Electronic Journal of General Medicine
2023, 20(3), em478
e-ISSN: 2516-3507
https://www.ejgm.co.uk/

MODESTUM

Original Article

OPEN ACCESS

Exploring the role of knowledge brokering in developing specialized hospitals: A descriptive qualitative study

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Citation: Yamanie N, Felistia Y, Bustami M, Nulkhasanah A, Sjaaf AC, Miftahussurur M. Exploring the role of knowledge brokering in developing specialized hospitals: A descriptive qualitative study. Electron J Gen Med. 2023;20(3):em478. https://doi.org/10.29333/ejgm/13030

ARTICLE INFO

Received: 13 Feb. 2023

Accepted: 28 Feb. 2023

ABSTRACT

Background: Employing a knowledge broker (KB) is one way to transform ideas into action, especially in relation to the development of a specialized hospital. This study aimed to explore the concept of knowledge brokering intervention in the development of a specialize hospital in Indonesia.

Methods: A descriptive qualitative method was applied in this study to collect detailed, rich data from a small number of participants. A snowball sampling approach was chosen to recruit 17 participants from various backgrounds who have worked with KB of a specialized hospital. The data analysis was performed using a content analysis method to identify the themes and categories.

Results: Five themes and 14 categories were constructed for developing the knowledge brokering intervention in the development of a specialized hospital in Indonesia. The themes included characteristics of KB, the role of KB, demand brokering, various perceptions of specialized hospitals, and challenges in developing the specialized hospital.

Conclusion: The findings suggest that the framework of the knowledge brokering intervention consisted of individual and interpersonal capabilities. Characteristics of KBs should be introduced that are trained in all development settings to boost the achievement of the goals in the health sector. The researchers suggest that the concept of KB should be considered for realizing national projects, as this will escalate the health development of the country. This study contributes to the identification and connection of indicators on health knowledge brokering in translating science into practice at specialized hospital in Indonesia.

Keywords: knowledge broker, knowledge translation, specialized hospital

INTRODUCTION

Cerebrovascular disease (CVD) has contributed to the death of 6.6 million people worldwide; within this figure, ischemic stroke accounted for 3.3 million deaths, intracerebral hemorrhage accounted for 2.9 million, and subarachnoid hemorrhage accounted for 0.4 million [1, 2]. The highest rates of CVD are witnessed in several countries in Eastern Europe, Central and Southeast Asia, and Oceania [1]. The Indonesia Basic Health Research has already documented a significant increase in CVD and hypertension cases from 7% in 2013 to 10.9% in 2018, and from 25.8% in 2013 to 34.1% in 2018, respectively [3]. Among these cases, compliance with CVD treatment and patient attendance at the healthcare facilities among Indonesians are lacking [3]. Furthermore, 39.4% of people are actively managing their CVD, 38.7% are rarely managing their CVD, and 21.9% are never visiting healthcare facilities to manage their CVD [4].

Despite the huge number of CVD cases in Indonesia, the availability of specialized hospitals for these cases is insufficient, as only 37 hospitals are qualified to accommodate patients with CVD from all the regions of Indonesia [5], including hospitals specialized in the brain and nervous system. This has happened since the government needs huge resources to establish the required hospitals across Indonesia. The National Brain Center Hospital has been internationally accredited as a specialized hospital center to specifically treat diseases related to the brain and nervous system, such as stroke [6]. The hospital was built in 2014 as a result of the increase in the number of patients with diseases that affect the brain and nervous system, which requires more integrated treatment [7]. This has also led to the development of more specialized hospitals in several regions in Indonesia since Indonesia needs approximately 435 specialized hospitals for treating stroke patients [5]. To expedite the transformation of the specialized hospital, the existence of actors who can be knowledge brokers (KBs) is vital.

"KB" is a term used to describe an expert or a group of professionals whose roles are to link the researchers, practitioners, and decision makers in knowledge translation into practice and foster the collaboration between these actors to work together in solving problems and changing the policy [8-10]. The scope of a KB's function is often described as knowledge translation, knowledge management, acquiring and adapting research-based evidence, networking connection, and offering appropriate information tailored to the problem's setting and needs [11-14]. The concept of knowledge brokering in health has been implemented in several countries, especially in eastern Mediterranean countries, the United Kingdom, and Canada [15, 16], and gained momentum for more than a decade in terms of evidence-informed practice and knowledge translation [17, 18]. Studies related to KBs in the health sector are mostly conducted in Western countries [17, 19, 20] and most of studies found the evidence-based practice for implementing health care service [10, 19, 21]. These studies have identified KB's attributes, capacities, skills, and characteristics based on developed countries' settings [19, 20]. To the best of our knowledge, there is a lack of research related to KB in Indonesia. Moreover, the initiative of implementing and assessing KB in Indonesia has not yet been explored based on experience in the field. This study aimed to explore the concept of knowledge brokering intervention in the development of a specialize hospital in Indonesia.

METHODS

A descriptive phenomenological study qualitative method was used in this study to gain an understanding of the health knowledge brokering intervention in translating knowledge and social framework to the development of the specialized hospital. A descriptive phenomenological study qualitative method is a typical method with reasonable and well-considered sampling and data collection, analysis and a representational approach that will provide objective answers to relevant questions of practitioners and policymakers [21, 22]. The aim was to collect detailed, rich data from a small number of participants. We used consolidated criteria for reporting qualitative research (COREQ) instruments for reporting our study [23].

Data Source

The primary data analyzed were collected from in-depth semi-structured interviews with various health actors who participated in KB activities during the development of a specialized hospital (n=17). Saturation was achieved after the sixteen interviews, but one additional interview was conducted to ensure. Therefore, the total of the participant of this study were 17 participants. The participants included neurologists, public health lecturers, Ministry of Health representatives, Ministry of Finance representatives, a former Ministry of Education representative, Ministry of State Apparatus Empowerment, and Bureaucratic Reform of the Republic of Indonesia representatives, particular authorities at the National Brain Center Hospital, and Association of Hospital Organization. We use purposive sampling for sampling design. We chose the participants criteria were based on their experiences, expertise, and involvement as witnesses in the development of specialized brain hospitals in Indonesia. Researchers had no prior relationship with the respondents. Researchers contacted all the potential participants informing the purpose of the research and asking for their willing to share with the researchers. As there were many actors in health areas from different backgrounds, researchers were only following up with the participants who responded to the invitation. To avoid the biases, one of the junior researchers who has fewer experience engaging with the stakeholders, conducted the invitation and interview. The background of junior researcher is medical personnel with additional training on qualitative research.

The interview guides were adopted from the conceptual frameworks of KB used previously [8, 17, 24] and covered several elements, including the notion of the specialized hospital, the concept of KB in developing the specialized hospital, the need and demand for KBs, the involvement of each actor in the intervention, and the barriers in implementing knowledge brokering. The open-ended questions on all these aspects were answered based on the participants' perspective and experience. YF and ACS conducted interview using virtual meetings on Zoom and no one else was present besides the participants and researchers. Zoom was also used to record the interview. The average duration ranging from 30 to 45 minutes for each participant. Interviews were only conducted once each participant. YF is a neurologist and master in cancer studies, while ACS is a professor in public health. Both have experience in conducting qualitative study interviews. The tools of the interview questionnaire as mentioned in **Appendix A**.

Data Analysis

The interviews data were transcribed and then we analyzed them using NVivo 12 software. Content analysis [25] was applied to these qualitative data to develop codes representing the five themes (**Figure 1**). Convincing stakeholder also related to the important process of boundary organization. How the organization and the unit within the organization communicate and connected each other in order to foster common vision and mission [26]. NY and MB were playing a role as coders for this study and all codes then analyzed by two independent coders (ACS and MB), which then discussed by all researchers to obtain an agreement. The same meaning codes containing similarities to the issues then categorized into different categories. Every section was given one or more categories that represented the dimension's explanatory structure (**Table 1**). The steps were as follows: reading verbatim transcripts several times to obtain a comprehensive understanding; sorting transcripts to collect words, sentences, and paragraphs that correlated with the specific elements and were described as the meaning units; translating the extracted verbatim quotes from Bahasa Indonesian into English; abstracting and assigning the labels for each meaning unit code; developing categories by identifying codes and comparing the differences and similarities before grouping the categories; and creating themes by linking the underlying meanings categories [21]. The standards [27] namely, confirmability was applied to ensure the rigor and trustworthiness of this work. Confirmability was demonstrated through member checking by inviting the participants to verify consistency of the initial findings and provide feedback.

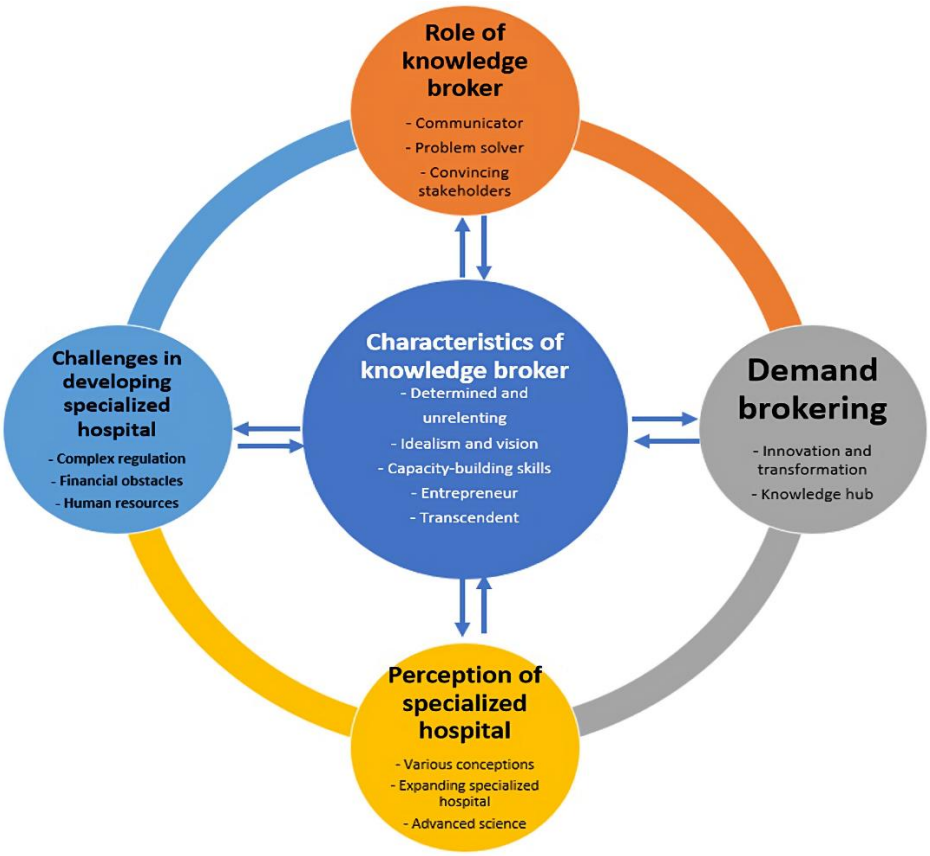

Figure 1. Frameworks of knowledge broker in context of developing a specialized hospital (Source: Authors' own elaboration)

Table 1. Themes and categories of knowledge broker

Theme	Categories
Characteristics of knowledge broker	Determined and unrelenting
	Idealism and vision
	Capacity-building skills
	Entrepreneur
	Transcendent
Role of knowledge broker	Communicator
	Problem solver
	Convincing stakeholders
Demand brokering	Innovation and transformation
	Knowledge hub
Perception of specialized hospital	Various conceptions of specialized hospital
	Expanding specialized hospital
	Advanced science
Challenges in developing specialized hospital	Complex regulation
	Financial obstacle
	Human resources

RESULTS

17 participants revealed that the term KB is not widely recognized in society. However, they fully understood that they have known and engaged with a KB in a practical aspect. The findings revealed the five main themes: characteristics of KB, role of KB, demand brokering, perception of specialized hospitals, and challenges in developing a specialized hospital (**Table 1**). Each theme was constructed with several categories that illustrate the detail of codes.

Figure 1 depicts the themes and categories of this study as a framework for KBs in developing specialized hospitals in Indonesia.

Theme 1: Characteristics of Knowledge Broker

The first theme consists of three categories that represent the details of the participants' perceptions of the characteristics of a KB. These categories are supported by specific notions regarding the participants' description of a KB.

Determined and Unrelenting

Most of the participants perceived that KB is the person who had the determination to achieve the goal of establishing a specialized hospital even though there were many challenges to overcome. KB would never give up on their determination and was always trying to figure out the situation. The statement is depicted below:

> "… they want to fight for developing the specialized hospital. When they faced some dead ends, they would find other routes. So, once they believed in their determination, they will be so. They are creative, even though there is no label for them, no specific position" (P1).

> "… it seems that they are people who never give up. Sometimes, I wonder how it could be that there are bold people, not embarrassed about their determination. I realize that it is because their dreams are not for themselves. That is why they never give up, having a lot of energy …" (P2).

> "… their motivation is about how to run a project for the sake of the public. Also, they represent a trusted figure for the community" (P7).

> "I feel that the main thing is they never stop, they are unrelenting, never giving up. So they struggle with the situation and patient during an unpleasant situation" (P17).

Idealism and Vision

Participants viewed a KB as an individual who has idealism in terms of developing a specialized hospital. This person has never looked for a label, position, honor, or praise from others. KB's intention is just realizing the improvement of situations:

> "They have a vision and mission, which is not for their benefit, but they came with the idea (developing a specialized hospital) to make healthy ecosystems for all parties. This might be due to their idealism" (P4).

> "So, it is a determination of idealism for improvement, the idealism for developing education, research, reinforcing services …" (P5).

> "... yeah. Let's say that we did everything just for developing the specialized hospital. Maybe we can say that it is idealism" (P11).

> "It is true, they are a team with a vision. They are able to forecast what will happen in the future. They have stepped forward while others have not" (P16).

Capacity-Building Skills

Participants reported that KB has some typical skills and capacities, including networking skills, communication or persuasion skills, good track record, talent, broadened insight, and knowledge in their field:

> "KB has hard competence and soft competence. Hard competence includes knowledge and skills, while soft competence can be defined as creativity, leadership, and others. Also, they are brave to decide and can make changes" (P6).

> "… people can have talent, but a KB has a talent for formulating. They know how to communicate with different people without showing that he/she knows everything. They can influence others to engage and think, then they are able to change others' perspectives" (P10).

> "Track record is a reinforcement element. There is a person who is quite new to this work, but the person has integrity, which counts as a value. KB is a compilation of three components: knowledge, skills, and good attitude" (P13).

> "They have to have a habit of reading, never-ending study, to want to know everything" (P15).

Entrepreneur

According to one participant, a KB is a typical entrepreneur that is projected as being able to see the opportunity, being bold and adaptable to the risks:

> "… I have seen the mentioned elements in him. So, I can say that there is an entrepreneur character showing as clear communication, providing facilities" (P15).

> "…Entrepreneurship is the key character shaping the individual who has passion in helping others in the big ambitious project …" (P17).

Transcendence

Participants explained that being transcendent is one of a KB's values, as they can be persistent to attain their goal of developing a specialized hospital. Though they will not obtain any benefit from their effort, they are still committed to running the specialized hospital project:

> "These people had sincerity in what they did, and there is an idealism for pursuing this (specialized hospital)" (P1).

> "…the second is the sincerity. Because they will never get benefits for themselves" (P5).

> "… he has a determination because of God; thus, he can be very sincere, as we saw. He believes this (developing specialized hospital) is a demand, not just a desire or opinion" (P6).

> "There is a value inside of him that drives the notion that responsibility should be done perfectly, full of sincerity" (P15).

> "That is right. It tends to be community service, even though it sounds a little bit weird to use the term 'community service'" (P16).

> "They show professional patience and sincerity in all contexts, namely, teamworking and the activities realizing goals" (P17).

Theme 2: Role of Knowledge Broker

The second theme reflects the performance of KBs while implementing knowledge translation for developing a specialized hospital. In this theme, the participants mostly highlighted the essential skills acquired by KB. Participants' examples of this are provided below.

Communicator

According to participants, the primary role of a KB is to be a communicator capable of translating complex knowledge, ideas, and plans, as well as conveying them to others,

particularly those who do not understand or support the development of KB for specialized hospitals. Through this role, people can understand how essential specialized hospitals are for improving the quality of health development:

> "… there must be the person who can communicate since we have to encourage others to understand our determination, to make sure that this (specialized hospital) is important for this country. So it is the ability to convince policymakers, stakeholders, and the public. This person can frame people's opinion that a specialized hospital is needed" (P2).

> "They should have knowledge of encouraging people, such as that from professionals, those who have money for funding, from bureaucracy, and others. Then, they can make all these people agree with the idea. In other words, they can negotiate" (P14).

Problem Solver

Participants agreed that a KB has the ability to solve problems that they face when struggling with developing a specialized hospital. They found a way to get out of any predicament and can identify the problems that might arise in the future:

> "… understanding how to realize it, capable of how to formulate the concept, and knowing how to connect with how these skills are used to develop the specialized hospital" (P1).

> "… He was born in a conducive environment. Then, he grew up with the connection of diverse people, especially with the people from the Ministry of Finance. I think this is the best way that results in obtaining funding" (P9).

> "…Then, they seek the solution to those issues and try to forecast the potential to find the way" (P15).

Convincing Stakeholders

Convincing stakeholders is the third category that might be an important role in being a KB. Since the authority of regulations is held by stakeholders, KB should attempt to persuade them to support the idea of developing a specialized hospital:

> "… first of all, we have to convince stakeholders, namely, the Ministry of Health, about what a specialized hospital can cover. We convinced the government that the limitation of resources will not hinder our efforts to develop a specialized hospital" (P1).

> "… inform them (stakeholders) that the need for a specialized hospital is urgent and should be one of the priorities of the country. Especially for the Ministry of Health, the cost should be covered" (P7).

Theme 3: Demand Brokering

According to the participants, demand brokering is associated with the expansion of specialized hospitals in the whole of Indonesia. Since the process of developing a specialized hospital is a rather complicated process, there must be an increase in the number and distribution of KBs. As the solution, KB training is considered a strategy to create other KBs. This theme consisted of two categories: innovation and transformation, and knowledge hub.

Innovation and Transformation

The agenda of innovation and transformation of the specialized hospital in several regions in Indonesia needs to be executed by KB. Participants believe that the next innovation and transformation will be much more challenging, and this triggers the need for more KBs to work together:

> "The second transformation will be more broad coverage. Because it will engage with multiple parties and will be more complicated. So, to reach a specific concept, the existence of a KB is needed" (P1).

> "… and KB is not just for the National Brain Center Hospital in Jakarta, as the regional areas need KBs to satisfy the demand" (P4).

Knowledge Hub

Despite the participants' belief that being a KB is requires a skill, new KBs can be developed by running a training session or educating the young generation to have KB characteristics:

> "I perceive that there is an interaction between nature and nurture for a KB. We cannot separate these concepts since they are complimentary" (P3).

> "I think both of them. Half of it is talent and the remainder needs an education, direction, and a lot of experience. Because they will face many challenges, they will need more knowledge, more energy for combining different objectives, diverse knowledge, diverse human resources, as it should be matching with the goals" (P12).

> "… so it is a combination of talent and training. When someone has talent from the beginning, it will be easy to be trained. Then, there are two skills: technical skills, which are the steps including several theories, and soft skills, which is talent" (P16).

Theme 4: Perception of Specialized Hospital

A participant observed that the idea of developing a specialized hospital initially received various responses from many people regarding the advantages or disadvantages. The responses included the perception of the need for the specialized hospital in Indonesia, the reason these hospitals should be built in Indonesia, and what aspects are related to the specialized hospital. We constructed three categories for this theme: various conceptions of specialized hospitals; expanding specialized hospitals; and advanced science.

Various Conceptions of Specialized Hospitals

Regarding participants' assumptions, many people have a diverse concept to exemplify the existence of a specialized hospital. The concept of the specialized hospital can be a positive and negative notion depending on how people know and are aware of the demand for the development of the hospital. Some of them think that specialized hospital is exclusive hospital and do not provide as similar facilities as public hospital:

> "It was various reasons. From the public perspective, the public had not thought that the specialized hospital was urgent. But after the increase in the mortality rate, the public feels that it is needed, such as cancer hospitals. Moreover, from the government side or Ministry of Health, they had not really had an effort for the specialized hospital, this is my opinion, right" (P8).

> "First, from the policymaker perspective, maybe they think that a specialized hospital does not treat patients as well as a general hospital. Thus, it is inequal with the investment, in other words, the investment will be high, but the utilization is still low" (P16).

Expanding Specialized Hospitals

Participants stated that expanding specialized hospitals is needed by considering the wide area of Indonesia and the high rate of cerebrovascular accident (CVA) or stroke. The high prevalence of stroke are reasons to cover all regions with a specialized hospital, especially in every territorial city, as CVA or stroke is a deadly disease:

> "… The specialized hospital should be available in the capital city, then in the main provinces, and districts where many people commute both from abroad and locally. Also, it should be in the tourist attractions" (P7).

> "It is in line with the future development that all services in health will focus on the specialization. That is why specialization should be developed. The more specialization, whether in the health sector or others, is available, the more people can have the benefit and be happy with the services" (P8).

> "I reckon that it is time we should have a specialized hospital for several specific diseases, especially diseases with high prevalence, such as hypertension and diabetes mellitus. We should have that kind of hospital" (P9).

Advanced Science

The advanced science theme is reflected in the idea of a specialized hospital is a symbol of the development of science in which the activities in hospitals will be not only treating and curing but also research and education. The provided facilities in the specialized hospital were more specific to treating CVA or stroke patients:

> "That hospital (specialized hospital) is designed for the development of science, the development of technology is not the first priority, maybe it was the third. Then it is the way for the development of science, at the specialized hospital, specifically for neuroscience and cardiovascular" (P3).

> "That's right, I saw several specialized hospitals, and for public hospitals, the development is so amazing. So the specialization drives the deeper understanding of expertise, facilities will be advanced, and so on" (P6).

Challenges in Developing Specialized Hospital

Participants declared that several challenges arose during the implementation of new ideas, such as developing a specialized hospital. These challenges came from different settings in which the hardest challenge was complex regulation. In addition, limited financial support and the number of human resources have been concerns on which to focus.

Complex Regulation

The development of a specialized hospital was a type of bottom-down ideas that was initiated by a KB and executed by a KB. The complex regulation, including bureaucracy, has been a major issue that a KB must negotiate with the stakeholders:

> "… several regulations have made the services tend to be slower, so they should be modified. I reckon that is the crucial thing" (P12).

> "… the second is about bureaucracy for developing the hospital, such as the permission to check many aspects, such as environmental impact assessment. It needs energy" (P13).

> "… sure. There are several things in bureaucracy. Perhaps they do not have the same understanding of the bureaucracy" (P14).

Financial Obstacles

Participants mentioned that the availability of funding was an obstacle. To be allocated a proportion of the state budget, KB had worked hard to negotiate with the Ministry of Finance:

> "Yes. The funding. I think the Ministry of Health was not handled about the fundingt" (P8).

> "… they were seeking financial support from the personnel of KB" (P11).

> "First, there is a financial burden, as the specialized hospital was not designed for profit or business activity, it was for the social center" (P13).

Human Resources (Culture and Attitude)

The last category in this theme is human resources assigned to work in the specialized hospital. Participants said that culture and attitude influenced the attitude of human resources in health (e.g., doctors, neurologists, nurses) to a specialized hospital. The number of human resources had been considered a factor to determine the sustainability of the development of the specialized hospital:

> "… from the human resources. How to manage the mindset, the changes of mindset management, system management, tools management, skills management, that were all not really easy, it was a long process" (P6).

> "Every new idea will be responded to with an opposite, especially from people who have enjoyed being in their zone or comfort zone. This means that creating something new will lead to feelings of fear, worries, and suspicion. Mostly, if people do not get any personal benefits, they will be suspicious, accusing, suspicious, and any other negative thought" (P12).

> "… from the intern environment. I mean, from the neurologists who came from another hospital, they were not really compact" (P14).

DISCUSSION

The present study describes KB intervention in Indonesia in the context of developing a specialized hospital. Generally, the majority of participants were not familiar with the term "KB"; however, they were actually having practical experience of engaging with a KB. In this study, we constructed five themes that were representative of the seventeen participants' views on KB and the implementation in the development of the specialized hospital in Indonesia. Through five themes, the framework of KB was shaped as a reflection of its implementation in the specific context in which three themes are KB-related internal factors and two themes represent external factors.

In the first theme, our findings revealed the characteristics of KB that are divided into four domains: determined and unrelenting, idealism and vision, capacity-building skills, entrepreneur, and transcendence. Determined and unrelenting is attributed to the proactive, never giving up, and persistent personality of KB when they commit to achieving their ideas to make them become reality. This characteristic is in accordance with a study conducted in Kenya [19] that evaluated the capacities and skills of a KB. In a similar vein, KB has been breaking down these characteristics into enthusiasm, creativity, and tireless commitment [16]. In this study, the idealism for improvement reflects vision and self-encouragement. Moreover, theoretically, idealism implies reality, which is mind-dependent and is influenced by our ideas [28]. For the capacity-building skills, we found that the characteristic comprises several values of a KB, namely, networking skills, communication or persuasion skills, good track record, talent, broadened insight, and knowledge in their field. Compared to the other study on KBs, our findings merge the 'linkage and exchange' and 'capacity-building' aspects of knowledge brokering and skill required for their realization into one main term [18, 29, 30]. The rationale for this is that the two domains are connected and influence each other [31]. Furthermore, sincerity is the intention of doing work without hoping for any individual benefit or being selfless. Interestingly, idealism for improvement and sincerity are two aspects that have never been explored. Thus, these two characteristics of a KB have been highlighted as the main finding of our study. The dynamic aspect of the broker itself should be developed by providing learning environment to the broker to influence other actors [32]. KB accountabilities emphasize on the process and outcome, the broker should ensure that translation process run according to the ultimate goals. Therefore, the broker accountable to the entity and to the collaborative structure within the system.

The second theme illustrates the practical roles of a KB in terms of developing specialized hospital settings. Regarding the participants' comments, the role of a KB can be categorized into three main functions: communicator, problem solver, and convincing stakeholders. We describe a communicator as a person who can communicate with and convey and transfer information or ideas clearly to other people. This role requires communication skills [12] since it is a part of general skills in information management [24, 29] and the inner setting of KB conceptual framework [8]. Communication skills also correlate with the aspect of knowledge translation and exchange [12, 17, 33]. When KB knows the audience and adapts the way they communicate to the audience's background, it will be easy for them to make the audience understand [19]. Another aspect is problem solver, which includes the ability to notice, understand, and analyze problems before using their capabilities to develop the solution. This characteristic is supported by the concept of the role of KB and is included as an entrepreneurial characteristics [12, 34], and it accelerates the decision on the policymaking process [28, 35]. The last component of characteristics is convincing stakeholders, which is in line with the model of the approach used by a KB to transfer the ideas or knowledge to specific targets, as proven in previous studies [36-38].

Demand brokering has been selected as a term to depict the third theme, as it explained that the area of KB's existence was needed and the notions of creating more KBs. In the first category, we explain the demand for KB correlated with the action of innovation and transformation in health, especially in the development of the specialized hospital. While knowledge hub form creates more KBs and the perception of whether KB can be training, or it is a talent. A previous study conducted in Burkina Faso applied the concept of KB training to create more KB professionals for implementing evidence-based research as a regulation recommendation [8, 39]. Another practical training program of KB was analyzed in several studies, which concluded that it was the best way to enhance the quantity and quality of KBs [11, 16, 35, 40, 41]. Since "KB" is a common term used in Indonesia, we suggest that a KB training program should be provided to help health transformation.

The fourth theme has conveyed the perception of the specialized hospital divided into the various perceptions of specialized hospitals, expanding specialized hospitals, and advanced science. Participants in this study assumed that the specialized hospital was initially becoming an unprioritized project in Indonesia. As time goes by, with the high rate of CVA cases and other cases, namely, cancer and other diseases [36], the demand for specialized hospitals has started to rise. Moreover, those who have to understand the concept of the specialized hospital perceive that those specialized hospitals provide advanced facilities and teams. A study on patient perception of specialized hospitals confirmed that specialized hospitals provide a multi-professional team that manifests in the satisfied, supported, and safe feeling of patients [37, 38].

According to the participants' experience, several challenges arose while developing a specialized hospital. We discovered three domain challenges for which a KB should find the solution: complex regulation, financial obstacles, and human resources. These challenges had been the external factors that led to the characteristics and roles of KB being recognized. Another study related to KB challenges listed several issues faced by KB, such as time and resources, lack of distinction between brokering roles, the range of skills required, and the lack of knowledge related to the conceptual factors of KB and its effectiveness [39]. Our findings are quite different from those of the previous study. We believe this is due to the fact that the other study evaluated factors, whereas this study is more focused on KB challenges in developing the specialized hospital.

Limitation

This study has limitations e.g., when compared to qualitative research in general, the number of participants in this study was relatively low. However, as the issue of KB is less popular in Indonesia, we think the number of participants quite representative. Furthermore, using the existing framework for KBs is limiting the scope of the research to a static "picture".

Future Perspective

Future perspective section of this study has considered the future of knowledge brokering in health sector with the help of frameworks of KB in the context of developing a specialized hospital. There need to recognize the local wisdom, which incorporated on to health system. Institutionalization of characteristics of KB should consider the transformation in health sectors. Preparing the future KB in transforming health sector in Indonesia may require investment in education and practice setting.

CONCLUSIONS

The findings of this study have been incorporated into KB framework in the specialized hospital setting, which is composed of five main themes: characteristics of KB, role of KB, demand brokering, perception of specialized hospital, and challenges in developing the specialized hospital. All the components in the themes are connected and cannot be separated.

Management of the talent pool is needed to enhance KB's capacity to face the current challenges of health development. It is recommended that the preparation and training of KBs should be started during formal education. KB framework may be transferred and applied in different sectors of development. The need of KB might cannot be quantified but the demand is obvious. The possibility of its application in development of specialized hospital is huge meet the population need. Furthermore, the availability of funding cannot be denied as the essential component for developing the specialized hospital. Thus, KB should have the ability to not only gain the funding, but also manage the funding resources. This study adds that in the context of Indonesia KB fuse with the individual, organization, and environmental situation.

Author contributions: All authors have sufficiently contributed to the study and agreed with the results and conclusions.

Funding: No funding source is reported for this study.

Ethical statement: Authors stated that ethical approval was obtained from Prof. Dr. Mahar Mardjono of the National Brain Center Hospital Research Ethics Committee (reference number LB.02.01/KEP/089/2021). Before recruiting participants, we provided detailed participant information and asked all the participants to confirm their agreement to participate by signing the informed consent form. During the collection of data and the analysis, interpretation, and distribution of the findings, the confidentiality of all participants was protected.

Declaration of interest: No conflict of interest is declared by authors.

Data sharing statement: Data supporting the findings and conclusions are available upon request from the corresponding author.

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APPENDIX A: LIST QUESTION OF THE QUESTIONNAIRE

What is the knowledge broker by its opinion!

1. What is the characteristic of knowledge broker?
2. How the knowledge broker works into the certain project?
3. Why the knowledge broker succeeded?
4. Have you ever experienced work with knowledge broker?
5. What are the challenges and the future of the knowledge broker in Indonesia?