The Introducing of Community-Based Health Insurance (CBHI) in Lao PDR "A Systematic Review"

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A Master's Thesis
Submitted to the Department of Global Health Security
Division of Global Health Security Response Program
and the Graduate School of Public Health of Yonsei University
in partial fulfillment of the
requirements for the degree of
Master of Public Health

Hongkham XAYAVONG

December 2020

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December 2020

DEDICATION

Every challenging work need self-efforts as well as guidance of elders especially those who were very close to our heart. I dedicated to my mother, a strong and gentle soul who taught me to trust and believe in hard work and that so much could be done with little. To my grandmother, who love and prays of day and night make me able to get success and honor. To my aunt, for being my first teacher. To my brother, for always respect and believe in me. Along with all hard working and respected to teachers.

ACKNOWLEDGEMENT

I would like to express my profound thanks to my family for believe and always support on me in the course of the study. Also, I am highly indebted to Prof. Taehyun Kim, my supervisor, for his expertise and professional guidance throughout the process of this study. Without his support, this thesis would not be completed.

My sincere gratitude goes to my committee Prof. Whiejong Han for his valuable advice and everlasting guidance. I also would like to express my profound gratitude to Prof. Sang Gyu Lee my committee, for his helpful suggestion, comment and expert advice.

Furthermore, I would like to extend my gratitude of Prof. Won Seok Sir; Prof. Myung Ken Lee; Prof. Whiejong Han and the administrative staff of the Department of Global Health Security, Graduate School of Public Health, Yonsei University, particularly Ms. Hwayoung Kim in recognition of their overwhelming support in the course of my study.

Also, National Health Insurance Bureau (NHIB) of Lao PDR are very much appreciated for their support in the data and information about the consolidation of health insurance. My deepest thanks go to the KOICA, to keep me a chance to study here in Korea. I equally thank Lao Tropical and Public Health Institute, for their generous help and support. Finally, to my colleague GHSA students, for their friendship and technical support throughout the study.

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ABBREVIATION

ACA	Affordable care act
CBHI	Community-based health insurance
CI	Confidence interval
CHEs	Catastrophic health expenditures
CSS	Civil servant scheme
EQ-5D	EuroQuol-5 dimensions
FGDs	Focus group discussions
HEF	Health equity funds
IPD	Inpatient department
LAK	Lao kip currency
LDC	Least developed country
LMIC	Low- and Middle-income countries
MCH	Mother and child health insurance
MHI	Micro health insurance
MOH	Ministry of Health
NCBI	National Center for Biotechnology Information
NHI	National health insurance
NHIB	National health insurance bureau
NHIS	National health insurance scheme
NHSDP	National health sector development plan
OOP	Out-of-pockets
OOPEs	Out-of-pocket expenditures
OPD	Outpatient department
PHI	Private health insurance
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses

SASS	State Authority Social Security
SDGs	Sustainable development goals
SSO	Social security office
UHC	Universal health coverage
WHO	World health organization
WTJ	Willingness to join
WTP	Willingness to pay

ABSTRACT

Background: Community-based health insurance (CBHI) schemes are usually voluntary and characterized by community members pooling funds to offset the cost of healthcare. In Lao PDR, to improve the health system, the government launched four health financing schemes targeting specific groups in the population, including SASS, SSO, HEF and CBHI. Among the four schemes, only the CBHI scheme is based on voluntary membership and is implemented in a decentralized manner. Therefore, I performed the systematic review in order depict a comprehensive picture on the current evidence-based researches of CBHI in Laos. In detail, this study summarized the topic that were investigated and corresponded finds.

Method: I conducted a systematic search of literature according to 2 databases (PubMed and NCBI) to identify peer-reviewed studies published in English or Lao between 2011 to 2020. By addressed the community-based health insurance in Lao PDR. Base on the inclusion criteria, 11 articles were included in this systematic review.

Results: Most of the studies were qualitative and quantitative researches with topics such as potential demand for voluntary community-based health insurance in Lao PDR, the impact of CBHI, factors affecting to willingness to join CBHI, as well as achieving universal health coverage through voluntary insurance.

Conclusion: CBHI schemes cannot attract many people by their functional nature, but CBHI in Lao PDR is still at the development stage. Therefore, those evidence-based articles, findings suggested and strategy. Together with the initiation of new health reforms and as a complement to redesign the benefit package such that it fulfills the expectations of the targeted enrolment, more empirical researches should be conducted on issues relating to the practical operation of CBHI to ensure greater coverage of the CBHI scheme in the future.

Keywords: Community-based health insurance, National health insurance, Lao PDR

CHAPTER 1: INTRODUCTION

Laos Country Profile

The Lao People's Democratic Republic (Lao PDR) is a Southeast Asian country, which shares a border with China, Cambodia, Myanmar, Thailand and Vietnam. It has a population of 6.8 million and a life expectancy at birth of 65 years (males) and 68 years (females). The national health indicators of the Lao PDR have been improving steadily over the past three decades. Along with its 8th National Health Sector Development Plan (NHSDP) 2016-2020, Lao PDR has launched a National Health Sector Reform Strategy and Framework 2013-2025, and in recent years the Ministry of Health has made significant progress in strengthening the country's health system with the development partners. At the urban level this has been successful, but there is still must work to be done to have these effects trickles down to rural areas where accessibility is poor and out-of-pocket payments remain high.

Figure. 1 Lao PDR map with neighboring border

1.1 Background

Health systems play a critically important role in improving health. Well-functioning health systems enable achievement of good health with efficient use of available resources. Effective health systems also enable responsiveness to legitimate expectations of citizens and fairness of financing. By helping produce good health effectively, health systems also contribute to economic growth [1].

Since according to the World Health Organization (WHO), in order to achieve Universal Health Coverage, the health system strengthening should be in place and joined together with the Universal Health Coverage [2]. The Universal Health Coverage implies that all people and communities receive the quality health services they need, without financial hardship [3]. Access to basic health services with no financial limit is one of the most important goals of governments [4]. Emphasis has been put on utilization of health services at the highest possible level in WHO's report and the most countries' constitutions [5]. Nowadays, health insurance is considered as a path to achieve universal health coverage (UHC). In addition to protecting financial risks, UHC covers two other dimensions: population coverage and services package [6, 7].

Since 2009, the Lao People's Democratic Republic has witnessed important achievements in health outcomes for its population as well as significant changes to the health sector. As the country moves towards UHC through implementing health sector reform, the five essential attributes and their related action domains outlined in the WHO Universal Health Coverage: Moving Towards Better Health – Action Framework for the Western Pacific Region provide a useful tool for monitoring progress and realigning national approaches towards attaining targets [8-10].

The Lao People's Democratic Republic is committed to the principle of Leaving No One Behind. The country faces considerable equity-related issues due to its diverse geographic and ethnic make-up, and considerable efforts have been made since 2010 to tackle both demand and supply side barriers to access and promote health

service utilization for these remote and marginalized populations [11]. Reducing reliance on donor funding is a key element of health system sustainability. This issue is of growing importance in the Lao People's Democratic Republic and stakeholders stress the need for the NHI scheme to cover the shortfall as donors start to reduce their funding. Efforts are being made by the Ministry of Health and development partners to harmonize various sources of funding with the common goals of LDC graduation by 2020, UHC by 2025 and SDGs by 2030 [8].

In 2016, Lao People's Democratic Republic's landmark National Health Insurance Scheme has been progressively scaled up, streamlined and consolidated to deliver on the country's goal to achieve universal health coverage by 2025. The Government of the Lao People's Democratic Republic is working towards the ambitious goal of achieving Universal Health Coverage (UHC) by 2025, through the progressive expansion of its National Health Insurance (NHI) scheme [12].

In an attempt to address this, the Government of Lao People's Democratic Republic initiated various social health protection schemes. These included compulsory contributory schemes covering employees in private and public enterprises; a voluntary contributory scheme for informal workers and a social assistance scheme for poor households and recipients of maternal and child health treatment. In recognition of the poor outcomes of this fragmented system, strong political will for reform within Lao People's Democratic Republic's health protection landscape mounted. This momentum resulted in the development of the National Health Insurance (NHI) scheme in 2016, which is administered by the National Health Insurance Bureau (NHIB) under the Ministry of Health [8, 12].

National Health Insurance (NHI) is a key component of the country's strategy to achieve UHC by 2025 and reflects the Government's commitment to the Sustainable Development agenda. To access care under NHI, patients pay a low co-payment at facility level ranging from 5,000 to 30,000 LAK (roughly 50 cents to US$3), depending on their treatment needs [13]. The NHI scheme now relies

predominantly on tax-based financing, which is combined with contributions from workers in formal employment. This ensures that those without the means to contribute are not excluded from accessing treatment [14].

1.1.1 Community-based health insurance (CBHI) schemes in Lao PDR

Community-based health insurance (CBHI) schemes are usually voluntary and characterized by community members pooling funds to offset the cost of healthcare. They can have other positive impacts however, such as community development and local accountability of healthcare providers [15].

In Lao PDR, to improve the health system, the government launched four health financing schemes targeting specific groups in the population, including State Authority Social Security (SASS) for government workers, the Social Security Organization (SSO) for salaried employees of private and state-owned enterprises, Health Equity Funds (HEFs) for the extremely poor, and CBHI for workers in the informal sector [16]. Among the four schemes, only the CBHI scheme is based on voluntary membership and is implemented in a decentralized manner [17].

Currently, the benefit package of the CBHI scheme covers outpatient and inpatient services, including primary health care, specialist services, diagnostic tests, and prescribed pharmaceuticals that are available in hospitals. In 2002, the Ministry of Health introduced the CBHI scheme as a pilot project in two districts, with technical assistance from the WHO and financial support from the United Nations Human Security Fund. As of September 2015, the scheme was available in 50 of the 148 districts in 17 of the 18 provinces, which is equivalent to 2,271 of the 8,507 villages. The total number of beneficiaries is reported to be 33,795 households (179,534 people) [18].

Therefore, I performed the systematic review in order depict a comprehensive picture on the current evidence-based researches of CBHI in Laos. In detail, this study summarized the topic that were investigated and corresponded finds. Also, their implications, suggestions and future research direction will be included.

1.2 Study Purpose and Objective

1.2.1 Study purpose

This article aims at studying the performed the systematic review in order depict a comprehensive picture on the current evidence-based researches of community-based health insurance (CBHI) in Lao PDR.

1.2.2 Specific objective

This systematic review intend to overview of community-based health insurance (CBHI) schemes by carried out a literature review of the articles that were conducted before by summarized the topics that were investigated and corresponding finding. From their implications, practical suggestions and future research direction could be concluded.

CHAPTER 2: LITERATURE REVIEW

2.1 Review of Literature Relevant to the Study

2.1.1 Theory of the Demand for Health Insurance

The theory of the demand for health insurance was suggests that moral hazard is primarily an income transfer effect. In an estimation based on parameters from the literature, the value of moral hazard consumption is found to be 3 times greater than its costs, suggesting that income transfer effects dominate price effects and that moral hazard is welfare-increasing. The conventional theory of health insurance has held that becoming insured acts like a reduction in the price of health care, just as if the price reduction had occurred exogenously in the market [19].

According to Theory of the Demand for Health Insurance, the mechanism by which insurance is financed can be ignored because the effect of premiums on the demand for medical care an income effect is empirically negligible [19]. *Newhouse* (1978) used to write about the relationship between health insurance and demand like this: “For the purpose of studying the relationship between health insurance and demand, the important point is that insurance is like a subsidy to purchase medical care; that is, it lowers the per-unit price of care. Although there is an income effect caused by premiums or taxes paid to finance the insurance benefits, these income effects can be shown to be empirically negligible in their effect on the demand for care…[20]”

The Theory also emerged in economic literature as well. The majority assume that insurance payments are cash “indemnity” payments, with the amount of the payments specifically tied to the occurrence of the given event [21], and the insured loss are monetary. In addition, the health insurance differs from both of these considerations. Typically, insurance payments are proportional to the amount of the medical care purchased [22]. Furthermore, underlying loss in not necessarily

financial; it may be considered as a loss from a stock of health that may be corrected through the purchase of medical care [23].

Economists have applied the state dependent approach to diverse set of economic problems involving irreplaceable effects, product safety, and accidents [24-32]. *(W. Kip Viscusi and William N. Evans;* 1990*)* used to mentioned about estimates and economic implications in utility function that depend on health status like “Taylor's series and logarithmic estimates of health state dependent utility functions both imply that job injuries reduce one's utility and marginal utility of income, thus rejecting the monetary loss equivalent formulation. Injury valuations have unitary income elasticity, and the valuation of non-incremental risk changes and effects of base risks follow economic predictions [33].

Also, a central implication of this theory is that any additional health care consumed as a result of becoming insured that is, any moral hazard is welfare-decreasing. This welfare-loss argument, first made by *Pauly* (1968) [34]. Because of this theory, many health economists have focused on policies that would reduce consumption at the margin. For example, *Feldstein* (1973) argues that the tax subsidy for employer-based health insurance has resulted in American families spending too much on health care. He concludes that raising the coinsurance rate from 33% to 67% would increase societyís welfare [35].

There were some argued about insurance like, *Kenneth J. Arrow* (1963) argued that where private markets for insurance particularly health insurance were absent, a strong case could be made for governmental provision of insurance [36]. In an almost equally well known comment five years later, *Mark V. Pauly* (1968) observed that health insurance often induces moral hazard, resulting in an inefficient reallocation of resources, and that institutionalizing such inefficiency through government regulation could potentially be welfare-reducing [37]. Thus, moral hazard weakened the case for national health insurance.

2.1.2 The Global status on Demand for Health Insurance debate

Pauly's (1968) essay assumed a fixed individual demand curve for health care and a constant marginal cost of production [34]. Together, these determined an efficient optimum for an uninsured patient: the marginal willingness to pay for care (as represented by the demand curve) was equal to the marginal cost of care. If the same individual were insured, however, the author would perceive a lower out-of-pocket price for care (zero, if there was no coinsurance), and move down the demand curve; unless demand had no price elasticity, the insured would then consume more units of medical treatment. The marginal cost of health care would exceed the consumer's willingness to pay for the extra units, and inefficiency would thereby be introduced. Moreover, forcing such individuals to pay for access to this care through taxes could potentially make them worse-off than they would be without insurance [38].

Fifteen years later, *David de Meza* (1983) argued that an ill consumer's demand curve is not the same when insured as when uninsured [39]. Rather, the reimbursement of medical expenses provided by insurance shifts the demand curve outward just as a cash transfer would. Thus, the consumer's willingness to pay increases with insurance coverage, and *Pauly's* (1968) model therefore overstates the inefficiency induced by moral hazard. In response, *Pauly* (1983) acknowledged that income effects might indeed matter for critically ill patients, but asserted that moral hazard among healthier consumers was still largely inefficient [38].

In subsequent articles, *Nyman* (1999) and *Nyman and Roland Maude Griffin* (2001) elaborated on de Meza's basic insight, using indifference curves and budget constraints to illustrate the difference between efficient and in efficient moral hazard [19, 40]. Then, *Nyman's* (2003) book pursues the idea even further indeed, it seeks to expand the analysis of moral hazard into an entirely new theory of the demand for health insurance [38].

2.2 Review of Previous Research Related to the Study

2.2.1 The concept of universal health coverage in the national health insurance with CBHI for financial protection

The main purpose of the Universal Health Coverage (UHC) proposal is to promote financial health protection, that everyone can access health services without experiencing financial difficulties, reducing direct payments at the time of use (OOP), and avoiding catastrophic expenditure. The use of the word “coverage” refers to financial coverage due to an insurance affiliation. In other words, it means that everyone should be affiliated to some type of insurance. The key element of UHC is the combination of public and private funding (insurance premiums, social contributions, philanthropy, general taxes) in funds managed by private or public insurers to finance the health expenditures of plan holders in accordance with their package. Eligibility is conditional upon affiliation to some form of health insurance (private or public). Individuals are eligible, or not, depending on the rules of each insurance policy, or their ability to pay [41].

In the Universal Health Coverage concept it is understood that the public sector is unable to meet the health demands of the population. The privatization of health insurance and health services is advocated, based on the argument that private provision is more efficient; an assertion that lacks evidence. Private providers respond to demands and not the health needs of the population; they are based in areas of greater socioeconomic development; they offer more profitable services; they provide more unnecessary services and violate standards of good medical practice more often; they are less efficient and have worse health outcomes than public services. However, they also provide more timely attention and more personalized care [42, 43].

Table 1. Types of financial arrangements

Financial Arrangement [44]	Definition
Collection of funds	
User fees	Charges levied on any aspect of health services at the point of delivery
Prepaid funding	Collection of funds through general tax revenues versus earmarked tax revenues versus employer payments versus direct payments
Community loan funds	Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs
Health savings accounts	Prepayment schemes for individuals or families without risk pooling
External funding	Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system
Insurance schemes (pooling of funds)	
Social health insurance	Compulsory insurance that aims to provide universal coverage
Community-based health insurance	A scheme managed and operated by an organization, other than the government or private for-profit company, that provide risk pooling to cover all or part of the costs of health care services
Private health insurance	Private for-profit health insurance
Purchasing of services	

Funding of health service organizations	Fee-for-service versus capitation versus prospective payment versus line item budgets versus global budgets versus case-based reimbursement (including diagnostic related group payment schemes) versus mixed methods of paying for health service organizations
Payment methods for health workers	Fee for services versus capitation versus salary versus mixed methods of paying health workers
Financial incentives for recipients of care	
Financial incentives for recipients of care	Financial or monetary incentives or removal of disincentives to change specified behaviours of recipients of care
Conditional cash transfers	Monetary transfers to households on the condition that they comply with pre-defined requirements
Voucher schemes	Provision of vouchers that can be redeemed for health services at specified facilities
Caps and co-payments	Direct patient payments for part of the cost of drugs or health services
Financial incentives for providers of care	
Pay-for-performance	Transfer of money or material goods to healthcare providers conditional on taking a measurable action or achieving a predetermined performance target
Budgets	Funds that are allocated by payers to a group or individual physicians to purchase service (including fund holding and indicative budgets)

Incentives to practice in underserved areas	Financial or material rewards for practicing in underserved areas
Incentives for career choices	Financial or material rewards for career choices; for example, choice of profession or primary care

Roger Antabe (2019) demonstrated that, in their study among arising from this is how poverty has been operationalized and how poor people are targeted for enrolment into the scheme. They examined the role of food insecurity as a multidimensional vulnerability concept on enrolment into Ghana's health insurance using binary logistics regression on cross-sectional survey of household heads in the Upper West Region of Ghana. Based on their findings, it is crucial to incorporate food security status in the identification of vulnerable people for free enrolment in Ghana's health insurance [45].

FM Knual and J Frenk (2005) used to mentioned that, the fairness in finance is an intrinsic and challenging goal of health system and Mexico in that year devised a structural reform response to those challenge. In their study almost focus on a new system of social protection in health that will offer public insurance to all citizens, the reform is expected to reduce catastrophic and out-of-pocket spending while promoting efficiency, more equitable resource distribution, and better-quality care [46].

Stephen Mulupi (2013) stated that health insurance is currently being considered as a mechanism for promoting progress to universal health coverage (UHC) in many African countries. The concept of health insurance is relatively new in Africa, it is hardly well understood and remains unclear how it will function in countries were the majority of the population work outside the formal sector. This study contributes in exploring communities' understanding and perceptions of health insurance and their preferred designs features considered to ensure acceptability and sustainability [47].

Even Lao PDR has embarked on a path to achieve universal health coverage (UHC) through implementation of four risk-protection schemes. One of these schemes is community-based health insurance (CBHI) a voluntary scheme that targets roughly half the population. However, after 12 years of implementation, coverage through CBHI remains very low. In 2013, (*S Alkenbrack; B Jacobs and M Lindelow*) was study by explore the prospects of both types of expansion by examining household and district level data. To clearly see about an increasing coverage of the scheme would require expansion to households in both villages where CBHI is currently operating, and new geographic areas [48].

"CBHI implementation requires the following considerations: conformity with society values and government priorities, a comprehensive benefits package, trusted quality of healthcare services, affordable fees, trusted leadership and management systems" said by *Alex A Kakama* (2020). The CBHI concept developed out of a need for financial protection against catastrophic health expenditures to the poor after failure of other health financing mechanisms. CBHI schemes reduce out-of-pocket payments and improve access to healthcare services in addition to raising additional revenue for the health sector. Their study focuses on exploring the feasibility and desirability of scaling up CBHI in Rubabo County and they conducted research by using qualitative methods of Key informant interviews and Focus Group Discussions (FGDs) [49].

2.2.2 The enrolment into Community-Based Health Insurance scheme in Asia

Sayem Ahmed (2018) demonstrated that, community-based Health Insurance (CBHI) schemes are recommended for providing financial risk protection to low-income informal workers in Bangladesh. In total, 1292 (646 insured and 646 uninsured) respondents were surveyed using the Bengali version of the EuroQuol-5 dimensions (EQ-5D) questionnaire for assessing their health status. The EQ-5D scores were estimated using available regional tariffs. Multiple

logistic regression was applied for predicting the association between health status and CBHI scheme enrolment. And the regression analysis showed that those who had a problem in mobility (m 1.25-2.17); self-care (OR = 2.29; 95% CI: 1.62-3.25) and pain and discomfort (OR = 1.43; 95% CI: 1.13-1.81) were more likely to join the scheme. Individuals with higher EQ-5D scores (OR = 0.46; 95% CI: 0.31-0.69) were less likely to enroll in the scheme [50].

David M Dror (2016) stated that, the evidence-base of the impact of community-based health insurance (CBHI) on access to healthcare and financial protection in India is weak. They investigated the impact of CBHI in rural Uttar Pradesh and Bihar s0 tates of India on insured households' self-medication and financial position. The resulted of the study show that, the realized benefits of insurance included better access to healthcare, reduced financial risks and improved economic mobility, suggesting that in our context health insurance creates welfare gains [51].

Hansoo Ko (2018) said that, although community-based health insurance (CBHI) schemes have been considered as an intermediate stage to achieve universal health coverage (UHC) in low-resource settings, there is a knowledge gap on ways to make it better. The study found significantly positive relationships between social capital and willingness to join and willingness to pay for CBHI in Nepal. Policymakers, aiming to achieve UHC, should be advised that bonding and bridging social capital have differing relationships with willingness to cooperate the external funding sources [52].

Somdeth Bodhisaen (2019) also mentioned that, community-based health insurance (CBHI) targets independent worker (self-employed) is currently struggling with inadequate size of risk pooling, low enrollment, and high dropout rate as well as financial sustainability. The objective of the study is to find out the factors that significantly affect the CBHI enrollment incentive. The model found that existence of both outpatient department (OPD) and inpatient department (IPD)

health service utilization had significant impact on the CBHI enrollment, that statement is strongly related to adverse selection issues. Occupation was also found to be a significant factors; of which farmers and laborers had lower possibility enrollment [53].

2.2.3 A Systematic Review

Systematic reviews, as the name implies, typically involve a detailed and comprehensive plan and search strategy derived a priori, with the goal of reducing bias by identifying, appraising, and synthesizing all relevant studies on a particular topic. Often, systematic reviews include a meta-analysis component which involves using statistical techniques to synthesize the data from several studies into a single quantitative estimate or summary effect size [54].

Systematic reviews differ from traditional narrative reviews in several ways. Narrative reviews tend to be mainly descriptive, do not involve a systematic search of the literature, and thereby often focus on a subset of studies in an area chosen based on availability or author selection. Thus narrative reviews while informative, can often include an element of selection bias. They can also be confusing at times, particularly if similar studies have diverging results and conclusions [55].

Suzanne G. M. van Hees (2019) conduct a systematic review of how social inclusion affects access to equitable health financing arrangements in LMIC. By searched among 11 databases to identify peer-reviewed studies published in English between January 1995 and January 2018 that addressed the enrolment and impact of health insurance in LMIC for the following vulnerable groups: female-headed households, children with special needs, older adults, youth, ethnic minorities, migrants, and those with a disability or chronic illness [56].

Shifa Salman Habib (2016) use a systematic review to assess the extent to which Micro health insurance (MHI) has contributed to providing financial risk protection to low-income households in developing countries, and suggest how the

findings can be applied in the Pakistani setting. By conducted a systematic search for published literature in last ten years, using the search terms “Community based health insurance and developing countries”, “Micro health insurance and developing countries”, “Mutual health insurance and developing countries”, “mutual or micro or community based health insurance” “Health insurance and impact and poor” “Health insurance and financial protection” and “mutual health organizations” on three databases, Pubmed, Google Scholar and Science Direct (Elsevier) [57].

Stephanie Newell (2015) used a systematic review to synthesize the eligible evidence of patients' experience of engaging and interacting with nurses, in the medical-surgical ward setting. Which focus on including the patient and their information in real-time are considered by many to be crucial to the advancement of improved health outcomes and the reduced costs that are required of health care to be sustainable [58].

To conduct a systematic literature review of selected major provisions of the Affordable Care Act (ACA) pertaining to expanded health insurance coverage. *Michael T French* (2016) present and synthesize research findings from the last 5 years regarding both the immediate and long-term effects of the ACA [59].

Tsair Wei Chein (2018) said that many researchers used National Health Insurance database to publish medical papers which are often retrospective, population-based, and cohort studies. However, the author's research domain and academic characteristics are still unclear. This study contributes by searching the PubMed database, used the keyword of [Taiwan] and [National Health Insurance Research Database], then downloaded 2913 articles published from 1995 to 2017 [60].

In 2018, *E S Gnanamanickam* stated that Private health insurance plays a key role in financing dental care in Australia. To systematically review the relationship between dental insurance and dental service use and/or oral health

outcomes in Australia. This study search of online databases and subsequent sifting resulted in 36 publications, 33 of which were cross sectional and three cohort analyses [61].

To determine whether enrollment in the National Health Insurance Scheme (NHIS) reduces the likelihood of out-of-pocket expenditures (OOPEs) and catastrophic health expenditures (CHEs) in Ghana, *Juliet Okoroh* (2018) undertook a systematic review of the published literature. They searched for quantitative articles published in English between January 1, 2003 and August 22, 2017 in PubMed, Google Scholar, Economic Literature, Global Health, PAIS International, and African Index Medicus [62].

Also, to assess the barriers and facilitators to implementation, uptake and sustainability of Community-based Health Insurance (CBHI) schemes in LMICs. *Racha Fadlallah* (2018) searched six electronic databases and grey literature and the findings based on thematic analysis and categorized according to the ecological model into individual, interpersonal, community and systems levels [63].

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Method

3.1.1 Search Strategy

To conduct this study, I conducted a systematic search of the literature according to the PRISMA guideline for systematic review [64]. To begin with, searches was conducted in two major electronic databases including PubMed and NCBI. Using keyword with "the community-based health insurance", "health insurance in Lao PDR" and "health insurance in Asian country". Furthermore, all searches were performed in 2011 to 2020.

3.1.2 Inclusion and Exclusion Criteria

Inclusion criteria if they were:

- Studied at community-based health insurance (CBHI), health insurance, or in which the study evaluates several insurance types.
- Studied in Lao PDR, or in which area/provinces in the country.
- Were published in Lao or English.

Exclusion criteria if they were:

- Were published before 2011, because other reviews on health insurance in Laos found few studies before then.
- Provinces/area which do not have any steps for applying Health Insurance; especially community-based health insurance scheme (CBHI).
- Do not a Lao population.

3.1.3 Observation items

Data about health insurance cover by Lao population and its types of health insurance scheme especially the community-based health insurance (CBHI).

3.1.4 Data Collection Process

The research result was met by 735 studied from two databases, 33 from PubMed and 702 from NCBI. After review, a types of health insurance scheme were shortlisted for review of inclusion criterion. Furthermore, through systematic database search, were included in the final list of articles for data extraction, bringing of total number of included studies to 11.

3.1.5 Data Extraction

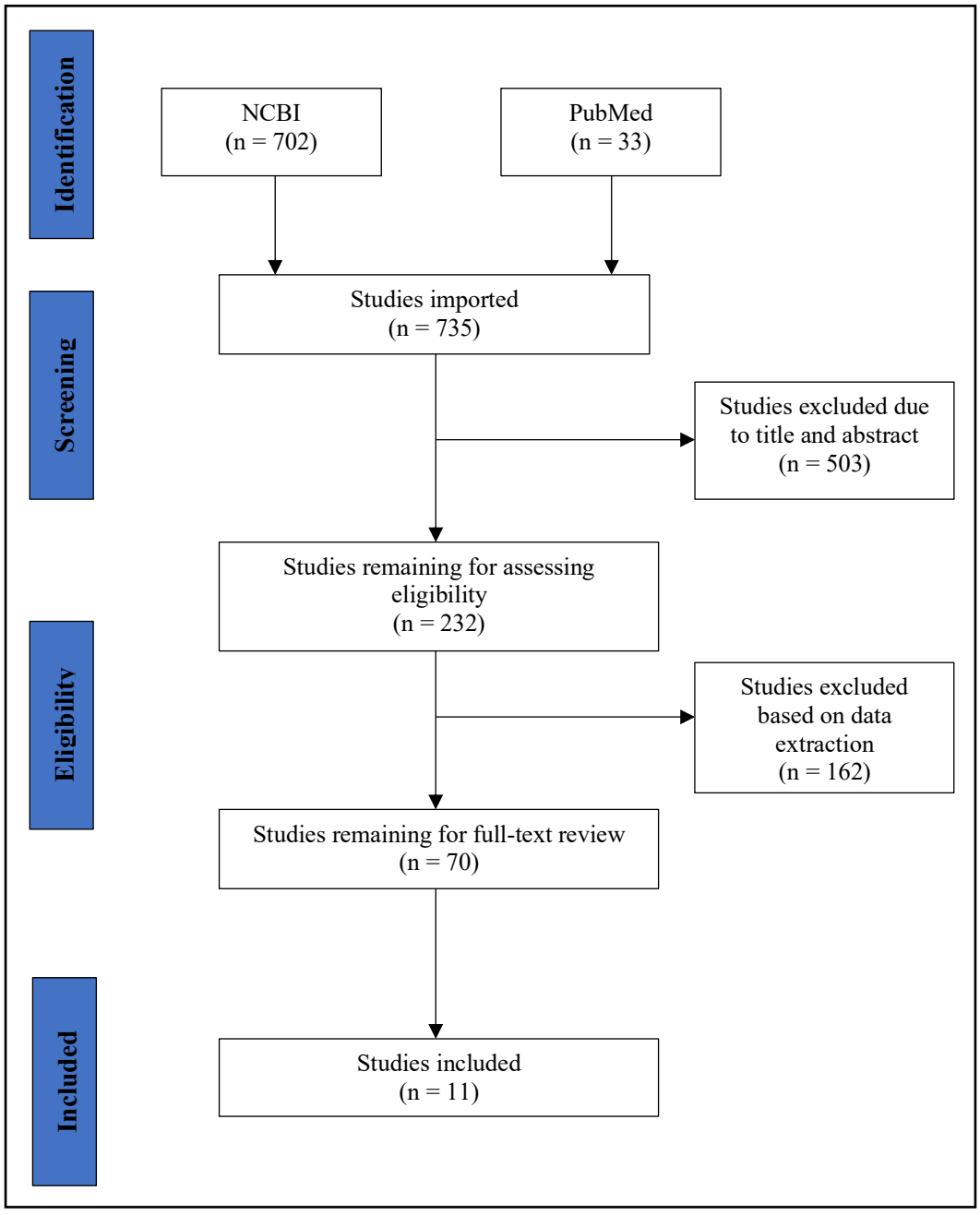
Data was extracted included the following:

- Year of publication
- Date of review
- Province/Area of intervention
- Type of Health Insurance Scheme (CBHI)
- Study population (Laotian)
- Health Insurance services (reported health indicators grouped into enrolment, utilization, financial protection, health outcomes and quality of care)
- Key finding
- Citation

3.1.6 Data Synthesis and Presentation

This will be synthesized the findings descriptively. Descriptively present the main findings according to each article describing the observations form the studies, data was extracted including name of author, year of publication, study design, target population, purpose of the study, methodology, analysis, and key findings. Out of these, all of the information was recorded in the standard data extraction table. The number of retrieved citations for each of 2 databases is summarized as Figure. 2

Figure. 2 The Flowchart of the result searching and selection



CHAPTER 4: RESULTS OF THE STUDY

This chapter is divided into seven parts. The first part describes study general characteristics of the reviewed paper. Regarding to the purpose of the studies, the result is categorized into several group, including current enrolment situation of community-based health insurance, demand and supply, national health insurance, health financial protection, challenges and other issues.

4.1 Study characteristics

Out of 11 reviewed papers, around one-fourth were published in the period from 2019 to 2020, while the rest were published in the period from 2011 to 2017. The hereinafter are the highlights with according to the methodology. Firstly, most of the researches were in qualitative design and included both quantitative and qualitative measurement; except one study were in quantitative design. Secondly, most of the studies investigated the situation of CBHI in Laos. Therefore, the targets area in the provincial especially in South region, such as Savannakhet, Champasack, Attapue, Sekong and Saravan Provice. Followed by North region, such as Luangprabang, Luang Namtha, Bolikhamxay, Xiengkhuang and Vientiane Province. In the other side, survey was focus on National Health Insurance (NHI), Out-of-pocket payments (OOP), Accessing to healthcare and Universal Health Coverage (UHC). Thirdly, some of the policy analysis papers in the studies were eminently used in the reviewed reports. As you can see, table 1 provides an overview of characteristics 0f 11 reviewed papers, including study location, study design, data source, target population or sample size and author with the publication year. For table 2 showed the main finding of the reviewed papers.

Table 2. Basic characteristics summary of the reviewed papers

No.	Study Location	Study Design	Data Source	Target population/Sample size	Author and Publication Year
1	Nambak District, Luangprabang Province	Qualitative	Interview	(1) A district (2) A voluntary member, who regularly paid their premiums	Peter Leslie, Maryam Bigdeli, Bart Jacobs (2011) [65]
2	Hospital in 3 provinces (Luangprabang, Vientiane and Savannakhet)	Quantitative	Interview	828 Patients	Lamphone Syhakhang, Douangdao Soukaloun, Goran Tomson, Max Petzold, Clas Rehnberg, Rolf Wahlstrom (2011) [66]
3	Main institutional and organizational related to the creation of the NHIA	Qualitative	(1) Review of key health financing policy documents (2) Semi-structured key informant interviews	17 key informants working nationally at the policy and operational level	Shakil Ahmed, Peter Leslie Annear, Bouaphat Phonvisay, Chansaly Phommavong, Valeria de Oliveria Cruz, Asmus Hammerich, Bart Jacobs (2013) [67]
4	87 villages across 6 districts (3 Provinces: Hatxaifong and Sisatanak in Vientiane Capital; Viengkham, Phonehong and Keodoum in Vientiane	Quantitative and Qualitative	(1) Household survey (2) Interview	3,000 households	Sarah Alkenbrack, Bart Jacobs, Magnus Lindelow (2013) [48]

	Province; Champasak in Champasak Province)				
5	87 villages across the following 6 districts (3 Provinces: Hatxaifong and Sisatanak in Vientiane Capital; Viengkham, Phonehong and Keodoum in Vientiane Province; Champasak in Champasak Province)	Qualitative	(1) Household survey (2) Interview	3,000 households (14,804 individuals)	Sarah Alkenbrack, Magnus Lindelow (2015) [68]
6	Restaurants and entertainment venues in Vientiane City	Qualitative	In-depth interview	24 female beer promoters worked in beer shop	Vanphanom Sychareun, Viengnakhone Vongxay, Vassana Thammavongsa, Souksamone Thongmyxay, Phuthong Phummavongsa, Jo Durham (2016) [69]
7	Kaysone Phomvihane and Champhone district, Savannakhet province	Quantitative and Qualitative	(1) Household survey (2) Interview	252 households Insured (126) Uninsured (126)	Somdeth Bodhisane, Sathirakorn Pondpanich (2017) [70]
8	Kaysone Phomvihane and Champhone	Quantitative and Qualitative	(1) Household survey	342 households	Somdeth Bodhisane, Sathirakorn

	district, Savannakhet province		(2) Interview		Pondpanich (2019) [71]
9	Champhone and Xaibouly district, Savannakhet province	Quantitative and Qualitative	Survey	Samples: 580	Thiptaiya Sydavong, Daisaku Goto, Keisuke Kawata, Shinji Kaneko, Masaru Ichihashi (2019) [17]
10	Kaysone Phomvihane and Champhone district, Savannakhet province	Quantitative and Qualitative	(1) Survey (2) Interview	Sample size: 328 164 (Kaysone Phomvihane district) 164 (Champhone district)	Somdeth Bodhisane, Sathirakorn Pondpanich (2019) [53]
11	6 provinces (Saravan, Attapue, Sekong, Borikhamxay, Xieng khouang, Luang Namtha)	Qualitative	Interview	1,860 patients (310 patients at each provinces)	Kongmany Chaleunvong, Bounfeng Phoummalaysith, Bouaphat Phonvixay, Manithong Vonglokham, Vanphanom Sychareun, Jo Durham, Drik Essink (2020) [72]

Table 3. Summary of measurement variable and main findings of the reviewed papers

No.	Dependent variable	Independent variable	Findings
1	Equity and effectiveness in purchasing health insurance premiums	(1) Financial data (population coverage, premium rate, facility contact rate, capitation rate, cost of treatment, changes in administration costs) (2) Cross-subsidization (3) Poor and Non-poor	(1) Determining the financial flows between the subsidy and the insurance schemes (2) Purchasing premiums for the poor is more costly than direct reimbursement (3) Negative cross-subsidization was revealed (4) The same level of access for the poor could have been achieved by the health equity fund to the provider rather than through the community-based health insurance
2	The appropriateness and expenditure	(1) Income (2) Expenditure (3) Informal payment (4) In-patient with surgical (5) Medicine (6) Obstetric and pediatric wards (7) Medical records (8) Out-patient with hypertension (9) Service received (10) Quality of care (11) Service fees	No significant difference in appropriateness of care for patient at different income levels, but higher expenditures for patients with the highest income level.
3	Universal Health Coverage	(1) Policy documents (2) Informants working nationally (3) Gender (4) Organizational focus (5) Program implementation role on social health protection schemes	(1) Institutional design for health financing (2) Organizational challenges (3) Potential impact on health financing performance
4	The prospects for expanding enrollment of CBHI	(1) District level with CBHI (2) District level without CBHI	(1) The CBHI households are larger, more than uninsured households. (2) CBHI households less healthy than uninsured households

		(3) Households enrolled in CBHI (4) Households unenrolled in CBHI	(3) Attitudes towards different sources of care serve as proxies for preferences for modern health care over traditional
5	Out-of-pocket payments	(1) CBHI villages (2) Non-CBHI villages (3) Outcome	(1) CBHI offers financial protection to member, despite the fact that CBHI members use more services. (2) CBHI is having its intended impact by increasing utilization (3) An inpatient visit indicates that insurance help individuals (and households) smooth consumption, thereby reducing the likelihood of having to borrow money, seeks help from friends and relatives, sell assets or reduce expenditures in other areas (4) Insurance can have positive welfare implications by facilitating utilization and reducing financial barriers
6	Accessing healthcare	(1) Female (2) Age (3) Urban districts (4) Beer shops/restaurants area (5) Economic (6) Income	A need to move away from understanding inequality in access to healthcare only through frameworks that focus supply and demand-side factors and ones that focus on individual 'choices' and behaviors to one that embraces broader frameworks
7	The role of community-based health insurance	(1) Socio demographic status (2) CBHI membership status (3) Income and expenditure (4) History of hospitalization and morbidity (5) Health service utilization (6) Hospitals area	(1) Insurance status is not an important factor that increases the incentive of hospitalization (2) Economic status was a key factor in determining catastrophic expenditure (3) Insured respondents have a lower probability of experiencing catastrophic expenditure (4) The CBHI health care package does not present a significant impact in reducing catastrophic payment
8	(1) National Health Insurance (2) Financial protection from catastrophic health expenditure	(1) Household socio economics (2) Accessibility to healthcare services (3) Financial payment (OPD and IPD services)	(1) The NHI is effectively easier to access for the general population, compared to its predecessor (2) Financial protection against catastrophic health expenditure, insured households were significantly protected by the CBHI scheme

		(4) Provincial hospital (5) District hospital (6) CBHI scheme outcome	
9	Demand for voluntary community-based health insurance	(1) Monthly premiums (2) One-year prepaid discounts (3) Insurance coverage for medical consultations (4) Hospitalizations (5) Traffic accidents (6) Pharmaceuticals (7) Transportations	Low enrollment in the CBHI scheme in Lao PDR does not necessarily indicate low demand by potential enrollees. The enrollment rate can increase if the benefit package is improved and transportation factors are addressed
10	Willingness-to-join (WTJ) the CBHI	(1) Socioeconomic (2) Demographic characteristics (3) Willingness to enroll in the scheme (4) Current health condition (5) Health seeking behaviors	(1) Outpatient department (OPD) and Inpatient department (IPD) health service utilization had significant impact on CBHI enrollment (2) Households resides in Kaysone Phomvihane district had higher probability of joining the scheme in comparison with relatively less-developed Champhone district (3) Households with know CBHI knowledge were also more likely to enroll the scheme (4) Farmers and laborers had lower possibility enrollment
11	(1) Patient payments exceeding NHI fees (2) Out-of-pocket payments	(1) socio-demographic (2) Living arrangements (3) Distance from home to health facilities (4) Type of health insurance (5) General patient payment at health facility (6) Medical services (7) Payment during hospitalization (8) Provision of NHI eligibility documents (9) Knowing about NHI	About 20% paid above the defined amount of payment for out – and in – patient services. These additional expenditures may be due to having to buy medicines or supplies not available in the public healthcare facilities or not covered by the scheme

4.2 Current Enrollment Situation

To understand current enrollment situation of CBHI in Lao PDR, researchers used the CBHI plan to describe as an indicator development level [70]. Community-based health insurance was introduced in 2002 by the Ministry of Health (MOH) and has since received technical assistance from various donors [68]. In this case, the government purchases the CBHI health care for the poorest income quintile as a means of increasing the risk-pooling condition of the CBHI plan as well. This matches with the result from another study like: The CBHI program has operated in Laos for more than 10 years. The Lao population still relies on Out-of-pocket (OOP) expenditure for both expected and unexpected health care service utilization (*Decree on CBHI Savannakhet Annual Report, Bounxou, 2012*). In the latest study released in 2019, the average willingness to pay (WTP) is at least at large as 10.9% of the per capita income of those in rural areas, which is higher than the WTP for health insurance averaged across low- and middle- income countries (LMICs) in the literature [17].

Hence, several findings revealed that there was an identified enrollment conditions in Lao PDR. Overall, the community-based health insurance enrollment (household levels) is the most commonly reported in this study. Like the study in 2015, reported the descriptive statistic about determinants of community-based health insurance enrollment (household level); The average household size is 5.32; the marital status of household head is 84.17%. Out of that, 43.10% completed primary level, 31.65% secondary level, and 5.08% university/institute level. Which means that, CBHI household are larger, more likely to be married, more educated, and household head are older relative to comparison household [68]. Later in 2019, the result of the study showed that the average household size is 5.92. While, 66% completed primary level, 19% secondary level, 13% upper level and 2% higher education [17]. Moreover, there is some evidence showing that people who are very risk averse are actually less likely to enroll in CBHI. Although, the enrolling in CBHI allows people to minimize their risk, some felt that enrolling in CBHI is a risky venture and that

enrolment actually increases risk, because one can't be sure that benefits will be delivered when they are needed [48].

One of the special findings has been demonstrated in a study conducted in 2019. The study conducted in Savanakhet province, finding that the CBHI scheme is currently struggling with low enrolment as well as a high dropout rate from the previous years. However, there is little evidence regarding factors affecting CBHI enrolment incentives [53]. In addition, the study also showed that household with unemployed heads had the highest possibility of enrolling in the scheme compared with farmers, street vendors, and laborers. Which the economic condition of the district has a significant impact on CBHI enrolment, but even so the increase in personal income does not directly enhance the desire for CBHI enrolment. Regarding the influence of demand and supply, it would be illustrated in the next section.

4.3 Demand and supply

As mentioned in the last section before, CBHI is a voluntary scheme that aims to cover non-poor independent worker and was first introduced in Lao PDR since 2002. Currently, the benefit package of the CBHI scheme covers outpatient and inpatient services, including primary health care, specialist services, diagnostic tests, and prescribed pharmaceuticals that are available in hospitals. The household is the unit of enrollment, and the premiums vary depending on urban or rural residence and the number of household members. The premium rates have not been updated since 2005 [17, 73]. Since 2012, 50% of scheme's revenue has come from collecting premiums, and the other 50% has come from government subsidies (*Decree on national health insurance, 2012*) [17, 65]. Therefore, out of 11 articles the related topic has been involved in almost one-third of the reviewed papers.

Apart from these, there is some evidence showing that in low-capacity environments, quality of care of covered services is often poor and therefore the features of CBHI may not be risk-minimizing relative to other options. For example, individuals

who perceive the public health care system to be of low-quality may view enrolling in CBHI (which requires users to first seek services at the district hospital in the public system, where quality is reportedly poor) as less attractive than remaining uninsured [17, 48, 68]. Which means, purchasing insurance for some could actually be considered riskier than not purchasing insurance, especially among the poor, for whom a given lose can be ruinous.

Another illustrated, was conducted in 2019 at Savannakhet province especially Champhone and Xaibouly district, the existence of round-trip transportation fee coverage significantly increases enrollment probabilities and willingness to pay (WTP). In the point of view, low enrollment in the CBHI scheme in Lao PDR does not necessarily indicate low demand by potential enrollees. The enrollment rate can increase if the benefit package is improved and transportation factors are addressed [17, 74].

4.4 Challenges

The challenge about CBHI barriers have also been well described in Lao PDR, especially for informal sector workers [69]. This may be especially the quality of care, with nevertheless remains a major challenge for Lao PDR despite steps towards improvement [72]. However, is of vital importance to the performance of health insurance schemes and enrolment. Besides, there was a study in 2019 talked about the serious issues face to Lao PDR nowadays, the health service utilization encounters serious issues regarding the availability constraint; for instance, also transportation to health facilities is very limited and loads conditions are not convenient proves time consuming for patients to be delivered to their closest public health facilities [71].

CBHI has been implemented mainly in urban and semi-urban areas, where health care services are of a reasonable quality and the socio-economic status of the target population is high enough to make the premiums affordable, and where administrative capacity is strong enough to administer the schemes at hospitals [68, 70]. It is expected that scale-up of the scheme to more remote areas will pose further challenges because of low

population density, poor geographical access to contracting facilities and limited acquaintance with and knowledge of modern health care among ethnic minorities.

Another challenge facing the CBHI scheme is financial sustainability: the scheme is currently not generating enough revenue to cover the cost of services and drugs offered to CBHI members. Only the salaries of health care workers are subsidized by the government; all other costs incurred by CBHI members are expected to be covered by the household premiums [68]. Furthermore, it is true that the CBHI plan covers all the medical costs and immensely reduces total health care expenditures, but patients' households also suffered from non-medical expenditure, which dramatically increase the chance of having a catastrophic health expenditure [70]. Regarding the influence of health financial protection, it would be illustrated in the next section

4.5 Health Financial Protection and Equity Functioning

Factors related to higher cost and lower quality of care for patients who make informal payments should be further explored [17, 68]. Besides, the equity of current health financial protection in Laos was not well-distributed. This matches with the result from another study like: CBHI in Laos is not adequately pooling risks across the healthy, sick, rich and poor, which showed that the low enrolment, combined with adverse selection, threaten countries' ability to raise sufficient revenues and achieve financial sustainability [48]. One of special of the study in 2015, about CBHI health financial protection determinant was external among out-of-pocket payments (OOPs) on CBHI offers financial protection to members, despite the fact that CBHI members use more services. Although Lao PDR's capitation payment discourages supplier-induced demand, it is possible that a future demand for expensive services, combined with poor regulation of utilization, could reverse these trends. However, nowadays over-utilization does not appear to be a problem, given the low utilization rates across the sample [68].

In other study since 2011, finding that in planning to combine HEF and CBHI scheme along the road to universal coverage, the short-term costs of negative cross-

subsidization may have to be discounted against the longer-term benefits of extended insurance coverage. Which mean, a positive outcome for all stakeholders demands careful management of policy settings related to the key variables identified [65]. Overall, improving quality of care in Lao PDR will require greater government investment such as in facilities and equipment, human resources, or increased financing of recurrent costs [48]. In order to achieve broad coverage of key health services and improve financial protection, it will be important to continue revising the health financing strategy, using both evidence from health systems reform within Lao PDR and experience from other countries [17, 48, 66-68].

4.6 National Health Insurance

Nowadays, Lao PDR in its efforts to achieve UHC, is shifting to a single-coverage National Health Insurance (NHI) program as opposed to having multiple schemes for different sub-populations [3, 48]. While the NHI scheme is tax-based system for the informal workforce with no formal enrolment into the NHI required as individuals are eligible when they use healthcare services based on the NHI rules, it is possible not all eligible individuals are aware of this. This may be especially the case for informal workers with low levels of literacy [72].

As in the study in 2019, explored the NHI significantly enhances accessibility to healthcare for low-income households (income of less 1 million LAK or 120 USD/month), improving health service distribution or accessibility for the various income levels in comparison to the CBHI coverage, the increase in accessibility was not statistically significant at a 95% confidence interval. This meant that, regardless of the hospitalization cost (under the NHI coverage), the existence of a chronic condition is still considered as the important factor that significantly increases the probability of encountering catastrophic health expenditure [71].

On the previous studies in 2013, 2015, 2017 and 2019 found that the voluntary health insurance scheme, community-based health insurance (CBHI) slowly improved

accessibility to quality health services provided by public health practitioners and offered some financial protection against catastrophic health expenditure. Therefore, the government decided to pilot the National Health Insurance (NHI) in many provinces, combining numbers of existing schemes as a steppingstone towards a universal health insurance system [48, 53, 71, 72]. Furthermore, the cooperation of CBHI and national health insurance was associated with health financial protection level.

4.7 Other Issues

Beside the common topics mentioned, some issues were examined. As in the study in 2019, about the WTP distribution, to ensure that the hypothetical alternatives will improve the CBHI status quo scheme, they need to exclude the observations in which the levels of the medical consultation and hospitalization attributes are below the status quo of the CBHI scheme [17]. The findings showed that the composition of the benefit package has a crucial impact on respondents' probability of enrolling in the CBHI scheme. In particular, the respondents value a hypothetical alternative policy over the status quo. The lower bound of the average WTP is estimated at 25,579 LAK per month, which is at least as much as 10.9% of the per capita income in the area (or 3.29% of the median household income).

In other study in 2017, about the hospitalization, the study sought to determine if the CBHI plan improved accessibility to health care service. As a result, the variable of interest is the insurance status of households. The finding showed that the p-value is not statistically significant at a 95% CI. This means that insurance status does not increase the probability of hospitalization. There is no difference in health service accessibility between insured and uninsured households [70].

CHAPTER 5: CONCLUSION, DISCUSSION AND RECOMMENDATIONS

5.1 Discussion

The finding from the systematic review indicate that, this paper has reviewed literatures investigating community-based health insurance (CBHI) scheme in Lao PDR. The existing evidence gathered from this systematic review; several findings are discussed below.

From one of the reviewed paper, the poor are less likely to enroll in CBHI, and among the poor who are enrolled, there has been no significant impact on the poor's use of outpatient services, OOPs or incidence of catastrophic expenditures [53]. Moreover, the goals of the CBHI scheme is to protect people against direct OOP payment and enhance their access to primary health care services by promoting enrolment, which is consistent with universal health coverage (UHC) [17]. Apart from these, findings regarding to the perception of quality of care is an important factor affecting enrolment in CBHI in that those who perceive quality to be poor are less likely to enroll [48].

Among these factors, several findings were highlighted. Arguably, the revenue base for taxation in Lao is too low to consider financing health services through taxation. However, given the current low levels of spending on health and the economic growth projected for the near future, there is considerable room to increase fiscal space for health [68]. As there are more papers with examined this issue, this financial analysis gives rise to a series of broader policy questions that themselves require a more thorough analysis. These issues include the impact of combining schemes on the quality of service delivery, the best use of limited administrative capacities, using price differentials carefully calculated to influence provider behaviors (in quantity and quality of care) and the benefits that may be anticipated in the longer term from overcoming fragmentation in demand-side health financing arrangements [65].

In other studies, a higher total cost for medicines and diagnostic tests was associated with uninsured patients, patients with higher education, patients making informal payments, patients treated in a provincial hospital and patients in the lowest income-level group [66]. On one side, the lower cost for insured patients can help reduce the number of households experiencing catastrophic health expenditure. In terms of cultural factor, health services supply and demand-side barriers [69]. Meanwhile, these health service supply and demand-side barriers can be mapped onto the domains of access, acceptability, affordability, appropriateness and availability and illustrate the interface between users and the characteristics of suppliers.

Currently in Lao PDR, face a political choice in defining the national health insurance proposals either as a non-tax revenue raising exercise or as a program that provides effective social health protection [72]. Especially, the proposal for NHI mainly as an opportunity for cost-sharing among households and revenue-raising outside the national budget. While expanding the revenue base for national health insurance is a legitimate aim of the reform, policy makers have not made clear whether additional revenues can be collected without adding to household co-payments and OOP expenditures [67].

Due to the information of the reviewed papers, however, in theory, both CBHI and NHI aim to improve accessibility to all population groups, but in practice most of the people enrolling in the CBHI scheme, or using NHI, were low- to middle-income households such that, within a short period of time, those would not really show an improvement in terms of their medical knowledge [70, 71].

5.2 Conclusion

The purpose of this study was to look info to the health insurance scheme with focus on the community-based health insurance scheme (CBHI) in Lao PDR. The study was carried out using a systematic review. Also, this study provides a comprehensive review of the evidence-based articles accesses to health insurance in Lao PDR. In summary, CBHI schemes cannot attract many people by their functional nature, but CBHI in Lao

PDR is still at the development stage. Therefore, those evidence-based articles, findings suggested and strategy. Together with the initiation of new health reforms and as a complement to redesign the benefit package such that it fulfills the expectations of the targeted enrolment, more empirical researches should be conducted on issues relating to the practical operation of CBHI to ensure greater coverage of the CBHI scheme in the future.

5.3 Limitation of the study

Several limitations should be addressed hereby:

- This systematic review only included a small number of articles with limited finding. Only 11 articles with empirical data were selected which some of issues like, the data may show some bias due to limited information and evidence.
- According to the methodological quality, some reviewed papers did not provide details of study design such as number of target population or sample size and sampling methods.
- By reason of the wide range of topics and limited evidence, effect synthesis was not done for statistical power of the findings.

5.4 Recommendation for further investigation

This study was made on a small number of articles like CBHI scheme. Further investigation should be undertaken in whole type of health insurance schemes or some specific areas such as Civil servant scheme (CSS), Social security office (SSO), Health equity fund (HEF), Free mother and child health insurance (MCH), Private health insurance (PHI) and so on.

APPENDIX

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September 14, 2020

Subject : Request for Permission on Data Usage

To : Head of the National Health Insurance Bureau
Ministry of Health, Ban Thatkhao, Sisattanack District,
Vientiane, Lao PDR

I, the undersigned Whiejong Han, Chair of Department of Global Health Security, Graduate School of Public Health, Yonsei University, hereby would like to request you to permit the student named below to use necessary data for thesis writing purpose.

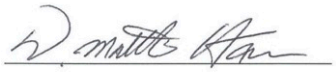
Name : XAYAVONG, HONGKHAM
Student ID No. : 2019552020
Period : 2019 - 2021
Program : Master of Public Health, Global Health Security Response Program
E-mail : linahongkhamxayyavong@gmail.com

The student would like to use data about National Health Insurance Statistics cover all 17 provinces (from 2017-2019). The data needed is the result of survey, based on the health care utilization for insured, financial protection, health outcomes and quality of care. The data will be used to develop a master's thesis with title " The Introducing of Community-Based Health Insurance (CBHI) in Lao PDR – A Systematic Review ".

For further process, the student will contact your institution.

Thank you for your attention and cooperation.

Sincerely,



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