand, people who went for medical examinations and treatment did not bring health insurance cards, and the lack of identification documents with photos, and referral papers, etc. contributed to obstacles to hospital admission and treatment (Loi, 2021).

(2) Efforts to improve EM health were driven by an assimilation policy rather than culturally specific strategies:

Objectives of policy programs aimed at some regions with a larger percentage of EMs than EM groups suggested that exertions to improve the health outcomes of EMs were driven by assimilation policies rather than cultural-specific strategies. In fact that there were many services and related information, which not provided in the local language or the language of each EM group. In the historical process, there were assimilation policies to promote Vietnamese culture and language. There were pieces of evidence that government policies and bureaucracy had placed limitations on the study in EM areas (Målqvist et al., 2013a). Some authors also confirmed the policy issues that disregarded local traditions and customs in various fields, such as reproductive healthcare, malaria, and sanitation. As described by ethnologists, these were seen as an indication of Kinh's hegemonic perception of EMs. In combination with socialist ideology accentuated Vietnamese unification and boosted Kinh tradition and culture as a criterion (Målqvist et al., 2013a). Regarding the Health Care Fund for the Poor (HCFP), a chosen sample of difficult communes, mostly in remote mountainous regions with a high rate of EMs already been targeted. Approximately 15% of the total population was eligible for assistance and benefited from HCFP under this access, and the impact was unclear. Thanks to HCFP, there were positive changes in healthcare access and decreased risk of catastrophic expenditure in priority localities. However, there was no evidence of changes in using healthcare services in recent results and accompanied by a considerable decrease in out-of-pocket spending. Whatever the HCFP results, this was considered an obvious demonstration of neglecting ethnic diversity by enforcing a similar program in all appointed regions. These could be a reason for its unclear effects (Målqvist et al., 2013a). In addition, related to EM languages, EM groups maintained bilingual utilization initially, including a common language (Vietnamese) or a common language of EMs in their region, and the mother language of EMs was rarely used, only used in family activities. The majority of EM women worked and took care of mainly their children. Therefore, EM women play a primary role in preserving and teaching their ethnic language to the next generation. Over time, the amount of EM people who speak their ethnic language decreased to 64.5% in the group under 18 years old, while in the group 65 years and over, it was 98.5% (UN WOMEN, 2017).

(3) Government policies and programs appeared to lack cultural adaptation and sensitivity to EM communities:

In Vietnam, EM groups were considered national treasures and represented the cultural diversity country. However, regarding historical progress, EM groups were the subject of reforms from the Vietnamese government to improve their socioeconomic status, while most had sidelined the cultural tradition of EMs. EM groups were presented as poor development and backward groups in governmental policies, while the Kinh was described as more socioeconomic progressive. Under the promotion of these policies, EMs changed their lifestyles. Because the traditional practices of EM groups were believed to be a factor in poverty and illnesses in these groups (McKinn et al., 2017). Besides, the general perception of the Kinh people was that most of the EMs were one entity. EMs were described as culturally different from the Kinh within the formal education system and the modern media. This concept of this different group even grouped many cultures from each other into a unification with a typical denominator of poverty, slower development, impotent, and simultaneously colorful and strange (Målqvist et al., 2013a). The fact that EM groups were being left behind systematically hindered the progress of reducing malnutrition at the national level in Vietnam. The rationale proposed for these difficulties was that governmental policies and programs might not be responsive and adaptive to the culture of EMs. Additionally, there were reflections on the negative attitudes and biases towards EMs of medical staff. A significant part of recognized EM groups reported that they were unable to appropriately access the government-developed programs for their separate regions (Kien, N. T et al., 2022). Finally, national policies and programs were inadequate and lacked cultural sensitivity and adaptation for EM groups (Målqvist et al., 2013a). Due to the lack of cultural sensitivity to programs and interventions, barriers related to culture and language became obstacles to EM groups in accessing healthcare services (Målqvist et al., 2013b).

(4) The transition from a government-financed health system to a more market-oriented approach, and the HCFP tended to repay for higher-level healthcare facilities and also inpatient care (provincial and district hospitals):

Informal expenditures, a rising private healthcare sector, and the weakness of public health insurance created inequalities due to people's affordability,

and the disparity in income in society was growing. Moreover, social complexity was increasing under the influence of modernization, which was reflected in fewer opportunities for people with low education levels. In particular, compared with other disadvantaged groups, EM groups were even more vulnerable in the current stage of economic transition in Vietnam (Målqvist et al., 2013b). A large challenge was the lack of control over private healthcare providers or medication sellers. Specifically, studies showed that under operating the eligible private healthcare providers or medication dealers, women were increasingly able to access and utilize medications. Thus, it could lead to a delay in an adequate and timely diagnosis. Although the Vietnamese government strived to transition to a viable financial system for the health system and highlight healthcare for the poorest parts of the population, health outcome disparities based on socioeconomic status still existed, and the equity gap was possible to widen in the current rapid socioeconomic development (Målqvist et al., 2013a).

Related to Health Care Funds for the Poor, the program tended to repay higher-level healthcare facilities and inpatient care, particularly most of the budget distributed to provincial and district hospitals (Målqvist et al., 2013a). However, the coverage of the HCFP program was considered an origin of inequality. Although the program's object was to target groups including the poor people, EMs who lived in objective provinces, and households who resided in difficult commune areas, the program was mainly aimed at the poor people and less than mention of the rest of the two groups (Målqvist et al., 2013a). A study by Loi indicated that the nation's health insurance policies and local support measures had raised health insurance coverage and decreased healthcare expenditures for many EM families. However, there were still drawbacks related to health insurance payments. Regarding EM groups similar to Kinh in terms of the high rate of using health insurance cards in medical examination and treatment, the actual costs that insurance organizations paid for EM groups were lower because they mainly had access to basic medical services at local healthcare facilities, where the expenditures of medical examination and treatment were lower (Loi, 2021). Finally, the objects were the obligation to provide medical examination and treatment: There were many drawbacks to the policies and laws in health insurance, and the inappropriate payment methods of health insurance and support for inpatient treatment costs from insurance facilities waited for a long time (Loi, 2021).

(5) Limited access to various government subsidy programs and welfare benefits of EM groups, and the low coverage of ANC for EM women:

In Vietnam, EM groups often reside in remote sites, lack social and material properties, and have limited entry to various government welfare and subsidy programs (Lee et al., 2016). A study by McKinn et al. mentioned that ethnic inequality was also the outcome of low funding for physical and human capital. Investments such as financial subsidies in house building, agricultural funding, interest-free loans, and objective poverty decrease policies could be low effects because of societal discrimination (McKinn et al., 2017). Furthermore, the long-term impacts were not easily repaired related to the harmful influences of the COVID-19 pandemic on health equity and the protection of vulnerable groups, especially EM groups from health crises. This matter was a challenge to national reserves that were being heavily stressed by public spending to alleviate the effect of the pandemic and also by inequality (Dang & Nguyen, 2022). In addition, the percentage of EM households who had never approached preferential credit was still higher than that of the Kinh people. EMs usually accessed credit from social policy banks instead of commercial banks, and the mean loans were approximately five to seven million Dong. Particularly in female-headed households, the credit loan situation was considered more difficult and serious, which related to EM women not owning property that could be utilized as collateral (UN WOMEN, 2015).

The ANC coverage rate for EM women was lower than the nation's average level, with approximately 96% of Vietnamese women receiving ANC examinations at least once during pregnancy. However, one in five EM women did not get any ANC during pregnancy (UN WOMEN, 2015). Although the importance of ANC had been proven, in Vietnam, all pregnant women did not access a package of reproductive healthcare services according to the standardized bundle recommended by HOM in the national guidelines for reproductive healthcare services. Additionally, the overall ANC coverage rate in Vietnam had increased significantly in Vietnam. However, there were notable differences in access to ANC services based on the demographic, socioeconomic, and environmental characteristics of personal pregnant women (Kien, V. D et al., 2019). A study predicted that the RMNCH coverage services at the national level will reach 80% by 2030 and be mostly affluent except for the poorest group. Of these, the Northwest, Central Highlands, and Northeast were forecasted

to have the lowest coverage level, and the Northwest did not achieve the goals by 2030 (Nguyen, P. T et al., 2021).

(6) Shortage of disaggregated data by ethnicity, and the distribution of medical force in Vietnam was uneven:

In reports of large censuses and surveys, there was a serious shortage of ethnicity-based analyses. Specifically, the Demographic and Health Survey in 2002 and the AIDS Indicator Survey in 2005 mentioned ethnicity during data collection, but in presenting the results did not describe ethnicity as an independent variable. The survey results only presented the crude mortality rate of an EM group in the Population and Housing Census in 2009. In the 2006 and 2008 Vietnam's Household Living Standards Survey, ethnicity was considered an independent variable, but no additional analyses other than the crude data shown in the General Statistics Office reports. Failure to disaggregate data by ethnicity would enhance the invisibility of ethnic inequity and contribution to the structural violence it manifested (Målqvist et al., 2013a). Although the Vietnamese MOH comprehended the problems associated with postpartum health examination and their overall effect on monitoring progress in MNCH interventions, postnatal care data were not systematically gathered before 2014 (Lam et al., 2019).

Finally, the distribution of healthcare workers in Vietnam was uneven, particularly with fewer and fewer qualified healthcare facilities and healthcare workers in remote and mountainous areas (McBride et al., 2018b).

4.2 Discussions:

This section provided discussions of the research results obtained above. The main contents of the discussion part included the governmental role, policies, international guidelines, lessons, and recommendations in addressing vulnerability and inequalities in health outcomes among EM groups, significantly aiming at maternal and under-five child health.

4.2.1 The situation of the pathways to vulnerability and inequality in maternal and under-five child mortality rates among EMs:

Results from our research have shown that EM groups have higher vulnerability and inequality in maternal and under-five child mortality rates than the national average and the majority ethnic group (Kinh and Hoa ethnic groups). These pathways to vulnerability and inequality existed at all five levels of the conceptual framework that our study has developed (Figure 1), from the individual to the policy level. Regarding pathways to vulnerability and inequality in maternal and child health outcomes at the individual level, the mother's ethnic factor was identified by researchers as a primary structural determinant of inequality in maternal, newborn, and child healthcare outcomes (McKinn et al., 2019). The study by Lam et al. showed that newborn health examinations in EM groups had lower rates. Explanations for this could be related to different health-seeking attitudes and behaviors toward postnatal health checks for newborns (Lam et al., 2019). In addition, low income and low education attainment increased the vulnerability and inequality in access to healthcare for EM mothers and children. Specifically, studies showed that EMs had the lowest income levels, and the income gap was a strong determinant of increasing inequality in health outcomes between EM groups and the Kinh/Hoa ethnic group (Dang & Nguyen, 2022). Limited understanding of pregnancy and childbirth complications, as well as EM people's lack of skills in antenatal care or childbirth at home led to poorer MNCH behaviors, and neonatal mortality rates were higher among EM women and their children (McBride et al., 2018a). At the relationship level, the rate of EMs living below the poverty line was 5.7 times higher than the Kinh/Hoa group. Poor household-economic status has limited EMs from fully accessing resources to improve their health, leading to inequalities in

health outcomes among EM groups (Dang & Nguyen, 2022). Studies also highlighted that EM women lack decision-making power, and traditions and patriarchal structures within EM groups have contributed to maintaining health-harming behaviors among this population (Målqvist et al., 2013a), simultaneously affecting access to healthcare services and seeking medical care of EM women (Målqvist et al., 2013a). The cultural and linguistic barriers have become obstacles for EM women to access healthcare services in Vietnam, in which linguistic barrier was considered a determinant affecting inequality in health outcomes among EMs (Dang & Nguyen, 2022). At the organization level (focused on health facilities), a study by Loi found that there was limited capacity to manage complications, emergencies, and maternal healthcare, and a lack of human resources, medical equipment, and poor infrastructure at local health facilities (Loi, 2021). Particularly, discrimination based on ethnicity in the health system, with evidence EM mothers still had a higher risk of neonatal mortality than Kinh mothers when giving birth in a health facility (Målqvist et al., 2013a). Besides, there was inequality in levels of availability and accessibility to full immunization coverage in EM living places (Vo et al., 2019). The fourth level identified pathways from the community. Studies by McBride et al. showed that residence in remote, rural areas was believed to cause profound disparities in health outcomes among EMs, and this was a determinant of their relatively poor health status (McBride et al. al., 2018a; McBride et al., 2018b). Simultaneously, EMs had low access to health information and education. Many EM women did not have enough opportunities to obtain more health information to better understand pregnancy, childbirth, and the health of themselves and their children (McKinn et al., 2017). Early marriage and consanguineous marriage (CM) among EM groups remained, resulting in reduced quality of the next generation by increasing the proportion of children with congenital malformations in EM groups (Kien, L. T., & Thu Nga, 2018). Anemia was still common in pregnant, postpartum, and non-pregnant women among EMs (Målqvist et al., 2013a), and affected health and quality of life as well as increased the risk of adverse maternal and infant health outcomes (Kien, N. T et al., 2022). Notably, backward traditional practices surrounding birth restricted access to healthcare services (Lee et al., 2016) as well as had slowed down the decrease of the child mortality rate in EM communities (Lee et al., 2016). Lastly, the policy and legal framework related to EMs in Vietnam were fragmented and overlapped

(UN WOMEN, 2015). In addition, there was a lack of uniformity, inadequate specific management policies, and a lack of sustainability and resources to ensure the effective implementation of these policies (Loi, 2021). National policies and programs appeared to be inadequate, lacking cultural sensitivity and adaptation towards EM groups (Målqvist et al., 2013a). Therefore, cultural and linguistic barriers become obstacles to access to healthcare services for EM groups (Målqvist et al., 2013b). Health Care Fund for the Poor (HCFP) tended to repay higher-level healthcare facilities and inpatient care (provincial and district hospitals) (Målqvist et al., 2013a). While EMs mainly accessed basic medical services at local health facilities, where medical examination and treatment costs were lower (Loi, 2021). In particular, there is an uneven distribution of the medical force in Vietnam, with fewer and fewer qualified healthcare facilities and healthcare workers in remote and mountainous areas (McBride et al., 2018b).

4.2.2 Vietnamese governmental roles and responses in addressing vulnerability and inequalities in health outcomes among EM groups:

Preparedness of the health system and policies from the government to adequately provide MNCH healthcare services despite challenges were immediately necessary interventions (Liabsuetrakul, 2022). This research made discussions as follows:

(1) Strengthening policy implementation in universal health coverage (UHC) for EM people:

In 2010, the national agenda for developing health systems approved UHC. The Government conducted a series of policies and reformations to reach UHC goals (Dang & Nguyen, 2022). According to the UHC policy, everyone has a right to access necessary healthcare services with adequate quality care and prevent disaster by financial burden (Liabsuetarkul, 2022). Regarding the coverage of healthcare services, there were significant efforts in health facility coverage in EM areas by the government. In 2015, there were 4113 commune medical centers in all EM communes, including 2788 permanent medical stations, 1276 semi-permanent medical stations, and 49 others (Loi, 2021). Health facilities in the Central Highlands provinces, comprising Gia Lai, Kon Tum, Dak Lak, Dak Nong, and Lam Dong, increased rapidly and formed a medical network coverage rather expansive with around 607 commune health stations and village health workers constantly increasing. Currently, the General Hospital of Central Highland region has a scale of 1200 beds that has officially operated, helping to increase

opportunities to access modern and high-tech medical services while saving costs for EM patients (Loi, 2021). Related to strengthening the number of health professionals in mountainous and EM areas, thanks to the policy of rotating doctors from district hospitals to commune health stations to work, the number of doctors at commune health stations has increased (Loi, 2021). In addition to the medical staff at the commune health stations, communes also had health workers in the villages and hamlets participating in health examination and treatment of basic diseases, providing primary healthcare to victims, or delivering babies to pregnant women who could not reach health facilities. It was estimated that 41121 out of 48364 villages of EM areas had medical staff (equivalent to 85%) (Loi, 2021). To increase accessibility to health services for EMs, the government promulgated the health insurance law to ensure all people can participate in health insurance, regardless of ethnicity, gender, religion, health status., etc., as stipulated in the 2013 constitution and the 2014 health insurance law. Generally, many localities have achieved the goal of providing health insurance cards for EM communities, thereby increasing opportunities to access appropriate and affordable healthcare services for EMs (Loi, 2021). More than a past decade, according to MOH reports in 2021, the rate of health insurance coverage in Vietnam has risen over time, specifically in 2012 at 65%, in 2015 at 75%, and in 2021 up to 91% (Dang & Nguyen, 2022).

(2) Responses through policy, law, and national guidance to improve people's health outcomes:

Vietnamese Government had gradually constructed an advantageous environment for protecting and improving people's health. Resolution No. 20-NQ/TW was issued on October 25th, 2017, which had the contents focusing on the target groups of EM groups, households, and businesses distributed in mountainous and ethnic regions (Dang & Nguyen, 2022). In 2017 the Law on Medical Examination and Treatment was revised and identified as one of the most vital reformations conducted by the government to guarantee the expense of health services was appropriate at entire levels and had become a vital legal basis for decreasing healthcare inequalities (Dang & Nguyen, 2022). In addition, the Vietnamese government issued the National Nutrition Strategy for the periods of 2001 to 2010 and 2011 to 2020, which was considered the ensuing formal document to control nutrition policies across the country. Overall, after more than 20 years of conducting National Plans with a comprehensive approach,

inter-sectoral coordination, and the direction of authorities at all levels contributed to considerably improving the nutritional status of Vietnam's population. At the same time, it also increased the perception of nutrition problems among Vietnam's people (Kien, N. T et al., 2022).

(3) Implementation and results achieved from the policies of the government and local authorities:

Regarding achieved outcomes, Vietnam's healthcare system has four levels, comprising the central level, provincial level, district level, and commune level. Women accessed ANC services supplied by the primary healthcare system from district hospitals and commune healthcare centers. Thanks to efforts of development and coverage in the healthcare system, Vietnam's Government achieved remarkable results in providing maternal healthcare over the past few decades. Specifically, Vietnam had reached SDG 3.1, with the maternal mortality rate falling to 60 per 100 000 live births in 2014 comparison with 233 per 100 000 live births in 1990 (Kien, V. D et al., 2019). Besides that, based on the universal health coverage (UHC) of the public health system, Vietnam also reached some positive outcomes in healthcare, significantly primary healthcare at the district levels and commune health stations. In 2019, Vietnam's primary healthcare infrastructure included 700 district hospitals and 11083 commune medical facilities, with around 49544 hospital beds. The primary health facilities were available across localities which were seen as considerable efforts by the authorities and Vietnam's healthcare system to provide access to essential healthcare services for the population (Le et al., 2021). Vietnam's healthcare system has experienced significant modifications by governmental development policies. Particularly, authorities promoted a decentralized system toward autonomous service facilities, reformed universal health insurance, and enhanced primary healthcare improvement. The effective functioning of Vietnam's pyramidal health system played an important role in overall Vietnamese success in responding to the COVID-19 pandemic (Nguyen, P. T et al., 2021).

(4) Governmental efforts to intervene and change the current situation:

The study in 2014 found inequality in most of the RMNCH indicators, and there were no modifications in inequality for more than 15 years in several of the lowest coverage indexes at the levels of social economy, and regions.

This situation reflected the ineffectiveness of some current programs for healthcare, and improving the healthcare system was necessary before the Vietnamese government could reach the UHC goals (Nguyen, P. T et al., 2021). A study by Le et al. for a mountainous province in 2021 indicated that the geographical distance of people to the health stations in the study was not too far. These findings showed the governmental efforts in coverage of the basic healthcare system in the localities of mountainous regions (Le et al., 2021). Related to EM traditional cultures, gender prejudices in education created barriers to development for EM girls. EM parents prioritized educational development for boys in terms of higher education levels. Thanks to the development and considerable assistance of the Vietnamese government, the concept of preference for sons in the EM communities changed. Currently, EM girls enrolling in school significantly increased, but a notable percentage of EM girls are still at risk of dropping out of school, early marriages, and teenage pregnancy (Hoa et al., 2022). In addition, Thai Nguyen province applied technology to improve the health service delivery capacity of the provincial health system, conducted training for healthcare staff at several levels of the health system, improved management, and provided healthcare services to people across the province. The objective was toward disparities reduction in health outcomes among EMs living in the province (McBride et al., 2018a).

4.2.3 International guidelines and examples of the best practices:

Through research, we drew general international guidelines and the most appropriate practices to reduce the mortality rates of mothers and children under five years old in EM areas, including:

(1) Antenatal care (ANC):

Recently, the WHO guided that all pregnant women should have ANC checks at least eight times during pregnancy. The utilization of ANC services helped to detect abnormalities and obstetric complications early in pregnancy, thereby reducing maternal mortality. However, low-income countries were more appropriate to previous WHO recommendations for women with uncomplicated pregnancies to have four or more antenatal care (ANC4+) checks and need to measure blood pressure, blood and urine tests, weight and height checks for every examination, as well as adequate evidence-based clinical interventions, including tetanus vaccination, iron and folic acid supplementation, maternal health content counseling, and ready preparation

for delivery and emergencies (Ha et al., 2015; Kien, V. D et al., 2019). Similarly, a study by Ha et al. showed that ANC services provided by qualitative healthcare providers to pregnant women would help to improve maternal and child health outcomes and contribute to increasing the number of childbirths at medical facilities and using postnatal care services (Ha et al., 2015). Evidence from studies in Sri Lanka and Malaysia demonstrated that women tended to stop utilizing traditional health care at home during pregnancy when pregnancy care services were available in health facilities (McKinn et al., 2019). This was considered one of the most important solutions in reducing maternal and neonatal mortality to achieve the SDGs in the future (Ha et al., 2015). However, during uncomplicated pregnancy, pregnant women with below three ANC examinations were likely to have raised perinatal mortality in LMICs, including Vietnam. In addition, the widespread utilization of ANC4+ services was seen as a global standard, known as the level of ANC adequacy (Ha et al., 2015). Providing ANC services and skilled assistance during childbirth was a broadly recognized strategy to reduce maternal and neonatal morbidity and mortality. Adequate access to ANC services was linked to higher neonatal survival and was a vital factor in determining safe childbirths for mothers. Although the ANC could not screen for all potential obstetric complications, the ANC was broadly recognition for bringing an opportunity to detect and determine the risks during pregnancy, providing knowledge for early recognition and appropriate responses to threatening warnings, as well as monitoring and supporting maternal healthcare (McKinn et al., 2019).

(2) Postnatal care, and support to maternal newborn and child health (MNCH) information:

The postnatal period and during the next 48 hours were appreciated to be at the highest risk of maternal mortality. Therefore, the assistance of skilled delivery caregivers when giving birth in health facilities or at home remained an important intervention to reduce the risk of maternal and neonatal deaths (McKinn et al., 2019). Additionally, guidelines for postnatal care for mothers and infants had been released by WHO, which emphasized the importance of healthcare in the first six weeks postpartum because this stage had an influence on maternal and neonatal lives. Most maternal and infant deaths occurred in this stage, with an estimated around over one million infants dying on the first day of life annually (Lam et al., 2019). Related to the global growth

of low-cost mobile phone services, it promoted mobile health initiatives to apply to LMICs in maternal and newborn healthcare. As a result, it increased considerably in access and utilization of MNCH services, especially ANC and postpartum care services. Mobile health interventions also supported positive MNCH behaviors in infant feeding, post-abortion contraception, utilization of healthcare services, and immunization in many countries such as China, Malawi, Cambodia, Nigeria, and Bangladesh. Besides that, studies also presented that mobile health interventions could help improve employee efficiency and data monitoring (McBride et al., 2018b).

4.2.4 Activities in Vietnam compared with other countries or the best practices in improving maternal and child health:

According to WHO's previous recommendation, all mothers with uncomplicated pregnancy had to receive ANC4+ visits at least four times in the fourth, sixth, seventh, eighth, and ninth months during their pregnancy. However, there were differences among countries in the recommended frequency for utilization of ANC services, which was usually higher in HICs. For instance, the basic healthcare program for pregnant women in Norway had eight ANC visits during pregnancy (Ha et al., 2015). This case was consistent with the recent WHO recommendation that all pregnant women had to have eight times ANC examinations or more (Kien, V. D et al., 2019). While in Vietnamese national guidelines on reproductive healthcare suggested that mothers with uncomplicated pregnancies needed to receive at least three times ANC visits or more. The frequency was one time per every quarter, with appropriate examination services for each ANC visit (Ha et al., 2015). This difference in the recommended number of ANC visits might be related to socioeconomic conditions and the healthcare system capacity in Vietnam. A change by the Vietnamese government in health information management was the ANC4+ services that were supplemented to the medical information system as an official index in September 2014 (Ha et al., 2015). Studies related to ANC in Vietnam showed a rising trend in the proportion of using ANC4+ services. Specifically, in 2010 this rate increased from 24% to 59.6%, and in 2014 it was from 25% to 73.7%. The potential explanations for this development could be attributed to socioeconomic growth and efforts to improve investment and raise the perception of maternal and child healthcare over the past few decades from the Vietnamese government (Ha et al., 2015). In comparison, the average rate of using ANC4+ services in developing countries was

52%, which was lower than in Vietnam. However, this rate of countries in Southeast Asia at 80% was higher than that of Vietnam (Ha et al., 2015). A study had shown that the process of economic transformation was taking place rapidly in Vietnam. Developments in infrastructure and the middle class contributed to expanding and improving the healthcare system, decreasing obstacles from geography and economy to healthcare for people. However, the equity gap was enlarging, and some disadvantaged groups with vulnerable status were still left behind (Målqvist et al., 2013b). Unlike Vietnam, in China, there was a large disparity in maternal mortality rates between rural and urban inhabitants, but without proof to prove the equity gap was enlarging due to expanding economy. Otherwise, Thailand's government made many efforts to reduce the equity gap in providing maternal healthcare services by applying universal health coverage and poor policies (Målqvist et al., 2013b).

4.2.5 Lessons and recommendations about future strategies to address inequalities in maternal and under-five child mortality rates among ethnic minorities in Vietnam:

These research results have shown the seriousness of inequality in maternal and under-five child mortality rates and the vulnerability of EM groups. To minimize the consequences of the above situation and shorten the gap in health outcomes among EM groups, our research offered recommendations and lessons:

(1) The best practices in maternal and child health care:

Early and exclusive breastfeeding were the most effective solutions to decrease infant and preterm infant mortality. Estimated exclusive breastfeeding was likely to prevent over 3000 mothers' and children's deaths, save the health system \$1.5 million, and generate \$1.8 billion for the Vietnamese economy yearly (Nguyen, P.T et al., 2021). Nevertheless, health improvement associated with WHO's main family behavior was strongly impacted by the health and socioeconomic understanding features in households. Interventions to improve maternal health education and knowledge and to integrate the participation of husbands and older adults might be appropriate for short-term objectives (Nguyen, P. T et al., 2021). Based on experienced lessons from other nations in moving towards gender equity and women's empowerment, the Vietnamese government needed to incorporate these aspects into their national activity

programs in improving UHC and the results of health-associated SDGs in the long term (Nguyen, P. T et al., 2021).

(2) Ensure vaccination coverage and access to improved water sources and sanitary conditions:

To exclude or prevent highly infectious illnesses such as measles, the Vietnamese health system needed to preserve herd immunity in all childbirth groups at the local level by regular surveillance of population immunity levels to determine the groups that were left behind, and surveying immunization situations based on checking at the time of children's admission to the school in close cooperation with both the MOH and the Ministry of Education (Nguyen, P. T et al., 2021). Besides that, multi-component intercessions to improve immunization knowledge and perception needed careful consideration and integration into national health programs to deal with vaccination hesitance, which was one of ten global health threats (Nguyen, P.T et al., 2021). Regarding water sources and sanitation, EM groups were needed more investment to raise access to improved water sources and sanitary conditions. EMs in the Northern Midlands and Mountains needed more attention about investment programs due to their place of residence in the most disadvantaged areas, and simultaneously, there was the lowest access to improved water sources and sanitary conditions compared to other areas across the country (Huong et al., 2020). Educational development for EM people needed more consideration because knowing the Vietnamese language to comprehend the significance of access to improved water sources and sanitary conditions to reduce the risks to their health. Therefore, they could be better accessible to improved water sources and hygienic conditions (Huong et al., 2020).

(3) Improving support to the force of village healthcare workers and adapting to EM culture in healthcare services:

The health system in EM areas had larger accountabilities in meeting healthcare services that were culturally suitable to EM communities, notably at the local health levels. Healthcare services in EM areas were not only a site to operate pure medical techniques but also ensured the cultural sensitivity of the EM communities. In addition, health facilities needed adaptation, patience, and harmonization with the various perceptions, cultural customs, and beliefs of Vietnam's EM groups (Loi, 2021). Besides, the high-risk groups needed more attention in efforts to reduce health disparities

among ethnic groups by developing technical prevention and control that solve socio-cultural and diet characteristics of anemia in EM people (Kien, N. T et al., 2022). Regarding the development of village health workers, many EM provinces have constructed and developed the village midwifery model and received positive results, with about 3000 village midwives trained for nine months on providing safe motherhood services. Although they remained limitations, these limitations could be overcome thanks to the active assistance of the health sector and local governments (Loi, 2021). Healthcare services were provided by village midwives that contributed to adapting to culturally sensitive issues of EMs, especially EM children and women. Because these village midwives were EMs and shared the same traditions, cultures, and religions, they could advocate for providing safe mothering services in EM languages at home. Consequently, their interventions would meet culturally appropriate standards at a certain level among EM communities and could harmonize cultural conflicts with human rights in healthcare, especially women's rights (Loi, 2021). In addition, village midwives were considered a partial solution for the lack of medical human resources at health centers and local health facilities in EM regions to increase access to healthcare services for EMs in the localities (Loi, 2021).

(4) Reformations related to policies:

The Vietnamese government needed to concentrate on governmental reformation to promote economic equality and fulfill the goals of poverty reduction over localities in achieving sustainable and equality developments (Nguyen, P. T et al., 2021). Vietnamese authorities could refer to the management lessons in the decentralized governmental reformations from China. This bordering country had similar systems in politics and administration to Vietnam. These lessons included increasing investments and competition for resources among local governments; giving more autonomy to local governments with effective operations; vesting more resources, and adding centralized controls to inefficient governments to assist them in competing reformations (Nguyen, P. T et al., 2021). Regarding decentralized reformation based on performances, it was likely to motivate economic developments in entire localities with abundant competencies and features, effectively decrease poverty, and especially rural healthcare improvements and regional growths. Simultaneously, the Vietnamese health system should have the necessary preparations for complex disease patterns in rural regions and the increased

need for medical services with high quality and technique at primary health centers shortly. Hence, it would restrict the centralization of medical technology into wealthy urban areas and ensure that all regions across the nation could access and profit from prospective investments in advanced technological medicine. Moreover, it helped guarantee Vietnam's UHC program achieved efficiency through healthcare services that had high qualities and human-centered approaches (Nguyen, P. T et al., 2021). As regards the health approach in every policy, it could help to increase sustainability and consistency in healthcare access. This approach needed to closely cooperate among stakeholders, who had the best comprehension of the contexts of the community's health to include health in surveilling and making decisions (Dang & Nguyen, 2022). At the same time, it demanded strong engagement from policymakers and healthcare service providers, contributing to increased belief and distribution of accountabilities for different stakeholders (Dang & Nguyen, 2022). Related to efforts in decreasing health inequalities, Vietnamese and global efforts had to be comprehensive, and interventions for vulnerable populations had to be constructed based on material wealth as well as ethnic and educational factors (Målqvist et al., 2013b).

(5) Collaboration with stakeholders:

MOH needed to participate with various stakeholders to take advantage of current resources and finances and promote general activities (Dang & Nguyen, 2022). Specifically, close collaboration with ministerial-level agencies related to ethnic issues such as The Committee for Ethnic Minority Affairs (CEMA), was essential in implementing programs to ensure equality in healthcare for EM groups. CEMA has established the Department on Ethnic Minority and Committee for the Advancement of Women to work on gender equity (UN WOMEN, 2015). These agencies were responsible for managing data related to the participation of EMs in politics and public administration and implementing training to develop the capacity of EMs to increase their presence in the government apparatus (UN WOMEN, 2015). Additionally, in Vietnam's National Assembly, there was the Ethnic Council that monitored and evaluated the implementation of ethnic policies and gave recommendations on solutions to the National Assembly for socioeconomic development in the EM regions. Related to activities to promote gender equity towards protecting EM women, Vietnam Women's Union was an organization that has performed projects and programs aimed at EM

women, including reproductive and maternal healthcare (UN WOMEN, 2015). Relevant subjects included civil servants, public employees, state agencies, social organizations, and businesses that needed to change and raise awareness of their roles and obligations to respect and ensure the human rights of EM people (Loi, 2021). In addition to the efforts of the government and local authorities, significant support from the European Union has helped gradually construct a healthcare network including regional and provincial hospitals, district health centers, and commune health stations with an increasing number of healthcare workers in EM areas, thereby increasing access to healthcare services for EM people (Loi, 2021). Simultaneously, there was a need to construct and motivate collaborations among sectors by attracting the private sector to promote efforts for leadership alliances in improving the health system (Dang & Nguyen, 2022). In addition, access to the population with the hugest health disparities and encouraging them to participate in programs for improving health outcomes was considered one of the most promising strategies for addressing healthcare inequities. These approaches required multi-sectoral and interdisciplinary cooperation based on efficient participation and strong assistance from various sectors to aim for general benefits (Dang & Nguyen, 2022).

(6) Strengthening programs to eliminate poverty and reduce disparities in socioeconomic status among regions:

Analyses from previous studies determined health inequalities in Vietnam across many aspects, including socioeconomic situation and residence. Vietnam was a country that had many provinces (63) with various demographic, geographical, and socioeconomic features, divided into eight regions. This regional variety could be considerably related to health inequality among geographic areas. Therefore, surveillance and measurement of these inequalities in the RMNCH by socioeconomic situations, regions, and places of residence were necessary for attaining UHC in Vietnam. This would guarantee proper resource distribution and underprivileged residents would not left behind (Nguyen, P. T et al., 2021). Significantly, studies showed that socioeconomic status was considered the most vital factor contributing to inequalities in stunting and underweight among children under five years of age. Furthermore, socioeconomic status also had a direct impact on the under-five child mortality rate via the underweight pathway. Thus, reducing poverty would decrease the impacts of

socioeconomic status on vulnerable populations leading to reductions in under-five mortality and malnutrition. The findings had much importance for policy formulation (Nguyen, C. M., & Nguyen, M. P., 2020). Reducing the proportion of regional poverty would bring more effectiveness in closing the gaps among regions in terms of the under-five child mortality rate and malnutrition. Additionally, according to recommendations by WHO, nutrition was seen as a component of the poverty decrease strategies. Thanks to these findings, would motivate authorities, healthcare service providers, and NGOs to design interventions to attain more equity for children's healthcare in Vietnam (Nguyen, C. M., & Nguyen, M. P., 2020). Poverty in EM groups was one of the structural factors generating the gap in health inequalities. The solution to this problem required programmatic and policy interventions to address the main challenges due to limitations from geography in integrating EM groups, and people in lagging regions were unable to sufficiently participate in more dynamic aspects of the Vietnamese economy (Dang & Nguyen, 2022). The performance of health insurance policies for the poor and near-poor groups made a vital step in poverty reduction and providing efficient protections for vulnerable groups in society. In particular, the MOH had formulated plans for the efficient improvements of utilizing health insurance for EMs, mountainous people, and poor households. However, there was a necessity to improve the efficiency, potency, and sustainability of healthcare insurance policies (Dang & Nguyen, 2022). Finally, Vietnam's governmental agencies needed to review the co-payment levels in terms of the near-poor group related to medical checks and treatment expenses in solving the problems of long-term treatment of chronic diseases such as hemodialysis, cancer, diabetes, etc., associated with high payments and expenditures in a long time (Dang & Nguyen, 2022).

(7) Improvement of communication and health education in maternal and child healthcare:

The local government needed to promote communication and health education through mass media to raise public awareness. Ensuring people's right to information was a potential approach to improving people's health status and changing self-treatment behaviors at home (Ngo et al., 2021). Dien Bien Province was a small mountainous province located in the northwest of Vietnam. A study by McKinn and colleagues found that health professionals often provided one-way health information

or education and depended on readily written documentaries as an alternative to direct interpersonal interaction. As a result, EM women understood and practiced in different ways. Therefore, healthcare workers need to be patient-centered and implement two-way communication with them to improve interaction and receive information from both (McKinn et al., 2017). In the sociocultural context of EM groups with the concepts that childbirth and newborn care were women's issues, the husband's interest and participation in MNCH was believed to play an important role in improved reproductive health outcomes as well as positive impacts on maternal and child healthcare (Ha et al., 2015; McBride et al., 2018b). Usually, fathers did not know ways to attend to their children or the timing to take their wives for ANC visits, and they also reported that they needed health information to have more knowledge in taking care of their children (McBride et al., 2018b). Therefore, the participation of men should be included in plans and programs to improve women's reproductive health because, without their participation, modifications would become difficult or unattainable. However, specific strategies for the full participation of men were needed, programs assessed based on gender motivation, ways to make decisions and implementations, and the altering demands of both genders and their interactions with each other (Ha et al., 2015). Regarding the behavior promotion of periodic health examinations, research by Ngo et al. identified the importance of communication channels such as loudspeakers, television, radio, and social networks in providing important health information to local people. The role of local healthcare staff in health educational communication in the community was underestimated. Although people were informed about the benefits of periodic health visits, inadequate awareness of this matter led to a decreased trust in this beneficial health behavior. As evidence, in Japan, studies indicated that trust in periodic health examinations was an essential element in motivating the utilization of these services. Consequently, developing cultural and communication content for local people and taking advantage of the popularity of these communication channels to raise perceptions and trust about health behaviors and periodic health visits were necessary (Ngo et al., 2021).

(8) The potential approaches to addressing limited information and perception of maternal and child healthcare among ethnic minorities:

Most ethnic minorities in Vietnam had mobile phone utilization despite their low socioeconomic status. Therefore, the approaches based on behavior

change communication (BCC) were efficient approaches that supported accessing information for maternal, newborn, and child healthcare with messages promoting interaction with healthcare providers. The BCC programs were potential solutions because in the socioeconomic contexts where ethnic minority women were relatively left behind in societal progress and faced the risks of poor health outcomes (McBride et al., 2018b). Besides, a study of mobile health (sending MNCH communication via mobile phone messages) intervention based on BCC in a mountainous province of Vietnam found that before the intervention, mothers rarely contacted and did not inform their health problems until these problems became severe. However, after the implementation of the intervention program, local healthcare workers said that mothers sought healthcare more positively through phone calls to ask for health information and visits to the healthcare centers (McBride et al., 2018b). A manager of a local health center said that nowadays, mothers would take their children to healthcare centers when suffering from a fever or anorexia. While before the program, mothers would stay their children at home. In addition, the knowledge of participant women was also improved (McBride et al., 2018b). Healthcare communication was based on mobile phone messages that helped EM women identify normal and threatening signs to MNCH. Thanks to this project, a Tay woman went to the medical centers to receive support when she suffered from recurrent abdominal pain during pregnancy. The action-oriented information of the interventions assisted mothers and women in detecting threat signs and seeking health care early, thereby enhancing the ability of EM women to obviate and reduce the risks during pregnancy and dangerous complications (McBride et al., 2018b). Recommendations for BCC emphasized using the last user's expected language in communicating, paying attention to cultural characteristics, using two-way approaches during communication, and linking participants to the current healthcare infrastructures (McBride et al., 2018b). In addition, proactively providing MNCH educational information could close the communication gap that EM women faced due to social exclusion. This intervention assisted local women in being more active in seeking healthcare. Mobile health intervention had a high potential to promote equality and was considered a representation of an effective pathway to promote health equity for EM groups residing in remote or mountainous areas in Vietnam (McBride et al., 2018b).

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This chapter presented a brief conclusion of our study. At the same time, it also proposed recommendations for studies in the future that related to inequalities in maternal and under-five child mortality among EM groups in Vietnam.

5.1 Conclusions:

Although Vietnam had achieved the goal of reducing maternal and under-five child mortality rates of SDG 3 formulated in 2015 by the United Nations General Assembly, the inequality of these rates among EM groups maintained a large challenge for Vietnam's government in general and Vietnam's health system in particular. Most EM groups in Vietnam had indicators related to access and utilization of reproductive, maternal, newborn, and child healthcare services below the national average and much lower than Kinh or Hoa ethnic groups (Ethnic groups occupied the majority of Vietnam). The study results showed the pathways belonged to all five levels, including individuals, relationships, organizations, communities, and policies that still existed in Vietnam, leading to increased vulnerability and inequality in maternal and under-five child mortality rates among EM groups. Pathways such as low educational attainments, low incomes, EM women lacking decision-making power in seeking and using healthcare services, limited knowledge of Family Planning, sexual and reproductive health, and linguistic and cultural barriers to women in accessing healthcare services had shown why EM women and children always had a much higher mortality rate than Kinh/Hoa ethnic group. Moreover, the pathways of inequality from the inner of the Vietnamese health system, specifically the health facilities that provide healthcare services for EM people, comprised the lack of human resources and medical equipment for maternity care at the district and commune levels, lack of competence in managing pregnancy and birth complications for mothers in EM areas, and discrimination in health facilities for EMs had created obstacles to using quality medical services provided by skilled medical professionals. In particular, inequalities in mortality rates in two targeted groups of research were related to low rates of access to ANC and postnatal care services

for mothers and infants of EM groups and also obstacles from the place of residence of EM groups in remote and mountainous areas, with rugged traffic terrain and long distance from health facilities leading to difficulties to travel and access healthcare services. In addition, limitations in the implementation of health intervention policies in Vietnam created paths for inequalities in health outcomes for EM groups as well as EM mothers and children. Therefore, the Vietnamese government needed reformations in healthcare policies and management to improve the capacity of health service providers, especially local health facilities in disadvantaged areas such as rural, mountainous, or EM areas aimed to meet the healthcare needs of EM mothers and children. Developing socioeconomic, and reducing economic disparities among geographical regions, effectively implementing poverty reduction programs for EMs. Finally, strengthening communication and health education to change behavior for EM groups on maternal and child healthcare practices surrounding pregnancy and childbirth were considered important interventions in addressing vulnerability and inequalities in maternal and under-five child mortality rates among EMs in Vietnam.

5.2 Limitations and recommendations for organizations, stakeholders, and further studies:

Due to health information and reporting material limitations, the study only focused on analyzing and clarifying the most prominent pathways to vulnerability and inequalities in maternal and under-five child mortality rates that EM groups faced and needed interventions from the Vietnamese government. On the other hand, our research did not mention the relationships or intersections among the levels of the conceptual framework. Therefore, other studies are necessary for further evaluation of this issue to develop programs and strategies that simultaneously affect many levels from individuals to policies aimed to achieve effectiveness and sustainability in addressing inequalities in healthcare outcomes for EM mothers and children. Some of the articles included in our study lacked disaggregated data to highlight inequalities in health outcomes among EM groups. However, these studies also contributed to meeting the research objectives and providing a multidimensional view of the pathways to vulnerability and inequalities in health outcomes of EM groups, especially the groups of mothers

and children under five years old. Besides that, these articles presented suggestions on potential approaches to improve maternal and child healthcare in EM regions. Ultimately, our research offered only potential approaches based on research results for the pathways to vulnerability and inequalities in maternal and under-five mortality rates among Vietnam's EM groups. It did not develop a plan or strategy for government and local authorities in Vietnam. Hence, it is necessary to conduct more research that delves into the analysis of multidisciplinary interventions in addressing inequality in maternal and under-five child mortality to achieve equitable health outcomes for EM groups.



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APPENDICES

APPENDIX A

DATA EXTRACTION MATRIX

A data extraction matrix was developed to extract the relevant pieces of information from each source in accordance with the research question, objectives, and purposes of the research we conducted from 26 sources selected through inclusion and exclusion criteria as well as a PRISMA Flowchart. This data extraction matrix would increase focus on analysis and a better understanding of data and information derived from the research literature, simultaneously allowing us to determine which sources had enough data and information to synthesize both quantitative and qualitative results.

No	Sources selected for full review			Results							Recommended for inclusion for analysis (Yes/No). Short explanation of why	Potential category
	Author/s, Title, Year of Publication, Source (Journal, Name of Organization, Other)	Type of source	Research question and/or objectives and/or purpose	Results of study relevant to review question: What are the pathways of inequalities to maternal and under-five child mortality rate among ethnic minority communities of Vietnam?	Results of study relevant to objective 1: To update the previous work subject of Malqvist et al (Malqvist et al., 2013a) on pathways to vulnerability and inequality in maternal and under-five child mortality rates among ethnic minorities in Vietnam, which was based on data up until 2011, for the situation up until 2022.	Results of study relevant to objective 2: To extend the analysis of the role of governmental agencies and policy in addressing the gaps and inequalities in healthcare outcomes of ethnic minorities in Vietnam.	Sub-objective 1.1: To summarize the situation of the pathways to vulnerability and inequality in maternal and under-five child mortality rates among EMs at the time of the Malqvist et al study using the conceptual framework.	Sub-objective 1.2: To identify and review studies and data related to progress in addressing inequalities in maternal and under-five child mortality rates among ethnic minorities in Vietnam since study of Malqvist et al and to summarize the current situation.	Sub-objective 2.1: Summarize international guidelines and examples of the best practices.	Sub-objective 2.2: To compare examples of activities in Vietnam with examples of best practices and also describe how Vietnam government responses have developed since Malqvist et al study.		
1	Dang, N. A., & Nguyen, T. P. T. (2022). Reducing health inequalities in Vietnam: Implications for health in all policy. The VMOST Journal of Social Sciences and Humanities, 64(3), 65-70. https://doi.org/10.31276/VMOSTJOSSH.64(3).65-70	Article	The study presented the Vietnamese governmental efforts in implementing various measures to reduce health inequalities among specific population groups, especially ethnic minorities.	- There are numerous factors influencing health inequalities. The income gap between ethnic minority groups and the majority group of Kinh/Hoa is a strong determinant of health inequality, which is significant and has been increasing over time. Ethnic minorities belong to the lowest income quintile while the Kinh/Hoa group is of a much higher quintile.	- People in poorer areas are not able to obtain all the healthcare services they need. Meanwhile, the rich have four times higher access to healthcare services as compared to the poor. In addition, poorer citizens in residing in mountainous areas have six times less access to health services than the rich in lowland areas.					- It is necessary to immediately formulate relevant health policies to remedy the negative impacts of COVID-19 on health equity and to protect vulnerable groups, especially ethnic minorities, from health crises.	Yes. The study had data and information related to health inequalities in the poor, ethnic minority groups, and those living in mountainous areas. It satisfied to research question, objectives, and purposes.	Individuals, Relationships, Organizations, Communities, Policies
2	Ha et al. (2015). Factors associated with four or more	Article	This study analyzed factors associated with	- The study found that inequalities in access to ANC4+ services of rural	- Nonethnic women were two times more likely to have ANC4+ services than				- Vietnam's authorities had developed the	- There was a demand on concerted efforts from all	Yes. This study showed inequalities in	Individuals, Relationships,

No	Sources selected for full review			Results							
	antenatal care services among pregnant women: A cross-sectional survey in eight South Central Coast provinces of Vietnam. <i>International Journal of Women's Health</i> , 2015(7), 699-706. http://dx.doi.org/10.2147/IJWH.S87276		having ANC4+ services in pregnant women in rural areas in Vietnam.	or mountainous pregnant women were significantly associated with lower education, having informal jobs (simple work or unemployed), lower economic conditions, belonging to the ethnic minority groups, having less knowledge of ANC, and receiving no financial support from the husband.	those of ethnic origin. Women who received financial support from their husbands were 2.2 times more likely to have ANC4+ services than those who did not receive financial support.			National Reproductive Health Guideline and recommended at least three ANC visits for uncomplicated pregnancies, one per each trimester with adequate services during each visitation. The ANC4+ services were added to the health information system in Vietnam as an official indicator in September 2014.	relevant stakeholders to improve socioeconomic conditions in the difficult regions, targeting ethnic minority people, to reduce the existing disparity in the use of ANC4+ services.	full access to four or more antenatal care (ANC4+) in pregnant women living in rural and mountainous areas in Vietnam.	Organizations, Communities,
3	Hoa et al. (2022). Socio-cultural norms and gender equality of ethnic minorities in Vietnam. <i>Journal of Racial and Ethnic Health Disparities</i> , 2022. https://doi.org/10.1007/s40615-022-01393-5	Article	The study analyzes the root causes of inequality for women and girls, which constitute barriers to access to opportunities in education, health care, and equal treatment with EM women and girls.	- Customs and cultural practices ground prejudices against women and girls in the perception of numerous ethnic minorities in Vietnam. Ethnic women have to participate in the labor force and take care of other family members. in some ethnic minorities, there is a high rate of girls experiencing child marriage, and early pregnancies are more likely; this significantly affects their development and results in negative consequences for nutrition and maternal and child health care.	- Early marriage resulted in an exceptionally high adolescent birth rate in ethnic minority groups, particularly in the Northern mountainous region. Vietnam's adolescent birth rate was 45/1000 women ages 15–19 in 2014. The adolescent pregnancy rate is much higher in rural areas than that in urban areas, and it is highest in the Northern mountainous region, where the rate is nearly three times higher than that of other regions.					Yes, data and information from the studied results were relevant to the research question, research objectives, and purposes.	Individual, Relationships, Communities,

No	Sources selected for full review			Results							
4	<p>Huong et al. (2020). Access to improved water sources and sanitation in minority ethnic people in Vietnam and some sociodemographic associations: A 2019 national survey. <i>Environmental Health Insights</i>, 14. https://doi.org/10.1177/1178630220946342</p>	Article	<p>The article described access to improved water sources and sanitation among ethnic minority people and its associated factors. Simultaneously, It reflected the inequality in accessing and using improved water and sanitation in studied population groups of Vietnam.</p>	<p>- Access to improved water sources and sanitation was unequal among the ethnic minority people in Vietnam, with the lowest access rate in the northern midland and mountainous and Central Highland areas and the highest access rate in the Mekong Delta region.</p>	<p>- The study found that 95.6% and 96.4% of households in urban areas had access to improved water sources and improved sanitation facilities compared with 69.9% and 77% of households in rural areas, respectively. In addition, the burdens of sanitation and water-borne diseases were unequally distributed in Vietnam, with the highest morbidity rates for diarrhea and parasitic infection-related morbidity in the northern mountainous parts and Central Highland of Vietnam, where most peoples are an ethnic minority.</p>				<p>- The study suggested more emphasis on religion for improving the ethnic minority's access to improved water sources and sanitation. Besides, persons of poor and near-poor status and with low educational levels should be of focus in future water and sanitation intervention programs.</p>	<p>Yes. The findings of the research provided information and data regarding the question, objectives, and purpose of the study with disparities in access to improved water sources and improved sanitation facilities in ethnic minorities in Vietnam.</p>	Individuals, Communities,
5	<p>Kien, L. T., & Thu Nga, T. T. (2018). Mitigating early marriage and consanguineous marriage among ethnic minority groups in Vietnam. <i>International Journal of Science and Research</i>, 8(1), 1779-1786. Doi:10.21275/ART20194228</p>	Article	<p>This research has shown bad consequences for marital couples, especially EM girls and women, the development of the next generation, gender equality, poverty, and social problems of early marriage (EM) and consanguineous marriage (CM)</p>	<p>- Early marriage and consanguineous marriage in ethnic minorities negatively impacted the health outcomes of women, girls and their children leading to inequalities in the rate of stillbirth, neonatal mortality, maternal mortality, under-five child mortality rates, and child malnutrition among EM groups versus the Kinh group.</p>	<p>- EM leads to a high rate of stillbirth, neonatal mortality, maternal mortality, and child malnutrition. In 2014, the percentage of neonatal mortality among EM groups (28.97%) is three times higher than in Kinh/Chinese group (8.21%). Both infant mortality rate and under-5 mortality rate among EMGs are four times higher than in Kinh/Chinese group. In 2013, the maternal</p>	<p>- Loopholes of the legal framework and ineffectively dissemination of legal information on marriage and family; undetermined intervention from the authorities and political social organizations (especially Vietnamese Fatherland Front, Ho Chi Minh Youth Union, and Vietnam's Women Union) in</p>			<p>- In order to mitigate early marriage and consanguineous marriage, the government of Vietnam must adopt many measures, including strict implementation of the law, extending education and training, enhancing the statistics system, etc.</p>	<p>This article will be included in our study. It showed a pathway to vulnerability and inequalities in health outcomes among EM communities, focusing on the health of women, girls, and children.</p>	Communities

No	Sources selected for full review			Results							
			among EM communities.		mortality rate among EMGs is as twice much as nationwide (61.9/100,000 live births).	addressing EM and CM among EM groups.					
6	Kien, N. T. et al. (2022). Declining trend in anemia prevalence among non-pregnant women of reproductive age in Vietnam over two decades: A systematic review and meta-analysis of population studies. <i>Health Promotion Perspectives</i> , 12(3), 231-239. doi: 10.34172/hpp.2022.30.	Article	This article showed that the prevalence of anemia among women of reproductive age differed by geography and increased by mountains, Northern Vietnam, rural areas, and ethnic minority groups, which led to inequality in maternal and child healthcare among EMs and the ethnic majority.	- The data of studied results also highlighted disparities in geographical and ethnic minority groups in the prevalence of anemia among non-pregnant women of reproductive age. The larger proportion saw in the highlands, Northern Vietnam, and rural areas.	- In terms of geographics, regions, and areas, the prevalence of anemia in Vietnam women was shown to be relatively greater in studies that were carried out in the mountains, in Northern Vietnam, and in rural areas (27.7%; 23.7% and 28.7%, respectively) than in studies conducted in the plains, in Central Vietnam, and urban areas of Vietnam (20.6%; 19.9% and 9.4%, respectively).			- The National Nutrition Strategies for 2001-2010 and 2011-2020 continued controlling nutrition policy in Vietnam. Generally, the nutrition status of the Vietnamese people had significantly improved after many years of implementing these National Plans with comprehensive approaches, multi-sector cooperation, and government guidance at different levels as well as increasing perception of nutrition issues among the Vietnamese.	- Efforts to combat ethnic health disparities should concentrate on high-risk groups by establishing control and preventative techniques that address anemia's socio-cultural and dietary specificities in indigenous populations.	Yes, providing relevant information and data on the research question, objectives, and purposes	Communities, Policies
7	Kien, V. D. et al. (2019). Trends in socioeconomic inequalities in the use of antenatal care services by women aged 15 to 49 years in Vietnam. <i>Asia Pacific Journal of Public</i>	Article	The study represented information on socioeconomic inequalities related to the utilization of antenatal care (ANC) services	- The study also found socioeconomic status and freedom of decision-making to be important determinants of the utilization of ANC services. Additionally, a part of ethnic minority women was an inability	- During the Multiple Indicator Cluster Survey (MICS), utilization of ANC services in Kinh/Hoa ethnic woman were higher by 3.0 times in 2011, and 2.6 times in 2014 than in ethnic minority women. These differences are due				- The utilization of ANC services in poor households will improve if women participate in the health insurance system.	Yes, this study provided data and information related to the question, objective, and purpose study for the pathway of socioeconomic	Individuals, Relationships, Communities, Policies

No	Sources selected for full review			Results								
	<i>Health</i> , 31(5), 413–421. https://doi.org/10.1177/1010539519857305		that are still limited based on women's education level, ethnicity, and economic status.	to communicate in the Vietnamese language, and this is the biggest barrier to accessing reproductive health care services.	to disparities in medical capabilities in their region, cultures, and beliefs in accepting ANC services.						inequalities in the utilization of ANC services.	
8	Lam et al. (2019). Socioeconomic inequalities in post-natal health checks for the newborn in Vietnam. <i>International Journal for Equity in Health</i> , 18(1), 128. https://doi.org/10.1186/s12939-019-1029-8	Article	The study shows information on inequalities in post-natal care and its impact on infant mortality in Vietnam.	- Results of the study indicated that post-natal health checks had provided more frequently to newborns in wealthier households. - The common factors like women belonging to the Kinh and Hoa ethnic, higher education, and wealthier groups were significantly associated with the higher percentage of post-natal health checks for the newborn.	- The proportion of post-natal health checks for newborns in Kinh/Hoa ethnic groups was 4.3 times higher than in ethnic minority groups. In the study, the rate of post-natal health checks in urban areas at 94.3% was higher than in rural areas at 87%.					- Policy efforts should be more targeted towards vulnerable groups, including rural parts, poor households, and women with low education, and minor ethnic groups, to reduce socioeconomic inequalities in post-natal health checks for newborns.	Yes, the study provided information and data regarding the question, objectives, and purpose of our research that related to inequality in post-natal health checks for mother and their baby among ethnic minorities.	Individuals, Relationships, Communities, Policies
9	Le et al. (2021). Ethnic variations in healthcare service utilization and access in Vietnamese mountainous setting. <i>Scientific World Journal</i> , 2021(6650303), 1-7. https://doi.org/10.1155/2021/6650303	Article	This study aims to look at ethnic variations in health service use and access among residents in mountainous areas of Vietnam.	- In Vietnam, ethnic minority mothers face a variety of obstacles, including barriers of costs, distance, knowledge, beliefs, and language. Therefore, they are less likely to utilize public health care services than Kinh mothers.	- Ethnic minorities were less inclined to utilize public health services than Kinh people (the major ethnic group in Vietnam) with 51% of ethnic minorities accessed to public health services while Kinh people were at 71.4%	- The study indicated that 15% of studied participants faced difficulty accessing medical examination and treatment at commune health centers. The biggest barriers to accessing and utilizing primary health care for ethnic minorities remain geographical and distance problems.				- Building and developing the village healthcare worker were the solution to difficulties in accessing primary healthcare services. Simultaneously, towards local and household health management.	Yes, the study provided information and data regarding inequality pathways in access to primary health care for ethnic minorities in Vietnam, including ethnic minority mothers.	Individuals, Relationships, Organizations, Communities, Policies
10	Lee et al. (2016). Trends and determinants of infant and under-five	Article	The study identified and investigated pathways	- Research indicated that being an ethnic minority was the most important risk factor for high infant	- The child mortality rates among ethnic minority women groups were 1.57 times higher than that of					- Interventions should focus on the most vulnerable groups, such as the	Yes, the article analyzed the disadvantages of pathways that	Individuals, Communities, Policies

No	Sources selected for full review			Results								
	childhood mortality in Vietnam, 1986-2011. <i>Global Health Action</i> , 9(1). http://dx.doi.org/10.3402/gha.v9.29312		underlying associations between demographic and socioeconomic conditions that determined infant mortality rate (IMR) and under-five mortality rate (U5MR).	mortality. Another possible reason for the slow reduction in child mortality among ethnic minorities had to do with traditional practices, including home deliveries, rituals surrounding birth, and negative perceptions of healthcare personnel.	Kinh women. Mothers in the Northern Midlands and Mountains were 1.58 times more likely to have child mortality than mothers in the Red River Delta.					newly emerging urban poor and also ethnic minorities. These policies should not only involve socioeconomic improvements but should also include interventions for cultural and behavioral change.	cause inequalities in infant mortality rate (IMR) and under-five mortality rate (U5MR).	
11	Liabsuetrakul, T. (2022). Disparities in universal health coverage for maternal and newborn care in ethnic minorities in South-East Asia. <i>WHO South-East Asia Journal Public Health</i> , 11(1), 1-2. DOI:10.4103/2224-3151.358074	Article	This research reflected the achievement of the SDGs for maternal and infant health in Southeast Asia through Universal Health Coverage in terms of MNCH to all population groups, especially ethnic minorities to ensure leave no one behind.	- The research mentioned the utilization of maternal health services in primary healthcare facilities in Southeast Asian countries shows that low utilization rates are related to disadvantage sociocultural factors and inadequate quality of service delivery.					- Present the statements for the health system that need to be reinforced with health policy adjustments and proposed health system responses such as teleconsultation and outreach health care.		Yes, study related to poor health and accessibility of EMs to quality healthcare services for MNCH.	Organizations
12	Loi, L. V. (2021). Ensuring rights to access health services for ethnic minorities in Vietnam in current context. <i>Revista Argentina de Clínica Psicológica</i> , 30(2), 65-86. DOI: 10.24205/03276716.2020.4007	Article	The study presented progress and challenges posed in improving the equitable access to health services of EMs and provided policy recommendations to ensure the right to health care in	- Shortage of human sources and medical equipment, delivery at home, limited access to utilization of public health services among EMs, and health expense was a burden and increased the proportion of poor households among ethnic minorities in many cases.	- Many ethnic women still do not use public health services to get care and treatment. - Ethnicity is a significant social element affecting the use of maternal health care services in Vietnam. - Barriers to access to health services, the elements such as ethnicity, economic households, and			- State health insurance policies and local support measures have increased health insurance coverage and reduced medical costs for many ethnic minority households.		- Health insurance support, administrative procedure reforms, improvement of the quality of medical examination and treatment for ethnic minorities. - The health services here are not only a place to implement	Yes, this study referred to the contents of equitable healthcare for EM communities, and related to our research objectives.	Individuals, Relationships, Communities, Organizations, Policies

No	Sources selected for full review			Results									
			the context of EMs in Vietnam.	- Language is also a barrier to access and use of health care services in some ethnic minority areas.	education all had an impact on the use of antenatal and intrapartum care services delivered by skilled health workers.					pure technical measures but also must be culturally sensitive.			
13	Målqvist et al. (2013a). Ethnic minority health in Vietnam: a review exposing horizontal inequity. <i>Global Health Action</i> , 6(1), 1-19. http://dx.doi.org/10.3402/gha.v6i0.19803	Article	The article is relevant to the research question, objectives, and purpose. It provided data and information associated with inequalities in health outcomes among EM groups.	- Results of study found there are financial barriers, such as informal fees, transportation costs, and expenditure on drugs, causing inequities between ethnic minorities and the majority Kinh. - The combination of classic socioeconomic deficits and culturally and historically specific factors that give rise to indigenous health disparities holds true also for the ethnic minority groups of Vietnam.	- Ethnicity plays an important role as a determinant of health. Child survival was moderately associated with ethnic minority status. Infant mortality showed a strong association with minority status. - The increased risk of neonatal death in the ethnic minority groups compared to the Kinh group. - Health inequalities due to lower socioeconomic status.				- There is still evidence that bureaucracy and governmental policy puts constraints on research in minority areas.		This article will be included in our study. It indicated relevant data and information to health inequality among EM communities in Vietnam.	Individuals, Relationships, Organizations, Communities, Policies	
14	Målqvist et al. (2013b). Maternal health care utilization in Viet Nam: Increasing ethnic inequality. <i>Bulletin World Health Organization</i> , 91(4), 254-261. doi: 10.2471/BLT.12.112425.	Article	This study examined the inequity gap in antenatal care attendance and delivery at health facilities among women in Vietnam. This inequity still increased, especially along ethnic lines.	- Findings of study showed that some vulnerable groups are being left behind and that the equity gap is widening. The rate of delivery in health facilities has improved overall in the rural population, but that this improvement has been unevenly distributed among ethnic groups and women in different economic strata.	- High disparities between poor women persist across surveys, and the home delivery rate among ethnic minority women compared with Kinh/Hoa women quadrupled between MISC3 and MISC4. Although the home delivery rate of both Kinh/Hoa and non-Kinh/Hoa women decreased, the decline was highest in the first group. Hence, inequality in this area has increased.				- It was necessary to promote the expansion and improvement of health systems while reducing geographical and economic barriers to health care, especially for urban and rural residents as well as vulnerable groups in the country who are at risk of being left behind.		Yes. This study provided relevant data and information that clarified the inequality in maternal healthcare and delivery.	Communities, Policies	
15	McBride et al. (2018a).	Article	The study aims to improve maternal			- Thai Nguyen province has applied	- A short message service	- The program in this study started				Yes. This study showed	Individuals, Organizations,

No	Sources selected for full review			Results							
	Development of a maternal, newborn and child mHealth intervention in Thai Nguyen Province, Vietnam: Protocol for the mMom project. <i>JMIR Research Protocols</i> , 7(1), 1-9. Doi: 10.2196/resprot.7912.		and infant health care knowledge, and behavior among women in remote areas of Thai Nguyen, Vietnam.			technology to improve the health service delivery capacity of the province's health system, conducted training for healthcare staff at several levels of the health system, improved management, and provided health care services to people across the province. The objective is toward disparities reduction in health outcomes among ethnic minorities living in the province.	intervention in Malawi reduced facility admissions for minor health issues such as fever, thereby decreasing health staff's workload through supporting participants in treating minor conditions at home.	once the infant was born and provided information on women's postpartum care and infant development. Topics included breastfeeding, danger signs, immunization for babies, and contraception.		inequalities among ethnic minority women and Kinh women for maternal, newborn, and child mortality. In addition, research developed the SMS project for MNCH to provide information on health care to reduce maternal and child mortality of ethnic minorities living in the province.	Communities, Policies
16	McBride et al. (2018b). Improving health equity for ethnic minority women in Thai Nguyen, Vietnam: Qualitative results from an mHealth intervention targeting maternal and infant health service access. <i>Journal of Public Health</i> , 40(2), ii32-ii41. doi:10.1093/pubmed/fdy165	Article	A study for an intervention that used behavior change communication (BCC) to improve access to maternal, newborn, and child health (MNCH) services and health equity among EMWs living in remote areas.	- Ethnic minority women (EMW) in Vietnam experienced disproportionately high infant and maternal mortality rates. Structural deprivation and social exclusion have resulted in poor education, low socio-economic and class status, and rural residence for ethnic minority people in Vietnam, which are primary determinants of their relatively poor health outcomes.	- The strategy of providing generalized, unidirectional information, education, and communication (IEC) to all pregnant community women was found to be limited in its ability to support maternal health for ethnic minority women.		- Most ethnic minorities in Vietnam had used mobile phones despite their low socioeconomic status. Therefore, the application approach of behavior change communication (BCC) was effective in supporting access to information for maternal,		- Recommendations emphasized communicating in the desired language of end users, attending to cultural factors, employing two-way communication, and connecting participants to existing health infrastructure.	Yes. This study provided relevant data and information with the research question, objectives, and purposes.	Communities, Policies,

No	Sources selected for full review			Results							
							newborn, and child care with messages that promote interaction with healthcare providers.				
17	McKinn et al. (2017). 'I do want to ask, but I can't speak': A qualitative study of ethnic minority women's experiences of communicating with primary health care professionals in remote, rural Vietnam. <i>International Journal for Equity in Health</i> , 16(190), 1-12. DOI 10.1186/s12939-017-0687-7	Article	This study explores the challenges of communicating with primary care professionals in the maternal and child health sector, from that develops and supports strategies to improve communication among health professionals with ethnic minority communities in Vietnam.	- There are significant disparities in using health services, and cultural, interpersonal, and communication barriers impact on quality of care in the maternal and child health sector. Result in women interpreting information in various ways, which impacted their health behaviors during pregnancy and motherhood.	- The population of Dien Bien Province belongs to an ethnic minority population accounting for 80 percent. Moreover, poor communication and pervasiveness of didactic, one-way delivery of non-specific health information between health professionals and ethnic minority women contribute to disparities in maternal healthcare with the majority group (Kinh ethnicity).					Yes, article showed issues and barriers in communication between healthcare workers and ethnic minority women.	Organizations, Communities, Policies
18	McKinn et al. (2019). A qualitative analysis of factors that influence Vietnamese ethnic minority women to seek maternal health care. <i>BMC Pregnancy and Childbirth</i> , 19(1), 243. https://doi.org/10.1186/s12884-019-2375-7	Article	The article explored how and why ethnic minority women utilize maternal health services, and the factors that influence women's and families' decisions to access or not access facility-based care.	- Ethnic minority women in Vietnam are much less likely than those from the Kinh majority to attend antenatal care and to give birth with a skilled attendant present.	- Commune health facilities with inadequate physical space led to poor quality of maternal health services that they could offer. The EM perception of commune health facilities was the low quality of health facilities, including the absence of doctors, lower level of staff expertise, no ultrasound availability, cramped facilities, absence			- Improvements in infrastructure, health services, and people's economic circumstances increased the communities' utilization of health services.		Yes, information from the study provided many factors affecting the uptake of antenatal care and giving birth in ethnic minority women.	Individuals, Relationships, Organizations, Communities,

No	Sources selected for full review			Results								
					of appropriate equipment, and lack of hygiene.							
19	Minh et al. (2016). Multiple vulnerabilities and maternal healthcare in Vietnam: Findings from the multiple indicator cluster surveys, 2000, 2006, and 2011. <i>Global Health Action</i> , 9(1). http://dx.doi.org/10.3402/gha.v9.29386	Article	This study explored patterns of inequity in maternal healthcare utilization in skilled antenatal care and skilled delivery care as well as the types of socioeconomic vulnerabilities (e.g. Low education, poverty, ethnic minority, rural areas).	- Studied results reported that inequities exist in access to maternal healthcare among different population groups. The factors such as low education, poverty, and ethnicity were significantly associated with lower antenatal care coverage and skilled birth attendance.	- The rates of receiving skilled antenatal care among women without any of the three vulnerabilities (having low education and belonging to the poorest quintile, and living in a rural area) were 14.13 times higher than the rates for women with all three vulnerabilities in 2011.						Yes, this study provided the relevant data and information with the research question, objective, and purpose related to inequality in access to maternal healthcare.	Individuals, Relationships, Communities
20	Ngo et al. (2021). Routine medical check-up and self-treatment practices among community-dwelling living in a mountainous area of Northern Vietnam. <i>BioMed Research International</i> , 2021. https://doi.org/10.1155/2021/8734615	Article	This study proposed an initial relationship between health behavior and self-treatment. These were important issues in the community, especially in the mountainous settings where self-treatment is very common and related to difficult access to health facilities by many barriers.	- The shortages of human resources and medical equipment in commune health facilities still exist. Therefore, these facilities were incapable of providing medical examination and treatment according to the demands of people in mountainous and remote regions. As a result, Maternal and child mortality and undernutrition indicators were still high in these regions.	- Although most people have health insurance cards (94.3%), they might still worry that they did not have enough financial resources if they performed regular check-ups more frequently. Thus, it was difficult for local people to access health services at higher levels of the health system (such as the district or provincial level).					- Designing cultural communication messages of local people and taking advantage of the popularity of these communication channels to increase awareness and health belief to promote health behaviors and routine medical check-up are needed.	Yes. This research mentioned on self-treatment practices of mountainous ethnic minorities related to geographic barriers and a shortage of medical services in mountainous areas.	Relationships, Organizations, Communities,
21	Nguyen, C. M., & Nguyen, M. P. (2020). The roles of	Article	This study examines to what extent and how	- Socioeconomic status (SES) directly affected the under-five mortality	- Both stunting and underweight of undernutrition affected					- Based on the findings, the study recommended that	Yes, this study provided data and information	Communities

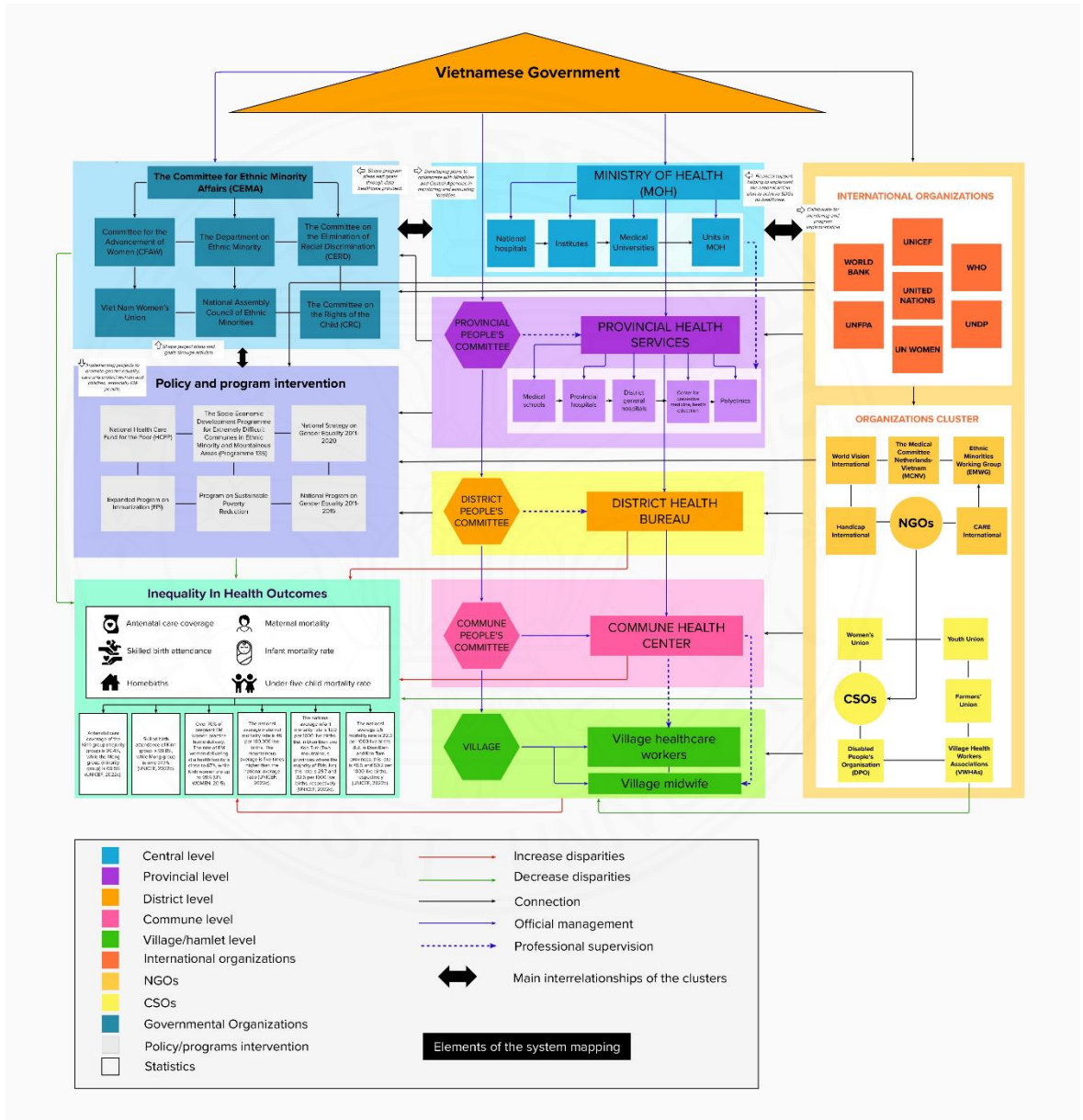
No	Sources selected for full review			Results							
	social economic status and undernutrition in regional disparities of the under-five mortality rate in Vietnam. <i>Tropical Medicine and International Health</i> , 25(11), 1362–1372. https://doi.org/10.1111/tmi.13475		undernutrition and socioeconomic status contribute to disparities in the under-five child mortality rate across social groups of different economic regions of Vietnam.	rate (U5MR) by the underweight pathway, which is higher five times compared with the effect of being underweight on U5MR. - Moreover, SES also indirectly influenced U5MR through a pathway of undernutrition. Overall, the U5MR will rise to 2.73% when the SES index increases.	U5MR. Otherwise, the impacts of SES on U5MR through underweight and stunting pathway included both direct and indirect. There was a disparity in the under-five mortality rate, and the prevalence of undernutrition (underweight and stunting) was also disproportionately observed in regions, such as the prevalence of stunting in the Central Highlands (Region where the majority of EMs are living) is significantly higher than in the Southeast (the wealthier lowland), especially in 2017 at 33.4% compared to 16.7%.				social and health interventions that strongly focus on narrowing the gap between regional poverty and stunting rate would contribute significantly to U5MR inequality among socio-economic regions.	related to factors leading to inequality in the under-five child mortality rate among economic areas in Viet Nam.	
22	Nguyen, P. T et al. (2021). Trends in, projections of, and inequalities in reproductive, maternal, newborn and child health service coverage in Vietnam 2000-2030: A Bayesian analysis at national and sub-national levels. <i>The Lancet Regional Health - Western Pacific</i> , 15. https://doi.org/10.101	Article	The study analyzed the reproductive, maternal, newborn and child health (RMNCH) service coverage in Vietnam and assessed the socioeconomic, regional, and urban-rural inequalities in RMNCH service indicators.	- Vietnam has 63 provinces with diverse demographic, geographic, and socioeconomic characteristics, grouped into eight regions. This regional and provincial diversity might associate with significant geographical health inequalities.	- The Northwest and Central highlands regions had the lowest coverages in most indicators of RMNCH in 2014 and 2030. Researchers predict that Northwest, Central Highlands, Northeast, and North Central regions will not achieve the 2030 targets in immunization indicators (DPT3, Polio3, Measles, and Full immunization). These could explain the measles outbreak in remote and				- The government is needed policies on empowering or improving women's rights and gender equality, which focus on poor women in rural areas. Besides, authorities also need to improve and renew the health system by focusing on developing resources and equipment for lagging localities as	Yes, this study analyzed and predicted the reproductive, maternal, newborn and child health (RMNCH) service indicators in Vietnam, and showed inequality in RMNCH service data among ethnicities in Vietnam.	Relationships, Organizations, Communities, Policies

No	Sources selected for full review			Results								
	6/j.lanwpc.2021.100230				poor regions in Vietnam recently.					well as evaluating and improving the national health program.		
23	Oanh et al. (2022). Disparities in gynecological healthcare service utilization among ethnic minority women in Vietnam. <i>Journal of Racial and Ethnic Health Disparities</i> , 2022. https://doi.org/10.1007/s40615-022-01395-3	Article	This study explored the disparity in the use of reproductive healthcare services and primary health care for ethnic minority women.	- Accessibility to primary healthcare, and reproductive healthcare services is still limited by many barriers, such as awareness of the importance of healthcare utilization and lack of widespread coverage of medical screening programs for EM women.	- The high rate of EM women for home delivery in the northern mountainous provinces accounted for around 40-60% of the total births, while most Kinh women and women living in the lowlands are giving birth in healthcare facilities. It showed gaps and inequalities in healthcare service utilization as well as accessibility to health facilities between EM women and Kinh women.						Yes, this study relates to inequalities in reproductive healthcare services among EM women.	Relationships, Organizations, Communities
24	UN WOMEN. (2015). Briefing note on the Situation of Ethnic Minority women and girls in Viet Nam. Ha Noi, Viet Nam: UN Women Viet Nam Country Office.	Report	This report presented the situation of EM girls and women in Vietnam. It provided relevant data and information to study questions, objectives, and purposes.	- Intersecting patterns of inequalities based on sex and on ethnicity further increases the risk of social exclusion and marginalization of EMs women and girls. - Limited decision-making processes. - Young EM couples lack practical knowledge about puberty, safe sex, family planning methods, HIV/AIDS and STDs protection. - Over 70% of pregnant EM women practice home delivery.	- EM women tend to have more children than their Kinh counterparts. However, infant mortality in EM groups is much higher than in the Kinh group, with about 43.6% and 10.2% respectively. - EM women tend to have no guarantee for land use, credit, and other natural and economic resources. - Policy and legal framework concerning EMs in Viet Nam is fragmented and overlapped as regulations relating to EM people appear in different legal documents.	- One of the most persistent patterns of chronic poverty in Viet Nam is poverty within EM people. While only 5.1% of the Kinh/Hoa ethnic population was below the poverty line in 2014, this figure was almost 29.1% for all other EM groups aggregated.		- Expand the bilingual education pilot program/ Promote school programs and curricula in EM languages.	- Conduct regular and comprehensive studies on the particular needs of EM women and girls with the recognition that the intersection of discrimination based on gender and ethnicity causes political, social and economic marginalization unique to EM women and girls.	Yes, this report contained data and information in accordance with our research.	Individuals, Relationships, Communities, Organizations, Policies	

No	Sources selected for full review			Results							
25	UN WOMEN. (2017). Figures on ethnic minority women and men in Viet Nam 2015. Ha Noi, Viet Nam: UN Women Viet Nam Country Office.	Report	This report updated figures, data, and information for EM women and men in Vietnam. It reflected disparity among regions and ethnicities.	<ul style="list-style-type: none"> - “Income gap” persists between EM and Kinh households, female and male household heads, households in rural and urban areas, and in socio-economic regions. - EM women read and write at lower rates than ethnic minority men in all regions, in all ethnic groups. - Long distances from medical settings make it more difficult for people to have basic health care in EMs. - Early marriage and consanguineous marriage. 	<ul style="list-style-type: none"> - The rate of female EM children attending the correct educational level was much lower than that of the Kinh, with 70.67% compared to 83.55%. - 30.70% of EM households had poor access to clean water. 	<ul style="list-style-type: none"> - The government has identified ethnic minority children of school age as a priority group to receive investment and support in the implementation of education universalization. - Grassroots medical networks at the village, commune, ward, district, and town level have been strengthened to provide primary health care. 			<ul style="list-style-type: none"> - Health care during pregnancy is one of the important conditions to ensure the health of the pregnant mother as well as the infants. 	This report will be included in our research, with figures, data, and information for analysis and assessment of inequality in health outcomes and other issues among EM groups.	Individuals, Relationships, Communities, Policies
26	Vo et al. (2019). Trends in socioeconomic inequalities in full vaccination coverage among Vietnamese children aged 12-23 months, 2000-2014: Evidence for mitigating disparities in vaccination. <i>Vaccines</i> , 7(4), 188. https://doi.org/10.3390/vaccines7040188	Article	This study was conducted to quantify the levels of socioeconomic inequality in the full vaccination coverage among Vietnamese children aged 12–23 months, including ethnic minority children and women.	<ul style="list-style-type: none"> - Research shows that household income is also considered an important factor in determining access to immunization services for children in the first years of life. - The rate of complete immunization among Kinh children at 53.0% was higher than that of ethnic minority children at 32.5%. 	<ul style="list-style-type: none"> - The difference in adequate immunization coverage between the poor and the rich Vietnamese children from different ethnic groups and having mothers with low educational attainment may be due to differences in the level of availability as well as access to adequate immunization at the child's place of residence. 					Yes, Results of the research related to the question and objectives of our study, socioeconomic inequality leading to disparity in full immunization of children between ethnic minority and majority as well as a barrier from the cultural acceptance of immunization of EMs.	Individuals, Organizations

APPENDIX B

SYSTEM MAPPING FOR THE HEALTHCARE SYSTEM AND SUPPORTING ORGANIZATIONS FOR EM WOMEN AND CHILDREN IN VIETNAM



Developed from the study of Duc-Cuong et al. (Duc-Cuong et al., 2010).

Research has developed the system mapping for the healthcare system and supporting organizations for EM women and children in Vietnam in Appendix B.

The system mapping of this study describes the Vietnamese health system that provides healthcare services to EM groups in Vietnam. Simultaneously, it also refers to organizations that are engaged in supporting development to close the gap in health inequalities and other aspects for EM groups, such as governmental organizations (GOs), non-governmental organizations (NGOs), international non-governmental organizations (INGOs), and civil society organizations (CSOs).

To begin with, Vietnam's health system has four administrative levels of medical facilities, including the central level, provincial level, district level, and commune level. Specifically, Vietnam's Ministry of Health is a government agency and also the highest organization at the central level that is accountable for formulating and promulgating laws and regulations on the care and protection of people's health. Besides, MOH was the authority to manage health facilities at the provincial, district, and commune levels. These levels of health facilities have accountable for developing and implementing health care, examination, and treatment services at the respective. However, responsibility for allocating finance and human resources belongs to people's committees. Meanwhile, responsibility for expertise belongs to provincial or district health departments under the supervision and monitoring of the MOH. At the lowest level, commune health centers are responsible for providing basic-healthcare services to the community, such as vaccination, MNCH, FP, and treatment of common diseases (Duc-Cuong et al., 2010).

Related to governmental organizations serving as the rights and benefits for the EM people, the Committee for Ethnic Minority Affairs (CEMA) is a ministerial-level state agency that has the managing duties of Vietnam's ethnic minority matters. In CEMA, there is the Committee for the Advancement of Women (CFAW) and the Department on Ethnic Minority activities on gender equality, training, and building the capacity of ethnic minorities to raise their engagement in the political system or public administration at all state levels. The Ethnic Council in the National Assembly monitors and evaluates the performance of policies on EMs and makes recommendations to the National Assembly on socioeconomic development problems in EM areas. Vietnam Women's Union operates for societal criticism and protection of the rights and well-being of EM women (UN WOMEN, 2015).

Program 135 is a program focusing on socioeconomic development for particularly disadvantaged areas in EM and mountainous regions. In addition, the Program on Sustainable Poverty Reduction has been implemented in 61 poor districts and aims to solve the issue of socioeconomic development, improving income, employment, education, and human resource expansion in local government at all levels. However, they have not yet addressed or considered the gender inequality among EM women.

The National Strategy on Gender Equality 2011-2020 has particularly emphasized the demands of EM women and identified the vulnerability to gender and the high risk of discrimination in terms of gender (UN WOMEN, 2015). Additionally, HCFP refers to a subsidized health program for the poor and ethnic minorities that aims to address the growing out-of-pocket expenditures, particularly for the poor and

vulnerable (Lê et al., 2019). Expanded Program on Immunization has eliminated some severe childhood diseases and prevented death from dangerous diseases such as measles, diphtheria, pertussis, tetanus, and polio. However, the program should promote access to areas with low vaccination rates, such as mountainous, remote, and ethnic minority areas (UNICEF, 2022b). Finally, International organizations, NGOs and CSOs work closely with the Vietnamese government, local authorities, as well as the Vietnamese people to provide support appropriate with objectives and with EM people, women, and their children. Besides, organizations offer financial support, train human resources, and help to implement the national action plan to achieve SDGs on healthcare (UNDP, 2020; UNFPA, 2021; UNICEF, 2022a; UNICEF, 2022c; MCNV, 2022a; MCNV, 2022b; HI, 2022; WVI, 2022).

