Conference Paper

Facilitators and Barriers to Health Workforce Retention in Rural and Remote Setting of Indonesia: A Literature Review

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Abstract

Health workforce is a critical component of the nation's health system. Every country is expected to establish a health system which addresses health inequalities by ensuring health services are accessible to all people, particularly those who are vulnerable and living in disadvantage. Therefore, health workforce availability and accessibility determine the health service coverage, people's health outcome, and the nation's socioeconomic development. Moreover, Indonesia is a country which faces a critical shortage and low retention of the health workforce, particularly in the rural and remote settings. This literature review aimed to examine the facilitators and barriers to health workforce retention and to evaluate the current health workforce policies in Indonesia.
Methods: A narrative literature review was conducted to find out the factors which determine the willingness of health workers to stay and work in rural and remote settings. A comprehensive systematic literature search was employed using five electronic databases, namely: CINAHL, Medline Ovid, Scopus, Web of Science and ProQuest. The inclusion criteria were: 1) articles in English language; 2) articles published between 2007 and 2017; 3) addressed the facilitators and barriers to health workforce retention as the main concern of the literature being released; 4) studies conducted in Indonesia and other countries that have similar socio-economic condition with Indonesia; 5) the object of the studies was health workers and 6) the studies used primary data. Also, thematic analysis is used to identify, analyze, and report themes within data of the included studies.
Results: About 204 articles initially assessed, and 16 articles met the inclusion criteria. They consisted of the mixture of quantitative, qualitative and mix method studies. Seven major themes emerged within the included studies: incentives, career and professional development, working condition, living condition, personal characteristics, political factors and cultural. Thus, by understanding the underlying factors of health workforce retention, key policy-makers can evaluate the current policies and develop a range of useful and comprehensive strategies which address the roots of its problems.
Conclusion: According to the findings, there are six broad recommended strategies which address the facilitating factors and barriers for retaining health workforce in rural and remote areas: 1) provide adequate incentives; 2) provide CPD for rural

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and remote health workers; 3) recruit students from rural background; 4) improve working condition; 5) improve the living condition; and 6) strengthen the role of local government and intersectoral collaboration. Moreover, the government of Indonesia emphasize the incentives and Continuing Professional Development (CPD) strategies to attract and retain health workers to work in rural and remote areas. The deployment strategies employed by the Indonesian government are mostly temporary solutions. These strategies effective to overcome the urgent shortage, but do not address the underlying causes of low retention of health workers in rural and remote settings. The establishment of better living and working condition are necessary to achieve health workforce sustainability in rural and remote settings. Also, the intersectoral collaboration and the strengthening of local government roles, capacity and commitment will succeed the retention intervention.

Keywords: Health workforce retention, health policy, rural and remote settings, Indonesia

1. Introduction

Health is a fundamental human right in which everyone has an equal opportunity to enjoy the highest attainable standard of health [41]. Furthermore, every nation is expected to establish a health system which ensures health services are accessible to all people [7]. A nation's health system can only function with health workforces [7]. Health professionals can deliver health services. The effectiveness of health services coverage depends on their availability and distribution in the population [7, 40]. Thus it will determine the health outcome of community and the socioeconomic development of the nation [14, 40]. Indonesia recognized as a country with an acute health workforce crisis [39]. In the rural and remote settings of Indonesia face a more severe health workforce shortage [14].

Indonesian is the fourth populous country in the world, and it has a population of about 260 million in 2016 [37]. However, its population distribution is unequal, in which urban settings are denser than rural settings. Currently, almost half (46%) the Indonesian people live in rural and remote settings [37]. There are 58.6% of the population live in "inner Indonesia" (Java, Madura, and Bali Islands) which had about 7% of the total land area, whilst the rest live in "outer Indonesia" (the Islands of Sumatra, Kalimantan, Sulawesi, Nusa Tenggara, Papua, and West Papua) [6, 23]. For example, Bali Province had a population density of 710 per sq. Km or seven times higher than East Nusa Tenggara Provinces which the population density was 103 per sq. Km in 2014 [6].

The geographical situation of Indonesia creates challenges in delivering health services, particularly in rural and remote settings. Even though Indonesia has a large number of Primary Health Facilities (*Puskesmas*) with the total of 9,740 *Puskesmas*, Indonesia experienced health workforce shortage of 67,601 health professionals and low retention of health workforces in rural and remote settings [4]. Comparing the ratio of GPs in Bali with East Nusa Tenggara, there was a considerable difference between both

provinces. The ratio of General Practitioners (GPs) in Bali was 27/100,000 people, almost twice higher than in East Nusa Tenggara with the GPs ratio of 14/100,000 people [1, 31]. Although the ratio of GPs is higher in Bali, there is an unequal distribution of GPs between urban and rural settings. For instance, the GPs ratio in Denpasar City is three times higher than the Karang Asem District (43/100,000 people and 14/100,000 people, respectively) [1]. Therefore, the health outcomes in Karang Asem are worse than in Denpasar. The infant mortality rate in Karang Asem is seventeen times higher than in Denpasar (10.6/1000 live birth and 0.6/1000 live birth, respectively) [1].

The geographic difficulties in rural and remote settings are indeed less attract health workers to stay and work there. The low retention of the health workforce induces health workforce shortage in those settings and impedes people in accessing health care [40]. Therefore, people who live in rural and remote settings are more prone to health problems. Furthermore, it is important to understand the factors which determine the willingness of the health workforce to live and work in rural and remote settings, to discover the effective retention strategies. Thus, the government can create relevant policies which address the roots of its problem and implement effective intervention to improve health workforce retention.

The main aim of this literature review is to examine the facilitators and barriers to health workforce retention in rural and remote settings in Indonesia, by answering these three specific questions, as follow:

1. What are the boundaries for health workers to stay and work in rural and remote areas?
2. What factors which encourage health workers to stay and work in rural and remote areas?
3. Are the current policies related to health workforce retention are likely to be successful?

2. Methods

A literature review conducted to find out the factors influence health workforce retention in rural and urban settings, both the barriers and the facilitating factors as well as to evaluate the current policies that have been put in place to improve health workforce retention in rural and remote Indonesia. Moreover, the narrative literature review was chosen instead of systematic review methods because the author wanted to provide current facts and information as much literature as possible focusing on health workforce retention in rural and remote settings. To reduce bias, the author only used primary studies which provide a high level of evidence-based information.

Thus, this review will synthesize any information from the included studies to provide a conclusion about the facilitator and barrier of health workforce retention in rural and remote Indonesia. Furthermore, the synthesis of data was used to determine whether current national policies were effective enough to provide a long-term solution to improving health workforce retention.

2.1. Search strategy

A comprehensive systematic literature search was conducted using five electronic databases which cover literature in health and social sciences. They were: CINAHL, Medline Ovid, Scopus, Web of Science and Pro Quest. The following keywords employed in literature search:

1. 'Health workforce', or 'health workers', or 'health personnel', or 'health professionals', or 'health practitioners', or 'allied health professionals', or 'inter-professional', or 'physicians', or 'general practitioners', or 'GPs', or 'nurses', or 'midwifes', or 'pharmacists', or 'physiotherapists', or 'occupational therapists', or 'nutritionists', or 'dieticians', or 'speech therapists', or 'audiologists', or 'public health practitioners'.
2. 'Retention', or 'stay'.
3. 'Rural,' or 'remote,' or 'underserved areas,' or 'low-resource.'
4. 'Indonesia,' or 'developing countries', or 'southeast Asia.'

Keywords related to facilitators and barriers were not included in the literature search to identify broader themes regarding factors driving health workers to live and work in rural and remote areas, and their challenges as well.

The inclusion criteria were journals articles in the English language, peer-reviewed journal, and address the facilitators and barriers to health workforce retention as the main concern of the literature being published. Furthermore, the journal articles published between 2007 and 2017. The exclusion criteria were duplicate articles, titles, and abstracts which do not match with the topic.

The electronic search identified a total of 204 references. Papers were considered to merit scrutiny of the full-text articles after their title and abstract had been read and considered, and duplicate articles eliminated. This resulted in 60 articles which were identified as potentially relevant for review. Then, all articles were selected by reading the full-text and applied the specific inclusion criteria. The specific inclusion criteria were: 1) factors impact on health workforce retention was addressed as the primary concern of the studies being reported; 2) studies conducted in Indonesia and other countries that have similar socio-economic condition with Indonesia; 3) the object of the studies were health workers (not students majoring health science and voluntary community health workers). Initial research included literature reviews and review articles. However, to provide a stronger evidence base for analyzing the facilitators and barriers to health workforce retention, later only primary studies were used in this review. Moreover, only studies that met the criteria of quality, such as stated clear study aims and used appropriate methodologies, were included in this review. After excluding the studies which did not meet the inclusion criteria, 16 papers remained.

Of the included studies, there were six studies that used qualitative research methods, six used quantitative research methods, and four used mixed methods. There were only two studies from Indonesia, and the other studies were from Africa (Ghana, Burkina Faso, Tanzania, and South Africa), and Asia (Cambodia, Philippine, Pakistan, Bangladesh, Timor-Leste, and Lebanon) (table 1).

TABLE 1: The result of a three-stage search strategy

Databases	Stage 1	Stage 2	Stage 3
ProQuest	53	21	4
Scopus	58	16	4
Web of Science	62	11	5
Medline Ovid	21	11	2
CINAHL	10	1	1
Total	**204**	**60**	**16**

Also, to obtain supplementary literature for discussion, a snow-balling approach was conducted from references cited in the relevant journal articles. Google scholar also used to obtain grey literature, such as Ministry of Health reports and publications, national regulations related health workforce, World Health Organization publications, statistical yearbook of Indonesia 2015, and The World Bank data.

2.2. Data analysis

Thematic analysis was used to identify, analyze, and report themes within data of the included studies. It was expected to answer questions about what factors influencing health workers willing to live and work in rural and remote settings, and what the effective retention strategies were.

Of included studies, major themes or pattern within data identified in an inductive approach. The included papers were analyzed manually by reading and re-reading to become familiarised with the data. Coding process applied without trying to fit it into a pre-existing coding frame in included studies and related literature reviews. Then, similar codes were sorted together to form important themes reflecting the contents of the papers.

3. Results

There were seven major themes emerged regarding factors impact on workforce retention in rural and remote settings.

The number of articles that discussed a particular theme indicates how prevalent the subject within the literature (Table 3).

3.1. Incentives

All (100%) of the studies identified incentives as the factors impact on health workers decided to stay and work in rural and remote settings. The adequate salary and remuneration, together with the transparency of salary levels, fairness and be paid on time, showed that they had improved health workers satisfaction and motivation to work [12, 33, 35, 44]. On the contrary, low income were caused health workers demotivated since it was insufficient for them to maintain an average living standard, and had led to

TABLE 2: Themes Identified within the Included Studies.

Major themes	Details
Incentives	• Basic salary
	• Allowance
	• Non-financial incentive: housing, transportation, medical coverage.
Career and professional development	• Job security, mostly as civil servant
	• Job promotion
	• CPD, training and seminars opportunity
Working condition	• Infrastructure of health facilities
	• Medical supplies
	• Medical equipment
	• Workload
	• Job description and performance appraisal
	• Supervision
	• Management style
	• Job competency
	• Work safety
	• Relationship with colleagues
Living condition	• Living away from family
	• Rural facilities: housing, electricity, water, transportation, education for children
	• Security
	• Personal relationship with community
Personal characteristics	• Age
	• Gender
	• Marital status
	• Original background
	• Level of educational degree
	• Passion for work
	• Personal morale: dedication, obligation, humanitarian and religious impulse
Political factors	• HRH policy
	• Political interference
	• Bureaucratic and administrative system
	• Health system
	• Support from local government
Cultural	• Posting single women away from home
	• Married women separate with husband
	• Different culture and language

health workforce turnover [8, 10, 12, 13, 17, 33, 44]. Moreover, health workers argued that

Table 3: The Prevalent of Major Themes Identified within the Included Studies.

Author (s)	Year	Country (s)	Method	Incentives	Career and professional development	Working condition	Living condition	Personal characteristics	Political Factors	Cultural
(Pillay)	2009	South Africa	Quantitative	✓	✓	✓	✓	✓		
(Chhea, Warren & Manderson)	2010	Cambodia	Qualitative	✓		✓				
(Ditlopo et al.)	2011	South Africa	Mixed method	✓	✓		✓		✓	
(Leonardia et al.)	2012	Philippine	Mixed method	✓	✓	✓	✓	✓	✓	
(Zinnen et al.)	2012	Tanzania	Mixed method	✓	✓	✓	✓			
(El-Jardali et al.)	2013	Lebanon	Quantitative	✓	✓	✓		✓		✓
(Meliala, Hort & Trisnantoro)	2013	Indonesia	Mixed method	✓					✓	
(Prytherch et al.)	2013	Burkina Faso, Ghana, Tanzania	Qualitative	✓	✓	✓	✓	✓		✓
(Bonenberger et al.)	2014	Ghana	Quantitative	✓	✓	✓	✓	✓		
(Efendi et al.)	2014	Indonesia	Quantitative	✓	✓			✓		
(Yaya Bocoum et al.)	2014	Burkina Faso	Qualitative	✓		✓				
(Darkwa et al.)	2015	Bangladesh	Qualitative	✓	✓	✓	✓	✓		
(Dickson Ally et al.)	2015	Tanzania	Qualitative	✓	✓	✓	✓		✓	
(Hou et al.)	2016	Timor-Leste	Quantitative	✓	✓	✓				
(Shah et al.)	2016	Pakistan	Qualitative	✓	✓	✓	✓	✓	✓	✓
(Shiratori et al.)	2016	Ghana	Quantitative	✓	✓	✓	✓			
Total number of studies	16			16 (100%)	13 (81%)	13 (81%)	10 (63%)	8 (50%)	5 (31%)	3 (19%)

financial incentives for rural and remote areas should consider their qualification, workload, difficult working conditions, and lost opportunities for gaining additional income from private practice [10, 25, 34]. Despite the financial incentive, non-financial incentives were important to retain health workers in rural and remote settings, such as housing, medical insurance, and transportation [13, 16, 33, 35, 43]. Also, the facilities which were given by the government sometimes were in poor condition, for example, inadequate housing and furnishing [10, 12].

With the decentralized health system, the health workers incentive in Indonesia varies by districts. Only several local governments offer adequate incentives for health workers who work in public health sectors. For example, the regent of Empat Lawang District in South Sumatera Province offers an attractive incentive package for health workers

who work in the district public hospital. The number of financial incentives received by health workers varies from Rp. 750,000 for radiographer, Rp. 1,000,000 for pharmacist, Rp. 2,500,000 for nurse anesthetist, Rp. 2,500,000 to Rp. 3,500,000 for doctor and dentist, and Rp. 15,000,000 to Rp. 30,000,000 for the specialist doctor [18].

Moreover, the local government facilitates housing or housing rent for the specialist doctor [18]. However, there are many local governments which can not afford adequate incentive for health workers due to low fiscal capacity. In this case, the local governments can request for health workforce allocation to the Ministry of Empowerment of State Apparatus and Beaurocracy Reform with funding source from Special Non-Physical Allocation Fund [2].

On the other hand, for health professionals contracted by the central government, the government of Indonesia has regulated the amount of their salary and incentives based on the Ministry of Health Decree No.HK.02.02/MENKES/412/2015 (Table 4). This regulation aims to attract health professionals to work in remote and very remote settings. However, it is still limited to doctor, dentist, and midwife since the contract employee program only prioritizes these types of health professionals. In several districts, the difference amount of incentive given by the local government made local civil servant feel treated unfairly because their incentives are much smaller than central contract employees [19, 36]. Also, the local governments can give additional incentive for contract employee, but it is not compulsory.

Table 4: Monthly Income for Contract Employee.

Types of Health Professionals & place of deployment	Specialist doctor/ Specialist dentist			Doctor/ dentist			Midwife		
	Common**	Remote	Very Remote	Common	Remote	Very Remote	Common	Remote	Very Remote
Salary*	2,847,280	2,847,280	2,847,280	2,847,280	2,847,280	2,847,280	2,356,370	2,356,370	2,356,370
Incentives*	-	10,367,400	13,051,750	-	5,267,900	7,659,950	-	2,245,000	3,565,900
Total*	2,847,280	13,214,680	15,899,030	2,847,280	8,115,180	10,507,230	2,356,370	4,601,370	5,922,270

Source : Ministry of Health (2015a)

**In Indonesian Rupiah (IDR)*

***Common regions is non remote areas or ordinary' rural areas with limited access to goods, public services and opportunities for social interaction*

A study conducted by Board for Development and Empowerment Human Resource of Health (2016) showed that the non-salary income received by health workers who work in common areas is bigger than health workers who work in remote and very remote areas due to the amount of capitation. The capitation payment system is in which health providers, such as doctor, dentist, and midwife are paid a set of payment per number of registered patients, regardless of the type, and frequency of health services given and whether or not the patients come to seek health care [26]. Moreover, the income of health workers in universal, remote and very remote *Puskesmas* are generally lower than the general living expenses [4]. Thus, central and local governments need to

calculate and strive to give adequate incentive which suits the needs of decent living in the regions.

3.2. Career and professional development

Career and professional development is a theme that mostly discussed in of studies (81%). It indicates that career and professional development greatly affect health workforce retention in rural and remote settings. Health workers would consider staying in the long term in under-served areas if there were opportunities for job security as a civil servant or permanent employee, job promotion, and Continuing Professional Development (CPD) [16, 17, 32]. Self-assessment conducted by Ministry of Health (MoH) towards "Healthy County" programme (*Nusantara Sehat*), a program to relocate young health workers teams to rural and remote Indonesia, showed that 74.13% of participant intends to stay longer as long as they are promoted to be civil servant [4]. Some studies reported that health workers in rural areas had least chance to obtain CPD than those who work in urban [10, 22, 34]. For example, health workers in the *Puskesmas* of Sajingan Besar, a remote area in Sambas District, Indonesia, felt that there were limited opportunities of seminars and health training for them [36]. Regarding job promotion, it was difficult to be promoted if they did not have links and relationships with an influential person in government [34]. It indicates the lack of fairness, an unclear strategic plan for career development, and favoritism, particularly in rural areas [12, 44].

The Ministry of Health has held a continuing education program for civil servant health workers and contract doctors or dentists. There are two kinds of continuing education program. First is further education grants for civil servant health workers who work in central and districts health offices, and health facilities [30]. Further education means a degree program, such as an advanced diploma, bachelor degree, master degree, and doctoral degree. Moreover, there are about 74,601 civil servant health workers who work in public hospitals, *Puskesmas*, and other public health facilities consist of midwife, nurse, sanitarian, laboratory analyst, dental nurse, pharmacist technician, etc., which still educated under diploma degree [2]. The aims of this program are to improve the quality of the health workforce and adjust for minimum professional education qualification standard based on national regulation [30].

Moreover, the government offers easiness by giving age extension as a criterion of scholarship eligibility, particularly for those who work in remote areas. It is expected that this program will increase the health workers motivation to work in rural and remote areas. Also, the level of experience and education will determine people's career development. The increasing education level will increase the chance of getting a job promotion.

The second program is a specialist degree scholarship in medicine for doctor and dentist [27]. This program aims to improve national health coverage, particularly in remote, very remote, underdeveloped, borderland, disaster-prone and conflict areas [27]. Both civil servant and contract doctor or dentist can apply for this scholarship. The proposing institution or local government must appoint the contract employee to be a civil servant after a maximum of two years of study. After finishing their education,

the specialist doctors and dentists must return to the proposed institution and work for the period determined by the central government rules. This program improves the retention of a specialist doctor or dentist in remote areas of Indonesia. However, there has no clear punishment for grantees who did not return to their purposed institution [28].

3.3. Working condition

The working condition identified in 81% of the studies. It showed that working condition plays a vital role in retaining health workers. Some studies stated that health workers who work in supportive work environment and management which is indicated by management appreciation and respect, encouraging supervision, good teamwork, and strong interpersonal relationship between colleagues, were increase their intention to stay [17, 32–34]. On the other hand, some problematic conditions which are commonly faced by rural health workers, such as poor infrastructure, heavy workload, unclear job description and performance appraisal, inadequate medical equipment, limited medical and drugs supplies, and inadequate safety caused staff intention to leave [8, 10, 12, 22, 24, 32, 33, 35, 43, 44].

Puskesmas of Sajingan Besar located in a remote area of Sambas District experienced health workers shortage. Working in this setting was very challenging because the health workers only had limited amenities in delivering health services [36]. There was no car for the mobile clinic because the previous car broke. Some villages in Sajingan Besar Sub District is only accessible by four-wheel drive. Moreover, the infrastructure of one out of three auxiliary *Puskesmas* was damage, and there was inadequate medical equipment in the *Puskesmas*. Hence, it affected health services. For example, a tuberculosis (TB) examination cannot be done in *Puskesmas* of Sajingan Besar, and the sputum examination must be sent to *Puskesmas* of Sambas District due to the inadequate equipment. The essential drugs are often out of stock due to the uncertain logistic delivery schedule. In term of workload, the health workers experience a heavier workload. They must ready 24 hours for providing health services, particularly for emergency and labor cases. The problematic road condition and inadequate facilities, such as vehicle and medical equipment, exacerbates their task.

3.4. Living condition

The living condition was a key theme found in 63% of studies. Living away from family and lack of good schools for children was reported as the main reason, particularly for women health workers, for not to stay in rural settings [5, 33, 34]. Moreover, difficult living condition in rural and remote settings, such as poor housing, water, electricity, transportation, and security were less attract health workers to work and stay in the long term [12, 24, 34, 44]. The situation would be worse if the community did not show acceptance and respect to health workers cite33. In some cases, worse relation between health workers and community caused by the lack of communication, the inability of young workers to respect to older clients and the inability to treat patients cite33. This is

important for health workers and their family to be accepted, respected and supported by the community, so they will always feel comfortable and secure [24, 32].

The remoteness of Sajingan Besar Sub-District, which the land is hilly, and there were only 4 kilometers out of 91 kilometers road that has been paved, was making health workers unwilling to work in *Puskesmas* of Sajingan Besar. The numbers of staff housing were not enough. As a consequence, there were three paramedics that occupy the inpatient rooms of the *Puskesmas*. Moreover, the one-year working duration of contracted doctors was too short to acquainted and become familiar with villagers. A study showed that if people were familiar with the health workers, they tended to access the health service more intense [11].

3.5. Personal characteristics

Personal characteristics were recognized in 50% of studies. A study by El-Jardali et al. (2013) and Shah et al. (2016) indicated that gender and marital status had a more significant impact on nurses and doctors retention in Lebanon and Pakistan. However, both were not significantly associated with nurses decision to stay in rural Indonesia [16]. Married women doctors have more intention to leave due to lack of facilities in rural settings in Pakistan, such as adequate education for their children and housing facilities [34]. Moreover, health workers with the background of the rural area were regarded as having strong dedication and viewed work in their place of origin as an obligation [10]. Married nurses with children intend to stay in rural areas of Lebanon since they were initially from those places and their workplace are close to their home [17].

Age also played a role in health workforce retention in rural settings. Young nurses in rural South Africa intended to leave their job because they want to develop their career [32]. In contrast, young nurses in Indonesia showed the intention to stay and work in rural settings to seek more experiences [16]. Besides that, personality factors, such as humanitarian, religious impulse, passion to work, and willingness to help people, encouraged them to stay in rural and remote settings [10, 24].

Other study showed that personal characteristics play an essential role in influencing doctor retention in remote areas of outer Island of Indonesia [9]. Doctors which originally come from “outer Indonesia” had more willingness to work in remote areas than doctors from Java and Bali Island. Moreover, the Ministry of Health should notice this issue by prioritizing the ”outer Indonesia” doctors in the admission of the specialist degree scholarship program. Also, married women with children and currently married men were less desire to serve in remote areas.

3.6. Political factors

The political theme found in 31% of studies. A study conducted in Pakistan showed that political interference has resulted in the unfair appointment and staff transfers in Basic Health Units (BHUs) [34]. This condition caused absenteeism by doctors transfers. One doctor reported that ’... *Every patient is equal to us, and we cannot give preference to*

a relative of a member of any political party. They try to influence us in several ways, or they often threaten us to get us transferred to a remote BHU'.

Moreover, bureaucratic, non-transparent and unclear administration system, particularly on financial claims, promotion, and career development opportunities, have made rural health workers in Tanzania feeling forgotten and lost [12]. Local government support plays a key role in retaining the health workforce as well [24]. Based on study conduct by Ditlopo et al. (2011), the combination of financial and non-financial incentives was more effective.

After the decentralization era in Indonesia, the local government has the authority to determine HRH policy in their territory, such as the amount of health workforce allowance and non-financial benefits. Provinces or districts which offered interesting and beneficial incentives would attract and retain more health workers. However, the low capacity and lack commitment of local governments compounded by the failure of leadership, political and bureaucratic in local health sectors influenced the health sector performance, including the health workforce issue [20]. Not all local government recognized the importance of health workforce sustainability. Furthermore, current policy in Indonesia limiting specialist doctors practice location to three, together with incentives regulation for rural doctors, have not been effective in addressing the unequal distribution of specialist doctors, particularly in rural areas [25]. The increasing numbers of the private sector offered large income, so they preferred to work in private practice which generally located in urban areas.

3.7. Cultural

There were only three studies (19%) which acknowledged cultural influence on health workforce retention. Placing single women away from their family and married woman living separately with their husband were examples of cultural issues [17, 33, 34]. In eastern culture, married women have an obligation to caring for their families and children, so they would prefer to work near their home. Moreover, cultural and language differences became the barrier for health workers to stay in rural and remote settings, because it can lead to poor communication and relation with the community [33]. Indonesia consists of hundreds of local languages and culture influencing health workforce retention. In some regions, the population prefers to seek medication from traditional healers than from health professionals. It becomes a challenge for the health professionals to ingratiate the community without generating conflict with the traditional healers. For instance, a laboring process in Sasak Village of Sajingan Besar District helped by both midwife and traditional birth attendant [36]. The midwife duties are to provide care during labor and delivery, while the conventional birth attendant cleans up and bathe the baby. Moreover, if the traditional healers were sick, they can get free medication from the village midwives.

4. Discussion

The articles in this literature review explore the multiple factors that influence the health workforce retention in rural and remote settings. Therefore, the themes identified in this review can help the key policymakers to recognize the roots of the health workforce retention problem, and use them to evaluate the current policies and develop a range of comprehensive strategies. There are six broad recommended strategies which address the facilitating factors and barriers for retaining health workforce in rural and remote areas, namely: 1) provide adequate incentives, 2) provide CPD for rural and remote health workers, 3) recruit students from a rural background. 4) improve the working condition, 5) improve the living situation, and 6) strengthening the role of local government and intersectoral collaboration. Based on findings, it seems that the government of Indonesia has addressed several factors which impact on health workforce retention, such as financial incentives and CPD for health workers, particularly doctor and dentist. Nevertheless, Indonesia still faces the ongoing health workers shortage and maldistribution of the workers. Thus, a flexible and multifacet response urgently required in improving the health workforce retention in rural and remote Indonesia based on its determinant factors.

Deployment strategies employed by the Indonesian government are mostly temporary solutions (Table 5). The health workers serve in rural and remote areas due to contract, special assignment, or mandatory service. After a certain period (mostly 1 to 3 years) they will migrate to urban settings or their hometown. These strategies are possibly effective to overcome the critical shortages but do not address the underlying cause of low retention of health workers in rural and remote settings [38].

Table 5: Health Workers Deployment Strategies in rural and remote Indonesia.

Categories	HRH Policies
Long-term solution	Health workers recruitment as civil servant
Temporary solution	1. Contract employee for doctors, nurses, and midwive
	2. Healthy Country Program as a team-based health care (*Nusantara Sehat*)
	3. Special Assignment Program for nurses, nutritionist, and public health practitioners
	4. Compulsory rural and remote service for specialist doctors and dentists
	5. Internship program for doctors

Improve the retention; the government offers a generous reward in the form of incentives and CPD. However, financial incentives alone are not useful to retain health workers in the long term [19, 38]. As well as CPD, it is only useful if there is an agreement of compulsory service after training or graduate from further education. For example, a survey conducted in 18 *Puskesmas* in East Nusa Tenggara Province showed that only two out of five health personnel trained in basic emergency obstetric care were still working in the same *Puskesmas* after two years training [11].

From the findings, it is evidence that living condition is important for retaining health workers in rural and remote areas. However, the Indonesian government has not employed this strategy yet as an effective intervention. The strategy of improving rural and remote infrastructure is not only beneficial for the health sector, but also people living there. It will enhance the accessibility of finding a job, public services, which at the end will improve the people's health and well-being. Although it counts as a practical solution which addresses the underlying cause of health workers retention, there is less of evidence in the literature about the developing countries used the strategies which address the living condition of rural and remote areas.

Similarly, with the living condition, the working condition is also a primary root of the low retention of health workers. Furthermore, the Indonesian government has succeeded establish more than 9,700 Primary Health Facilities or *Puskesmas* in every subdistrict, of which 2,388 *Puskesmas* located in remote areas [3]. However, the condition of *Puskesmas* in remote areas are generally poor. In providing appropriate medical equipment, the central and local government have undertaken medical equipment procurement, but this effort sometimes only a mask for doing corruption practice. The government sometimes do not provide the maintenance cost, so that the equipment become broken due to a neglectful lack of proper maintenance.

Moreover, based on WHO recommendation, human resources management strategies are essential to create better working condition and do service in rural and remote settings attractive [42]. Kenya and Guinea case study found that decentralizing task management strategies was effective to improve staff skills and performance, decrease absenteeism in clinics, and improve the staff ability of problem-solving without outside help [42]. This strategy utilized simple tools and was based on the principle of participation and teamwork, transferring the power of decision-making to the local, on-site team, focusing on clients, cost-effective and efficiency [42]. This strategy was suitable to be employed in decentralizing and developing countries like Indonesia where the local leaders are demanded to improve the local innovation, adaptation, and responsiveness to local needs.

Intersectoral collaboration also became the key to intervention success. In addressing the underlying factors of health workforce retention, the health sector required to collaborate with other stakeholders. The collaboration can conducted with the Ministry of Education (acceleration program for improving the qualification of health education), Ministry of Empowerment of State Apparatus and Beaurocracy Reform (recruitment of health workers civil servant), Ministry of Finance (health financing and health expenditure), Ministry of Home Affairs (regulation related to local governance authority). Moreover, the intersectoral collaboration is vital to addressing the retention factors that referred to the context, such as poor rural infrastructure like roads, electricity, and transportation in remote areas where those are not under the control of the health sectors. Responding the effectiveness of recruiting students from a rural background, the Ministry of Health can collaborate with the Indonesia Education Scholarship Institution (LPDP) to recruit students from the rural and remote environment to studying healthcare, such as medicine, nursing, and midwifery. After graduation, they must return to do compulsory service in rural or remote areas. So far, the Ministry of Health still focuses on the combination

of a scholarship program for specialist doctors or dentist and compulsory service after graduation.

In the context of decentralization, the authority in HRH management between central and local governments must be clear [2]. There are two broad regulations which indicate the central and local government's duty and obligation on health, namely: Law no. 36 of 2014 on health and Law no. 23 of 2014 on local government. However, there is no specific regulation arranging each authority. The distribution of central and local government's affairs must consider the accountability to the center and the maintenance of national standards and targets while enabling government innovation in local level [21].

5. Conclusion

The low retention of the health workforce in rural and remote settings is a complex challenge for many countries, including Indonesia. It influences health services coverage and population health. Adequate information needed regarding the facilitator and barrier for health workforce retention in rural and remote settings to understand the underlying causes of this problem. Based on the systematic literature search, seven themes were emerging as factors influencing health workforce retention in rural and remote settings: incentives, career and professional development, working condition, living condition, personal characteristics, political considerations and cultural. Thus, those factors will direct the key policy-makers to develop effective strategies which address the underlying factors and appropriate with the country's resources and health system.

Currently, the government of Indonesia emphasizes the combination of incentives and CPD as strategies attracting and retaining health workers to work in remote Indonesia. Moreover, contract employee, special assignment and mandatory service become the major programs to deploy and retain health workers in rural and remote areas. However, these strategies do not address the roots of low retention problem and are only effective to overcome the urgent shortage [38]. The intervention of enabling better living and working condition is highly recommended to achieve the sustainability of the health workforce in rural and remote areas [40, 42]. Of course, those are a high investment and need a long time to be realized. Therefore, the intersectoral collaboration and the strengthening of local government roles, capacity and commitment will increase the success of the retention strategies.

Conflict of Interest

The author declares that she has no conflict of interest.

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