

Perspectives of Healthcare Providers in Maternal and Child Health Services in Bokeo Province, Lao People's Democratic Republic: A Qualitative Study

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Submitted: 28 June 2023. Accepted: 4 November 2023. Published: 27 December 2023

Volume 32, 2024. pp. 329–345. <http://doi.org/10.25133/JPSSv322024.020>

Abstract

In Bokeo province, Lao People's Democratic Republic, the high rates of poverty and poor health outcomes are striking. According to data collected from the Lao government, the area has a high mortality rate among mothers and children under five years old. Consequently, there is an urgent need for significant enhancements in maternal and child health (MCH) services. This study aims to investigate the perspectives of healthcare providers on the MCH situation, difficulties, challenges, and potential solutions for the growth and implementation of MCH services. We conducted in-depth interviews with 45 healthcare providers from varying healthcare system levels using qualitative methods. The key findings are as follows: Healthcare providers demonstrate a strong understanding of MCH policies, acknowledgment of national objectives, and dedication to personal growth. However, significant obstacles exist, including access barriers for ethnic minorities, transportation complications, inadequate healthcare personnel, and insufficient equipment and infrastructure. Healthcare providers have also indicated a need for more training and opportunities for professional development to improve MCH outcomes. To enhance MCH outcomes in Bokeo province, addressing these challenges and supporting healthcare providers in their quest for self-improvement is essential. The findings of our study can aid in creating targeted interventions and policies to improve MCH outcomes in Bokeo province and similar regions. By focusing on critical areas such as antenatal care, skilled birth attendance, postnatal care, immunizations, nutrition, family planning, health education, and access to healthcare, we can strive towards improved health outcomes and reduced mortality rates.

Keywords

Healthcare providers; maternal and child health; perspectives

Introduction

The Lao People's Democratic Republic (Lao PDR) is a low-middle-income country in Southeast Asia bordering China, Myanmar, Thailand, Cambodia, and Vietnam. While it has experienced rapid economic growth, its Human Development Index (HDI) is medium, ranking 138 out of 187 countries. The poverty rate more than halved between 1993 and 2019, falling from 46% to 18% (Nonaka et al., 2022; The World Bank, 2020a). Around 66.8% of the 6.1 million population live in rural areas, many of which are difficult to access due to the mountainous terrain. The country is ethnically diverse, with 49 recognized ethnic groups (Nonaka et al., 2022). Health services are primarily delivered through public sector health centers and hospitals. The average maternal mortality ratio (MMR) in Laos was 126 deaths per 100,000 live births in 2020 (The World Bank, 2020b). However, the Sustainable Development Goals (SDG) 3.1 target aims to reduce the MMR to less than 70 maternal deaths per 100,000 live births by 2030. It is evident that Laos still has a significant gap to bridge to achieve this ambitious goal (World Health Organization, 2023). Efforts are needed to address various factors affecting maternal mortality, such as access to healthcare services, quality of care, socio-economic status, and cultural beliefs, to improve MCH outcomes (United Nations, 2023).

Bokeo province is the smallest province in Lao PDR, bordering Myanmar and Thailand, and the least populated province in Lao. Huayxai, the capital of Bokeo, is located on the bank of the Mekong River (Meemon et al., 2021). As of 2017, the poverty rate in this province was 23.6%, indicating a significant level of poverty, diversification of ethnic groups, and high forest cover (around 50%). In Bokeo, poor health status remains a pressing issue. Life expectancy is low at 67.5 years (Global Data Lab, 2022). The maternal mortality ratio (MMR) has declined but remains unacceptably high. The infant mortality rate, under-five mortality rate, percentage of stunted children under five years old, percentage of wasted children under five years old, percentage of underweight children under five years old, and percentage of overweight children under five years old in 2020 were as follows: 35.4 deaths per 1,000 live births, 44.3 deaths per 1,000 live births, 31.8% stunted children, 11.6% wasted children, 27.6% underweight children, and 6.1% overweight children (The World Bank, 2020b).

In 2012, approximately 42% of child deliveries were attended by healthcare providers at home, primary healthcare facilities, or hospitals. However, routine maternal and child health (MCH) reporting indicates that a significant number of mothers who die during childbirth do not have access to health services and give birth at home (Kawaguchi et al., 2021). This research received budget support from the Lancang-Mekong Cooperation Special Fund (People's Republic of China), contributing to improving the MCH system in Remote Areas Bordering Thailand-Lao PDR. Bokeo province was selected to participate in this project due to it having the highest poverty rate and the highest mortality rate for mothers and children under five years of age in Laos. Consequently, these factors constituted the rationale for choosing this region for this research study.

From the information mentioned above, it can be observed that Bokeo province is an area that continues to face challenges regarding high maternal and child mortality rates. These issues have implications for the overall healthcare system and the quality of life of the population in the region when compared to other provinces where the problems are not as severe. Choosing this area to explore the perspectives of MCH service providers is crucial and has not been undertaken extensively before.

This study investigates healthcare providers' perspectives on the MCH situation, problems, challenges, and potential solutions for developing and implementing MCH services. It is crucial to identify constraints and provide recommendations for implementing and scaling up the program effectively, given that although interventions that reduce maternal and child mortality are known, there is no agreed-upon strategy for implementing integrated MNCH care at the community healthcare level.

Methods

Study Design

This study was conducted using a qualitative method through in-depth interviews serving as the primary source for analysis.

Study participants

Participants for the study were healthcare providers whom the Bokeo Provincial Health Office identified. These included representatives from the following facilities in Bokeo province, Lao PDR: Bokeo Provincial Health Office, Bokeo Provincial Hospital, five District Public Health Offices (Houay Xay, Ton Pheung, Meung, Pha Oudom, and Pak Tha), five District Hospitals (Houay Xay, Ton Pheung, Meung, Pha Oudom, and Pak Tha), six Sub-District Hospitals (Haad Sa, Mai Pattana, Ban Pung, Pon Thong, Hua Namtha and Nam Yu).

In each setting, we interviewed executive- and operational-level personnel working in MCH. The inclusion criteria consisted of being a practitioner in the field of MCH for at least one year in the area, possessing a proficient understanding and ability to communicate in Thai, and expressing a willingness to participate in the research study. Participants who were unable to provide information until the completion of the interview process for any reason, such as unwillingness to answer questions or providing incorrect information as determined by the Lao co-researchers, were asked to discontinue and were excluded from the study.

Research instrument

The interview guide used in this study consisted of 12 questions. The authors developed it to capture information about demographics, Lao PDR national MCH policies and key performance indicators (KPIs), MCH constraints, and healthcare providers' perspectives on self-development to improve MCH systems. After the interview guide was developed, it underwent testing and quality assurance using the index of content validity (IOC) method. Three qualified individuals reviewed and provided feedback on the guide, which was then revised based on their suggestions to ensure cultural appropriateness and sensitivity. The IOC was more than 0.5 in all questions. The interviews were voice-recorded to capture the participants' responses accurately and facilitate thorough data analysis. Each interview lasted approximately 1.15 hours. In total, 45 participants were interviewed as part of this study.

Data collection

In-depth interviews were used to collect qualitative data from healthcare providers responsible for implementing facility-level policies and providing MCH services to populations. The interviews were conducted by a team of Thai and Lao researchers who had received a two-day training course before data collection (November–December 2022). The interviews were conducted in Thai since Thai and Lao languages are closely related, and all participants could understand and communicate in Thai. Additionally, Lao researchers who were proficient in Thai were available throughout the interview period to ensure smooth communication, monitor and control the interviews, and use a semi-structured interview guide that had been tested and modified to ensure cultural appropriateness and sensitivity. The interviewers were unfamiliar to the participants, who were aware that the interviewers were researchers conducting an evaluation. All participants provided written informed consent. Field notes and memos were taken to record interview dynamics and reflections on interview accounts. The interviews continued until data saturation was reached, with no new information forthcoming.

Data analysis

The transcripts of the in-depth interviews were recorded and analyzed through conventional content analysis with interpretative induction. The coding was identified and agreed upon by reading and understanding the transcripts of the interviews, and generating themes was done with a consensus among three researchers. The data were then labeled and grouped under the same categorized themes without using qualitative data analysis software. The categorized themes generated were then reported in the results section (Meemon et al., 2021).

To reduce the risk of misrepresenting the intended meaning during translation, the interviews were conducted and transcribed in Thai. Translated and edited quotes were reviewed by the Lao research team to ensure consistency of meaning with the original transcript. The study's background and methods have been clearly explained to enable readers to evaluate its relevance. An audit trail has been established through field notes and memos. Data triangulation was achieved by conducting interviews with various individuals in different locations and documenting information in field notes and memos.

Trustworthiness

The interview process and subsequent transcriptions were conducted in Thai, which presents the possibility of mistakes in transmitting intended meanings. To reduce this risk, examined translations and edited reproductions of the quotes were cross-checked with the Lao research team and rechecked against the original recordings to verify semantic compatibility. The technique and contextual backdrop have been defined to help the reader assess its applicability. A careful audit trail has been built using comprehensive memos and extensive field notes per established research standards. Data triangulation was performed by incorporating interviews from various persons in multiple locations, complemented by field notes and memos.

This study is part of the “Improving MCH System in Remote Areas and Bordering Thailand - Lao PDR” research project. The study received ethical approval from the Research Ethics

Committee of the Faculty of Public Health, Chiang Mai University, Thailand, with reference number ET022/2022 on December 29, 2022.

Result

Demographics

We approached 45 key participants: 19 executive-level personnel and 26 operational-level personnel. Three were from the Provincial Health Office, ten were from District Health Offices, four were from the provincial hospital, 11 were from District Hospitals, and 17 were from Sub-District Hospitals. At the organization's executive level, there are 15 individuals, composed of nine males and six females. The average age was 47 and 44 for males and females, respectively, with the average work tenure being 14.3 and 16.1 years, respectively. Meanwhile, there were 30 individuals at the operational level: 12 males and 18 females, with an average age of 33 and 29 years old for males and females, respectively. Their average work tenure stands at 7.6 and 19.7 years, respectively.

Assessing awareness of Lao MCH policies among healthcare providers

Most key participants comprehensively understood the Lao National Maternal and Child Health (MCH) policies and provided accurate descriptions. The Lao National MCH policy pertains to the maternal and child health policy implemented by the Lao People's Democratic Republic. Its primary objective is to enhance the well-being and healthcare of mothers and children by facilitating access to high-quality healthcare services, promoting healthy behaviors and lifestyles, and fortifying the healthcare system. The policy specifically aims to decrease maternal and child mortality rates, enhance the health of newborns and infants, and ensure the availability of family planning services. Moreover, it endeavors to improve the overall health and nutritional status of mothers and children, particularly in rural and remote regions of the country. The formulation of the Lao national MCH policy was influenced by international agreements and frameworks, including the Sustainable Development Goals (SDGs) and the Global Strategy for Women's, Children's, and Adolescent Health established by the World Health Organization.

"In Lao, antenatal care (ANC) services are free of charge and are provided in health centers and hospitals across the country. The government has made efforts to increase the number of health facilities offering ANC services, particularly in rural and remote areas, to improve access for pregnant women."

(District Health Officer, Male 1)

"According to the Lao National MCH policy, deliveries at government health facilities are free of charge, including emergency obstetric and neonatal care. However, there may be some additional costs for services such as transportation and medicine."

(Provincial Health Office, Female 1)

"Vaccination services for mothers and children are provided free of charge in public health facilities. This includes vaccines for pregnant women to

protect against tetanus, as well as vaccines for infants and children to protect against diseases such as tuberculosis, polio, hepatitis B, measles, and rubella. The policy also emphasizes the importance of outreach services to reach remote and marginalized populations with vaccination services."

(District Public Health Office, Male 1)

"The Lao government provides free family planning services and contraceptives through its public health system. These services are available to all women of reproductive age, including those living in rural and remote areas. The government encourages couples to plan their families and offers a range of contraceptive methods, including pills, condoms, injectables, and intrauterine devices (IUDs)."

(Provincial Hospital, Female 2)

Evaluating MCH KPIs and practical outcomes among healthcare providers

It was discovered that practically all the participants had recognized the MCH national targets established by the government and could accurately reflect them, including 90% of pregnant women receiving at least one antenatal care visit from skilled health personnel, 90% of deliveries attended by qualified health personnel in a health facility, 80% of mothers and newborns receiving postnatal care within 48 hours of birth, 90% of children receiving all essential vaccinations recommended by the national immunization schedule, 60% of women of reproductive age (15–49 years) using any form of contraception, < 23 deaths of infants under one year of age per 1,000 live births, < 70 maternal deaths per 100,000 live births, < 30 deaths of children under five years of age per 1,000 live births, and 80% of infants aged 0–5 months being exclusively breastfed.

However, when it came to outcome data, most participants had only been aware of the information about their responsibilities, which was routinely logged in the databases of their respective organizations, such as the reporting forms and computer systems designated by the Ministry of Health. This showed that the staff members were committed to their work because they carried out instructions and gathered information to track and assess their progress.

"At this Sub-District Hospital, the percentage of children under five years old receiving basic vaccination services according to their age does not meet the target of the Ministry of Public Health (MOPH). Based on data from 2022, the Ministry set a target of 90%, but in my area, only 70% was achieved. It is not known how well other areas are doing."

(Sub-District Hospital, Female 2)

"In 2022, in the area I'm responsible for, there were six maternal deaths that did not meet the MOPH's target. We were also instructed by the government to find measures to prevent such incidents from happening again."

(District Public Health Office, Female 1)

Constraints faced by healthcare providers in MCH

Ethnic minority groups

In-depth interviews with healthcare providers indicated that, in addition to the challenges faced by the Mhong, Kammu, Musoe, and Lahu minority ethnic groups in Bokeo province, significant obstacles to accessing maternal and child health (MCH) healthcare services are present. These obstacles include limited access, a lack of education, language barriers, and cultural practices. Consequently, these communities experience poor health outcomes, such as high rates of maternal and infant mortality and preventable diseases.

To facilitate these outcomes, the study suggested that the needs of these communities should be prioritized, and culturally sensitive, community-focused interventions should be developed. Such interventions could include establishing community-based healthcare services, providing targeted health education, and ensuring healthcare providers are trained to provide adequate care. By adopting a comprehensive approach that accounts for the unique needs and challenges of these ethnic minority communities, the study indicated that it would be possible to create a healthier, more resilient Bokeo province.

“It is a longstanding tradition for many ethnic women to give birth at home without any medical assistance. This is believed to be a way to connect with nature and preserve cultural heritage.”

(Provincial Health Office, Female 3)

“For the Hmong ethnic group, spiritual practices and beliefs are an important aspect of their lives, including during pregnancy and childbirth. This can include seeking the guidance of elders or performing traditional rituals.”

(District Public Health Office, Female 5)

“Certain ethnic communities adhere to the belief that delivering babies in natural settings, such as the forest, is a more desirable option compared to giving birth at hospitals or healthcare facilities.”

(District Hospital, Female 2)

Transportation barriers in underserved areas

The lack of transportation and poor road conditions significantly affected maternal and child health (MCH) in remote or underserved areas. When pregnant women and children were unable to access healthcare facilities due to transportation barriers, they potentially missed out on crucial prenatal care, vaccinations, and treatment for illnesses and complications. This led to poor health outcomes for both mothers and children, including an increased risk of maternal and infant mortality, malnutrition, and preventable diseases. Furthermore, the high cost of available transportation created financial barriers for low-income families, further limiting their access to healthcare services. Consequently, the study suggested that improving transportation infrastructure and increasing access to affordable transportation options could be critical steps in addressing MCH challenges in these communities.

"Pregnant women and new mothers in remote areas of Bokeo province often struggle to reach healthcare facilities due to the poor condition of roads. In many cases, the roads are unpaved, bumpy, and difficult to navigate, especially during the rainy season, which can result in poor health outcomes."

(District Public Health Office, Male 2)

"In rural communities, transportation is a major obstacle to accessing MCH services. The roads are often poorly maintained, with potholes and uneven surfaces making it difficult for vehicles to travel. This can result in missed appointments and delayed care, leading to preventable diseases and even deaths."

(District Hospital, Male 1)

Insufficient availability of adequately trained healthcare personnel

In Bokeo province, the study found that the shortage of qualified healthcare providers was a significant constraint in scaling up MCH programs, especially in remote areas. In some Sub-District Hospitals, staff could not assist in deliveries due to a lack of training. This led to inefficiencies and ineffective healthcare services as positions were filled with unqualified workers. The shortage of qualified healthcare providers resulted in poor MCH outcomes, including increased rates of mortality and preventable diseases. Addressing this shortage emerged as crucial in improving MCH outcomes in Bokeo province and could involve training programs and recruitment efforts to attract more qualified providers to the region. Many participants expressed a need for greater training in medical and healthcare skills.

Moreover, the study found that financially capable individuals tended to choose to receive healthcare services at the provincial hospital or even preferred to use the services of hospitals in Thailand due to their confidence in the medical personnel's expertise and the modernity of the medical system.

In addition, some participants reported that the shortage of healthcare and medical personnel led to a heavy workload, with one staff member often handling more than 2-3 responsibilities. This prevented them from entirely focusing on their primary duties and impacted the quality of service provided to patients, which appeared to be an unavoidable issue.

"I have studied basic nursing and have been working at this Sub-District Hospital for approximately 12 years. However, there are no professional nurses or midwives here to oversee deliveries, which means I am responsible for everything, including administering medication, giving vaccinations, and sometimes even assisting with deliveries myself. I have not received formal training in delivering babies, but I have learned through my own experiences on the job."

(Sub-District Hospital, Female 3)

"Many healthcare providers in Bokeo, especially those in remote areas, have not received much professional training or skill development. This lack of training has made it difficult for us to keep up with modern practices, and we often struggle to address our patients' needs effectively."

(District Health Officer, Male 3)

“Some people with a higher socio-economic status choose to receive medical treatment or give birth at the Bokeo Provincial Hospital, while others opt to cross the border to receive care at hospitals on the Thai side, despite incurring travel expenses and other costs. They are willing to pay because they claim that the doctors and nurses at these hospitals are more skilled than those at the District Hospital, and they also have better and more modern medical equipment.”

(Provincial hospital, Female 4)

Lack of equipment, infrastructure, and medicines

The Bokeo Provincial Hospital received support from the Ministry of Public Health (MOPH) to provide high-quality maternal and newborn care by providing delivery equipment, weight scales, autoclaves, and delivery kits. However, healthcare providers faced obstacles in district and Sub-District Hospitals due to inadequate equipment and resources. Both executive and operational level personnel from the District and Sub-District Hospitals shared a consistent perspective. They highlighted a pronounced lack and insufficiency of essential materials, equipment, and medical supplies for MCH services. This deficiency is especially pronounced in Sub-District Hospitals, which are significantly smaller and situated in more remote areas. These distant hospitals face even more significant challenges due to their severe resource constraints. The absence of ambulances in some locations was found to be critical for the timely transportation of pregnant women with complications.

Furthermore, there was a lack of essential health facilities equipment, such as refrigerators for storing vaccines and medications, which could affect their safety and effectiveness. Reports of insufficient vaccinations and critical medical supplies in remote areas could lead to serious health problems for mothers and children, including preventable diseases and complications. Due to space limitations, some Sub-District Hospitals had to convert their office space for antenatal check-ups and delivery areas. This highlighted the urgent need for appropriate infrastructure and equipment to provide high-quality maternal and newborn care in Bokeo province, ensuring healthcare providers have the necessary resources.

“Our District Hospital lacks several medical types of equipment, some of which have been broken and not repaired due to budget constraints. As a result, we must improvise by using other equipment instead. For example, our autoclave for sterilizing medical instruments has been broken for about five years, so we use a kitchen steamer instead. Although we are aware that it may not be ideal, it is still better than doing nothing.”

(Sub-District Hospital, Male 1)

“Although our hospital is a District Hospital, we still face several equipment shortages. Some of the available equipment is old and not fully functional, leading to us having to refer patients to the provincial hospital for their safety.”

(District Hospital, Male 2)

“Several women came to receive contraceptive injections, but we were unable to provide the service due to a longstanding shortage of injectable contraceptives. The MOPH has not yet provided us with a new lot. We recommended that these women consider alternative contraceptive methods, such as oral contraception, but they refused as it was not

convenient for them. Some of them even returned home without any form of contraception."

(Provincial hospital, Female 3)

Healthcare providers' views on self-development for enhancing MCH systems in Bokeo province

Healthcare providers in Bokeo province identified the necessity for further development of their medical and health-related skills, particularly in MCH. Many healthcare providers in the region perceived a lack of essential knowledge and skills and identified some aspects of their training as outdated. As such, they desired new and up-to-date training and skills to apply. Additionally, the participants shared a dedication to improving the health outcomes of their patients. They recognized the importance of gaining more knowledge and skills in health education to achieve this goal. Moreover, they appreciated the significance of using media and other tools to inform the community about healthy lifestyles and disease prevention. By improving their knowledge and skills in these areas, healthcare providers hoped to empower their patients to make informed decisions about their health, ultimately leading to better health outcomes.

Given these needs, healthcare providers in Bokeo province called for more training and professional development opportunities. They believed that investing in their education and skills development would lead to better health outcomes for the communities they served. With the right resources and support, healthcare providers in Bokeo province were confident that they could continue improving healthcare quality in their region and beyond.

"The problem is that our knowledge and skills are not up to date. We received training on MCH recently, before the COVID-19 pandemic, which was about 3–4 years ago. This means that we have not been able to develop our skills and knowledge in our work."

(District Health Officer 2, Male 1)

"I would like to receive training on emergency obstetric care management because, during my experience in childbirth, I have encountered emergencies that I was unable to resolve, such as shoulder dystocia or excessive bleeding in pregnant women. If I know how to manage these situations, it will help reduce maternal and child mortality rates."

(Provincial hospital, Female 1)

"As a public health worker, my role is to teach and provide health education to the community in the area. However, many people believe that my current health education techniques and materials are not effective enough. I want to learn effective health education methods and how to create simple yet engaging health media and materials that can truly connect with the community, especially with ethnic groups who face communication and teaching barriers."

(District Public Health Office, Female 4)

Discussion

This research investigates healthcare providers' perspectives concerning the current state, challenges, and potential solutions for developing and implementing maternal and child health (MCH) services. Noteworthy findings from the study reveal that healthcare providers possess a strong understanding of MCH policies, exhibit awareness of national targets, and demonstrate a commitment to self-improvement. Key barriers identified include limited access for ethnic minority populations, transportation issues, inadequate healthcare staffing, and deficiencies in equipment and infrastructure. The healthcare providers expressed a significant need for additional training and professional development opportunities to enhance MCH outcomes.

The Lao National MCH policies provide free antenatal care, deliveries, emergency obstetric and neonatal care, vaccinations, family planning services, and healthcare for children under five years old at all government health facilities. These efforts demonstrate the government's commitment to improving MCH outcomes, particularly in rural and remote areas where access to healthcare services may be limited. The policies also recognize the vital role of the private sector in providing healthcare services and emphasize the need for outreach services to reach remote and marginalized populations (Bell & Alttahir, 2016; Nonaka et al., 2022; Sakuma et al., 2019; Sonoda et al., 2017). However, there may still be financial barriers to accessing healthcare services for some individuals in the country, as some non-governmental organizations and private health facilities may charge fees for these services. These policies have led to a significant increase in facility-based deliveries and reduced maternal and neonatal mortality rates. Overall, the Lao National MCH Policies are comprehensive and aim to ensure that all individuals, especially women, and children, have access to essential healthcare services in the country (Nonaka et al., 2022).

The findings highlight the positive development that healthcare providers in Bokeo province are aware of and recognize, as well as the policy and KPIs related to MCH established by the Lao PDR government. This is an encouraging sign that they have a strong understanding of the goals and targets that they are working towards. However, the passage also suggests that there are challenges that healthcare providers in the region face in terms of improving the quality of care provided (Bell & Alttahir, 2016; Nonaka et al., 2022; Sakuma et al., 2019). One of the key challenges identified in the passage is the lack of information on outcome data beyond individual responsibilities. This can hinder healthcare providers' ability to evaluate the success of their interventions and improve the quality of care. To overcome this challenge, healthcare providers in Bokeo province must have the necessary knowledge and skills to monitor and improve their performance. Additionally, they require resources and support to succeed in their efforts to improve the quality of care provided to patients (Bell & Alttahir, 2016; Chankham et al., 2017; Numair et al., 2021).

Ethnic minority communities in Bokeo province face urgent challenges accessing MCH services, leading to poor health outcomes like high maternal and infant mortality and preventable diseases. Addressing these requires culturally sensitive, community-focused interventions considering their unique needs and cultural beliefs. For instance, some ethnic women prefer home births without medical aid to connect with nature and maintain cultural heritage. Similarly, specific communities, like the Hmong, emphasize spiritual practices during pregnancy and childbirth, such as consulting elders or performing traditional rituals (Sato et al., 2019; Smith et al., 2022; Sychareun et al., 2016; Withers et al., 2018). While

respecting and acknowledging cultural beliefs and practices is essential, it is also vital to ensure that MCH outcomes are not compromised. Therefore, community-based healthcare services that consider cultural beliefs and traditions while providing necessary medical care should be established. Targeted health education programs can also be developed to raise awareness of the importance of seeking medical assistance during pregnancy and childbirth and to dispel any myths or misconceptions about childbirth (Khamphilavong et al., 2023; Smith et al., 2022; Withers et al., 2018). Healthcare providers should be trained in language, cultural competency, and sensitivity to care for ethnic minority communities in Bokeo province effectively. Overcoming access barriers to MCH services requires a comprehensive, culturally sensitive approach, developing tailored interventions with these communities to promote health and resilience (Herwansyah et al., 2022; Khamphilavong et al., 2023).

Pregnant women and new mothers in Bokeo province's remote areas struggle to access healthcare due to poor road conditions, particularly during the rainy season. These transport challenges cause missed appointments and delayed care, leading to increased maternal and infant mortality, malnutrition, and preventable diseases (Adhikari et al., 2019; Sato et al., 2019). Improving transportation infrastructure and increasing access to affordable transportation options are critical steps in addressing MCH challenges in these communities. Improving transportation infrastructure and increasing access to affordable transportation options can significantly impact MCH outcomes. This can be done through road construction and maintenance investments and reliable transportation services (Chen et al., 2023; Sato et al., 2019; Sydavong et al., 2019). This can include using community health workers to provide care in remote areas, mobile health clinics, or providing transportation vouchers to low-income families. Additionally, improving transportation infrastructure can have positive effects beyond just MCH. Access to reliable transportation can lead to increased economic opportunities, improved access to education, and increased social connectedness within communities (Bodhisane & Pongpanich, 2022; Sato et al., 2019).

As mentioned in the interviews, some Sub-District Hospitals in Bokeo province cannot assist in deliveries due to the lack of training. Healthcare providers in remote areas have not received much professional training or skill development, making it challenging to keep up with modern practices and effectively address patient needs. This shortage of qualified healthcare providers can also result in a heavy workload on staff, reducing the quality of service provided to patients (Boulom et al., 2020; Phommachanh et al., 2019). The shortage of qualified healthcare providers is a significant constraint in scaling up MCH programs in Bokeo province, particularly in remote areas. This can result in inefficiency, ineffective healthcare services, and poor MCH outcomes. Improving the availability of adequately trained healthcare personnel is crucial to addressing this issue (Boulom et al., 2020; Nagpal et al., 2019; Phommachanh et al., 2019). Interviews highlighted the perception of Bokeo province's medical system as inferior to neighboring areas, prompting wealthier individuals to seek treatment elsewhere. Addressing this requires investment in medical equipment, facilities, and healthcare provider training, recruiting more skilled providers, and offering continual training, especially in remote regions (Nagpal et al., 2019; Safe et al., 2022).

Our study found that district and Sub-District Hospitals in Bokeo province face obstacles due to inadequate equipment and resources. Due to budget constraints, autoclaves and other essential health facility equipment are often broken and not repaired. This leads to healthcare providers having to improvise by using different equipment instead, which may not be ideal but is still better than doing nothing. In addition, the lack of essential medical supplies, such as contraceptives, can lead to serious health problems for mothers and children (Ba et al., 2023). The shortage of equipment, infrastructure, and medicines significantly challenges the

provision of high-quality maternal and newborn care in Bokeo province. Inadequate equipment and resources can lead to delayed or ineffective care, resulting in poor MCH outcomes, including preventable diseases and complications (Khatri et al., 2022; Thongmixay et al., 2019). To address this issue, appropriate infrastructure and equipment must be provided to ensure that healthcare providers have the necessary resources to provide high-quality maternal and newborn care (Gera et al., 2016). The provision of ambulances in remote areas is critical for the timely transportation of pregnant women with complications, and the availability of essential health facilities equipment, such as refrigerators for storing vaccines and medications, is vital for their safety and effectiveness (Turkmani et al., 2023). Investments in upgrading medical equipment and facilities and ensuring the availability of essential medical supplies are crucial steps in improving MCH outcomes in Bokeo province. Additionally, regular maintenance and repair of equipment should be prioritized to ensure that it is fully functional when needed (Ramadan et al., 2023; World Health Organization, 2018).

The perspective of healthcare providers on self-development to improve MCH systems in Bokeo province highlights the importance of investing in the education and professional development of healthcare providers in the region. The lack of up-to-date knowledge and skills among healthcare providers can lead to poor health outcomes, including MCH rates (Millogo et al., 2023). Therefore, there is a need for ongoing training and skills development to ensure that healthcare providers are equipped with the latest knowledge and skills required to provide high-quality care (Kilpatrick et al., 2019; Wittick et al., 2019). Moreover, the desire of healthcare providers to improve health education methods and create engaging health media and materials to connect with the community is commendable. Effective health education is crucial to enhancing MCH outcomes, as it empowers individuals and communities to make informed decisions about their health. Healthcare providers in Bokeo province acknowledge the need to tailor health education to the specific cultural and linguistic needs of ethnic minority communities, who may face communication and teaching barriers (Phommachanh et al., 2019; Yoon et al., 2016). The call for more opportunities for training and professional development highlights the need for investment in the healthcare workforce in Bokeo province. By providing opportunities for ongoing training and skills development, healthcare providers can improve their ability to deliver high-quality patient care. This, in turn, can lead to better health outcomes for mothers and children in the region (Choumanivong et al., 2020; Kruk et al., 2022; Yoon et al., 2016).

Nevertheless, the Lao government has implemented several measures to develop and elevate the country's MCH system, optimizing existing national resources for maximal efficiency and effectiveness. The MCH program in Laos centers on enhancing the accessibility, quality, and usage of MCH services, particularly in remote and rural areas. The strategies to realize these goals encompass increasing skilled birth attendance, promoting antenatal and postnatal care, improving family planning services, and enhancing childhood illness management (Wungrath, 2023). The Ministry of Health in Laos oversees these MCH program implementations, frequently in partnership with international organizations such as the World Health Organization (WHO), the United Nations International Children's Emergency Fund (UNICEF), and various non-governmental organizations. These collaborations are designed to bolster health systems, cultivate capacity among health workers, and provide crucial health services and supplies. The MCH policy in Laos is integrated within broader health policies and strategies, encompassing the Health Sector Reform Strategy and the Reproductive, Maternal, Newborn, and Child Health Strategy. These documents stress a commitment to universal health coverage, health equity, and quality healthcare services for everyone, especially women, children, and marginalized populations. Specific MCH policy

initiatives comprise free maternal and child health services, outreach programs for remote regions, and health promotion campaigns focusing on nutrition, hygiene, and immunization. Based on the most recent information, these programs and policies have seen some successes but continue to encounter challenges. While access to MCH services has improved, disparities persist, especially in remote and rural areas. Moreover, the quality of MCH services varies, and health outcomes remain worrisome, particularly regarding maternal and infant mortality rates.

Conclusion

This study investigated healthcare providers' perspectives on the MCH situation, problems, challenges, and potential solutions for implementing MCH services. Addressing these issues and investing in infrastructure and training are vital to improve MCH outcomes. Healthcare providers in Bokeo province have shown a strong desire for self-development in MCH. Providing up-to-date training and professional development opportunities can improve healthcare services, resulting in better health outcomes for mothers and children. With proper support and resources, healthcare providers in Bokeo province can contribute significantly to a healthier future for their communities.

Strengths, weaknesses, and limitations of this study

This research is among the initial efforts to explore the viewpoints and challenges experienced by healthcare providers when implementing MCH services in Bokeo province, the smallest and most impoverished province in Lao PDR. Nonetheless, the data from each setting displayed striking similarities, reflecting the perspectives on MCH services and the challenges identified in Bokeo province. By addressing these research areas, we can better understand the complex factors influencing MCH in Bokeo province and identify effective strategies for addressing the identified challenges. This knowledge will contribute to developing targeted interventions and policies to improve MCH outcomes in the region. Furthermore, this study employed in-depth interviews, enabling us to gather authentic and in-depth information from highly experienced and knowledgeable personnel in MCH management. Their significant roles and extensive expertise in the field of MCH within the region assure us that the data collected accurately reflects the reality on the ground. However, this study was conducted with executive- and operational-level personnel working in MCH to capture different perspectives. In presenting the study's findings, we did not differentiate between these two groups. We reported the consolidated results, which is considered a weakness.

There are some limitations to our study. First, we could not interview healthcare providers in some Sub-District Hospitals located in remote areas with long distances and difficult transportation. This might result in a lack of information from people's perspectives in those areas. However, we tried to select other regions with similar characteristics to those we could not visit as a substitute. Second, no sample size calculation was conducted in this study. Instead, we selected participants in a purposive manner based on the number recommended by the Bokeo Provincial Health Office. We, therefore, suggest that future research should continue interviews until data saturation is achieved to obtain the most reliable and comprehensive qualitative information possible. And finally, being a qualitative study, the findings cannot be generalized beyond the locations where the data was gathered.

The findings of this study can significantly shape healthcare policies and practices. These insights can foster improved healthcare strategies, enhance provider training, address systemic challenges, promote patient-centric approaches, and ultimately strengthen the local healthcare system for improved MCH outcomes in remote rural areas of Lao PDR.

Acknowledgments

The authors gratefully acknowledge the Faculty of Public Health, Chiang Mai University, Health Promotion Center Region 1, Health Center for Ethnic Group, Marginal People and Migrant Worker, Department of Health, Ministry of Public Health, Thailand, and Bokeo Provincial Health Office, Bokeo province, Lao People's Democratic Republic. The cooperation of all participants during this study was also highly appreciated.

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