Mental health knowledge management: critical success factors and strategy of implementation

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Abstract

Purpose – *This paper aims to recommend implementation of the knowledge management (KM) strategy for a mental health organisation, an area that has, to date, limited attention in literature based on the factors that influence KM success.*

Design/methodology/approach – *A mixed-methods research was conducted to identify the organisational culture, resources, enablers and the influential factors of mental health knowledge management (MHKM). The data were collected in five referral mental hospitals and were analysed using quantitative, qualitative and triangulation methods.*

Findings – *The organisational culture has become a great barrier. Forty-three influential factors were identified. Otherwise, based on culture, resources, enablers and strengthen, weakness, opportunities and threaten (SWOT) analysed were adopted to propose ten of the critical success factors and were recommended into an implementation strategy.*

Research limitations/implications – *The paper has proven that KM is a new and emerging discipline in Indonesia, especially on mental health care. This will contribute to the governmental policy of KM implementation and enforce the quality of services.*

Practical implications – *This result has the potential to leverage interdisciplinary KM research. It supports a mental health organisation in applying KM.*

Originality/value – *This study is probably the first to analyse factors that are of influence in an MHKM initiative programme.*

Keywords *Critical success factors, Knowledge management, Strategy, Mental health*

Paper type *Research paper*

Introduction

A major challenge currently of knowledge management (KM) in developing countries is successful implementation. It will need a strategy recommendation in the area of organisational governance, such as mental healthcare services. The key problems of developing countries are education, health care and food. Therefore, successful management of knowledge expertise in decision-making has become critical to surviving in today's social–economic environment. However, health care is getting progressively difficult because of massive citizenship in a growing country. Public demands for prime services and long-term medical care necessitate faster handling of new or modified healthcare delivery. A typical example is the mental health sector, where the "best" patient care decision leads to the success of much of the existing clinical practices worldwide. However, the growth of knowledge expertise is not congruent with the ability to effectively disseminate, translate and apply current mental healthcare knowledge in clinical practice. Based on Global Health Observatory data, in 2014 the world's population (45%) lived in a country whereas one psychiatrist should serve 100,000 people (WHO, 2015). This condition is happening in Indonesia. There are only 650 psychiatrists, whereas the Indonesian society amounts to around 260 million. It is related to Abidi (2008), where time

"Successful management of knowledge expertise in decision-making became critical to surviving in today's social economic environment."

availability is the key to successful clinical decision-making in the usage of correct and relevant knowledge with respect to the clinical context.

Lately, mental health problems can be easily triggered by job factors, economics, behaviour, lifestyle, natural disasters, etc. These factors can cause stress, depression, schizophrenia and other mental disorders. This incident is certainly detrimental to society because it can raise emotional behaviour, such as domestic violence, crime, loss of common sense and reason and even loss of life expectancy. As predicted by the World Health Organization (WHO), Indonesia has become the third country in the world with an increase in mental disorders due to the high population (Hadzic *et al.*, 2008). This prediction was calculated based on the ratio of populations to the number of psychiatrists. Indonesia is a large country with thousands of islands, which led to the difficulty in setting up facilities that provide mental health services in the border areas. This was proven by the high number of sufferers of psychiatric "pasung", physical restraint by families of people with mental illness (Balitkes, 2013), which occurs because of a lack knowledge of the treatment process and how to recognize and cope with mental illness in the family.

Currently, healthcare knowledge management (HKM) has been of interest to researchers, academics and practitioners. The problem still has not been proven conclusively to be a success and it is becoming a big challenge. Although there was application in various fields, it was not for the consensus in general. This was caused by depending on the perspective when the research was carried out. Specifically, KM research for a mental health organisation is limited. Therefore, the policy has come out to the discharge of government programmes to improve the quality of service through KM implementation. In this study, the preparation of a research question was based on the occurrence of gaps in mental health knowledge management (MHKM). Hence, this was focused on addressing KM initiation programme implementation for psychiatrists in a mental health organisation. Based on the facts, it was discovered that the existence of a gap is the ratio of the availability of psychiatric and public needs. Furthermore, awareness of mental health is low. The data proved that mental disorders have increased. A mental hospital is the right place for handling these patients. Therefore, the government requires the right information for making decisions to solve this. However, a psychiatrist is the only person in charge to cope with this. By all means, their knowledge needs to be managed and shared for others to fulfil the ratio of evidence.

In addition, research on HKM is still growing. They are focused on practicing and applying to an organisation. There are many factors that can affect successful implementation. Organisational culture (OC) is known to be one of the main factors, followed by process, peopl, and technology (Nayir and Uzunçarsili, 2008; Tong and Mitra, 2009; Suppiah and Sandhu, 2011). It plays an important role because it might be a hindrance or catalyst for the regeneration of knowledge as well as knowledge sharing (Gray and Densten, 2005; Ahmed, 2010; Wiewiora *et al.*, 2013). Therefore, to identify the type of OC, organisational problems, resources, enablers (Becerra-Fernandez and Sabherwal, 2010) and critical success factors (CSFs) (Leidner *et al.*, 2006) were recommended for MHKM implementation strategies to be efficient and effective. This became the main question of what are the critical factors, as well as the strategy of what to do to be aligned with the goals of a KM organisation. Furthermore, it also remains that mental health is in the spotlight worldwide after the WHO declared that Indonesia is the third country that will be affected

by population growth. Therefore, the MHKM aims to ensure that a knowledge owner can share, disseminate and utilise it as a source for increasing other awareness in the quality of life.

Knowledge management

The general purpose of KM is fixing and enhancing the management of potential knowledge systematically (Heisig, 2009). The goal of KM is to facilitate, firstly, an organisation in the act intelligently (to secure continuity and success) and, secondly, to make an organisation realise the best value of its assets. It is also for maximising an organisation's effectiveness (Theriou *et al.*, 2011). Kangas (2005) says that an organisation can manage, create business value, generate a competitive advantage and use knowledge to create, communicate and process for any business purpose. According to Brun (2005), KM strategic and resources (assets) are important to develop intellectual assets and value of organisational knowledge. Many organisations are thinking to begin but are concerned to adopt KM because of not being sure how it can be achieved (Valmohammadi, 2010; Kang, 2011). This arises out of the presumption that KM is a relatively new concept, which leads to lots of time being wasted looking for the "best practice" for an application effectively and efficiently. The practice available was not necessarily right and appropriate because each has different challenges and issues causing the process in the price.

Traditionally, business success depends on physical resources. Whereas, other assets such as knowledge are limited, especially when not being utilised and distributed (sharing). The result is always able to increase knowledge sharing for all parties (Kangas, 2005). Brun (2005) declares the concept of concerning knowledge to be owned by the people. The concept is influenced strongly by the OC, including values and behaviours. Therefore, getting it properly and appropriately is important, even if it occasionally becomes a difficult challenge. The organisational culture (OC) must emphasise on the learning process and how to achieve knowledge sharing (Lusignan *et al.*, 2002). As mentioned above, the knowledge of expertise is crucial to manage and improve for their beneficial professionalism. A knowledge psychiatrist becomes one of the critical driving forces for success in mental health care. An organisation should explore the field of KM to sustain its competitiveness, and a need to be aware of the factors that will be influence the success of a KM initiative programme. It is related to Wong (2005), in that the necessary important factors should not be ignored. Therefore, an understanding of CSFs in implementing KM in mental health care is needed to ensure the success of services.

Organisational and national culture

The KM researchers are not yet generalised because each organisation has different conditions and characteristics. The particular cultural types provide different effects in the process (Jacks and Illinois, 2012; Becerra-Fernandez *et al.*, 2004; Wong, 2005; Heisig, 2009). Kim *et al.* (2012) state a commitment of behavioural change and culture to further increase collaborative, transparent and proactive to become essentials. It was claimed that OC was very influential in the success of KM application (Rai, 2011; Guptill, 2005; Abidi, 2008; Ebenezer, 2002; Bose, 2003; Obaide, 2004; Jennex *et al.*, 2007). The character and condition of an organisation will also represent the OC type, as well as national culture

"It is unfortunate if the knowledge owned by the experts is not managed properly or becomes the intellectual assets of an organisation."

> **"Mental Health Care combines vast interdisciplinary knowledge."**

(Jacks and Illinois, 2012; Becerra-Fernandez *et al.*, 2004; Wong, 2005; Heisig, 2009). Referring to Gregory *et al.* (2009), it was largely influenced by the behaviour of members to act and take decisions. Wiewiora *et al.* (2013) said that it can build interaction patterns in the context of social and norms. It can affect how people communicate and share knowledge. OC may affect the behaviour of members, learning and development, creativity and innovation, as well as KM (Yesil and Kaya, 2013). Balthazard and Cooke (2004) argue that an organisation has cultural diversity, which was formed due to differences in the characteristics of professional orientation (status, history, power and visibility). Culture shows and explains behaviour as a reflection of its values and mission. Jacks and Illinois (2012) defined OC to be the dominant pattern of basic assumptions, perceptions, thoughts, feelings and attitudes that are owned by its members.

Cultural context is important to understand because it is related to the basis of KM. Trust and openness should also be embedded in the environment consistently. This can be created by leadership through a strategic command in the process. OC strongly supports its implementation as well as technology adaptation and practices. Allameh *et al.* (2011) says culture can influence in various ways, such as that knowledge can penetrate and affect KM. Culture refers to the infrastructure capabilities that are composed of its vision and values, the attitude towards learning, cultural influences on interaction and collaboration.

However, practitioners realised that the knowledge owner and the OC are the deciding factors in the success or even, the reverse, the cause of failure (Rubenstein-Montano *et al.*, 2001). In the field of health care, KM was widely used to improve the quality of service. Unfortunately, no one has claimed to be successful in implementing KM in mental health. Leidner *et al.* (2006) did research on 453 companies. The research results revealed that more than half of the objects indicate that the OC became the main obstacle to KM initiatives. The company Ernst & Young and KPMG also reported that culture becomes the biggest obstacle. The form of OC depends on the ability to change the behaviour of people. Therefore, OC must provide support and incentives as well as supporting activities. It is related to knowledge by creating an environment to access and exchange knowledge (Lopez-Nicolas and Meroño-Cerdán, 2009). Furthermore, the failure of achieving KM goals was caused by not considering the important factors of culture (Holowetzki, 2002).

KM success factors and strategy

According to Wong (2005), CSFs are defined to be areas of success. They must be satisfied and ensure the success of the competitive performance of an organisation. This area includes planning, activities and practices to be effective. Furthermore, it is known to be the tool or tools to ensure the achievement of the performance in accordance with its mission (Zawawi *et al.*, 2011). Referring to Cristina (2009), a KM programme needs to identify critical factors to achieve its performance indicators. It can develop the process of management and planning of work. It also can identify the cause of failure and improve the system in the future. Significantly, it presents the key factors to make organisations fail, which were derived from the goals and objectives, as well as to ascertain whether the factors and the process were already in place. Therefore, the analysis of the factors will provide an important meaning for KM through the identification of the potential processes that were critical to MHKM, such as culture, resources and enablers.

According to success can be measured using the dimensions of its impact (e.g. business processes, strategy, leadership, process, KM system is effective and efficient, OC and content knowledge). She said that to be successful, KM should increase its effectiveness based on repeated utilisation and give precisely when it is needed. However, its success has a multidimensional concept (right to capture, right granted, right time and to improve the performance of organisations and individuals). In regards to business, CSFs were always identified to be critical factors that are appropriate or not for an organisation. Many terms are used to identify and measure KM factors' success, such as criticism, enabler, facilitator, barrier, element and key success factors. In a previous research (Anggia *et al.*, 2013), the CSFs were elaborated and founded, which influence KM implementation in an organisation. The study was carried out in a teaching hospital and the main referral hospital in Indonesia. The result shows that several CSFs for KM implementation were education and training, human resources management, top management support and OC. Hence, this study became the reference for CSFs of MHKM.

From the analysis of CSFs for KM implementation, it was found that culture was frequently listed as a CSF. Specifically, Holowetzki (2002) stated that every organisation faces the same challenges to KM initiatives, despite environmental conditions to make it a bit unique. Organisations must integrate the strategy, vision and build the OC as well as motivate workers to support KM. Moreover, Guptill (2005) revealed the five major principles to improve the performance of a clinical hospital's operations, i.e. communities of practice (CoP), content management, knowledge and capability transfer, performance results tracking as well as technology and support infrastructure. Wong (2005) and Heisig (2009) comprehensively conducted CSFs for KM. According to Heisig (2009), there are four categories for the critical success of KM, i.e. human-oriented factors (culture–people–leadership), organisation (process and structure), technology (infrastructure and applications) and management process (strategy, goals and measurement). However, the results were quite diverse depending on the emphasis of research (e.g. initiatives, strategies, implementation, process, monitoring, evaluation, etc.). Based on these results, the identifying factor influencing MHKM implementation is needed to arrange the strategy recommendation.

Mental health knowledge management

According to the WHO (2014), mental health is:

> Defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community. Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Likewise in health care, KM was building a "knowledge-based society" with a connection between hospitals, clinics, pharmacies and users to share knowledge, reduce medical costs and improve the quality of health services (Hsia *et al.*, 2006). Therefore, the management of information and knowledge is an important issue, and causes very high requirements for this. The quality of health service is dependent on the process of the collection and analysis of data, the exchange of clinical data and information, the transaction business and the utilisation of knowledge both within and outside the organisation.

In fact, the research has a massive arising of new concepts, such as H KM (Morr and Subereaze, 2010), medical KM (Berka *et al.*, 2009), clinical KM (Lorence and Churchill, 2005) and so on. This field has specific challenges in between the complexity of the system (the impact of medical errors, and a substantial increase in medical knowledge) as well as the management of healthcare costs. Healthy organisations always need data and information (for nurses, patients, medical treatment of results that were given) as well as performance evaluations. The source of such information (material, human and financial) should be managed effectively to provide, coordinate and integrate healthcare services

(Heathfield and Louw, 1999). Specific knowledge in regards to health is certainly necessary to address the clinical problems.

The reasons to adopt KM practice mainly are to improve patient safety and care, reduce maintenance costs, support decision-making and getting the best clinical practice (Mirza, 2009). It was also recognised that KM can help improve the professionalism of medical experts in managing their practice to provide a quality service to patients (Abidi, 2001). Based on this research, we defined that the MHKM goal was to improve the quality of services for mental disorders and society. It was assumed that care and treatment of mental disorders are based on knowledge of the drugs and practices. Therefore, medical experts are to be mandatory in understanding the KM practice effectively (Orzano *et al.*, 2008; Akramin *et al.*, 2013). One of these can be done through the health portal for exchanges and knowledge sharing among the principals of health (Lee *et al.*, 2010). However, this process will take time. It is needed for a commitment to behavioural change and cultural matters to be collaborative, transparent, proactive and more inflated (Kim *et al.*, 2012). As revealed by Amararachchi *et al.* (2013), more than 98,000 patients die each year due to medical errors that cannot be prevented. This is possible to happen in spite of information and knowledge that are already available as a reference, but in fact, a doctor cannot update quickly. If this can be applied, at least 48 per cent of these events might be prevented. Similarly, Acharyulu (2011) says, there are many poor health organisations with information and KM, although in actuality, the health sector is rich, but the quality of the information provided cannot be used effectively for the best practices.

Methodology

The procedure

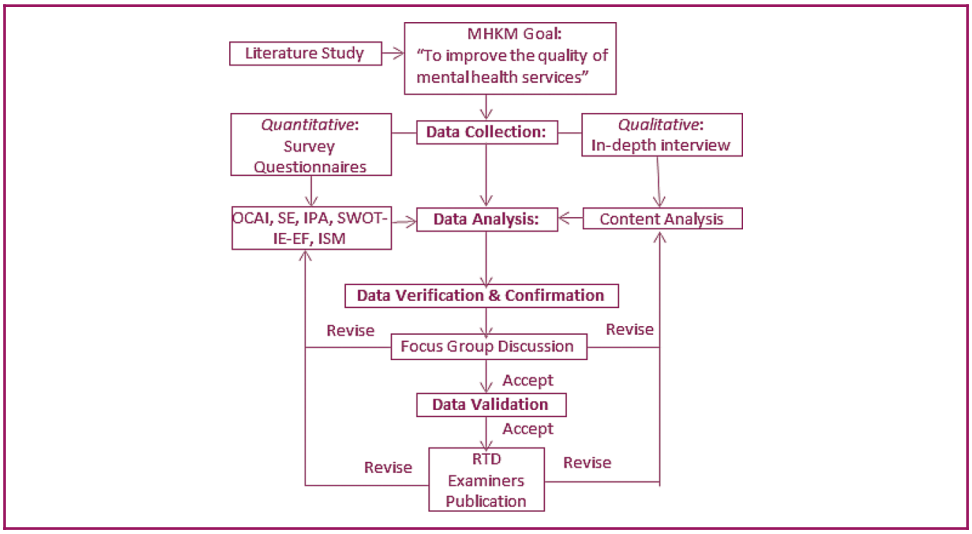
The mixed-methods research was conducted for two years (2012-2014). The quantitative approach was used through surveys and a questionnaire (workshop mode), and the qualitative approach was used through in-depth interviews and focus group discussion (FGD). The analysis used (1) Organisational Culture Assessment Instrument (OCAI) to identify Organisational Culture (OC); (2) Strengthen, Weakness, Opportunities, Threaten-Internal Factors-External Factors (SWOT-IF-EF) to find out the gap of existing problems and to achieve the KM goal; (3) Shannon Entropy (SE) to calculate the weight of KM factors' influence for implementation; (4) Important Performance Analysis (IPA) to investigate the relationship between application and importance of the level of readiness for MHKM implementation; and (5) Interpretive Structural Modeling (ISM) to depict the strategic level and phases. Therefore, the content analysis was used to measure the frequencies and context of words.

Furthermore, the verification and confirmation used FGD, and when the results were not accepted, it should be revised and returned to the analysis phase. Otherwise, it will continue to validate using round table discussion (RTD), examinations and publications. The process will be repeated until the results are accepted by experts and participants. It will also be revised when the results have some correction in the validation phase. Sometimes, one term or statement was used many times (at least four times) to get the verification, confirmation and validation. A methodological triangulation was done to develop a richer understanding of the results. To connect the dimension of results, this study established a scheme of research phases (Figure 1).

Data collections

The surveys and questionnaires were conducted by a field trip to the object. It was a repetitive process due to arranging the workshop and socialisation regarding the research agenda. The activities were realised by a meeting and workshop that was done with the top level and the middle level of the organisation. Participants filled out the letter of concern and the questionnaires. A questionnaire was composed of the following topics: OCAI, KM

Figure 1 The research scheme



implementation and SWOT-IF-EF (an open question to capture the opinion, suggestion, critics, etc.).

OCAI refers to Cameron and Quinn (2000), where respondents should tick the options for currently and preference condition columns. Furthermore, KM implementation refers to Obaide (2004), which consisted of six variables. Each variable was consisting of several questions and represents the variable of activities, namely, awareness and commitment (four questions), organisational strategy (eight questions), culture (ten questions), organisational structure (five questions), the person or people (nine questions) and information technology (IT, six questions). The data corresponded to areas of implementation (A = implemented completely; B = partially implemented; C = in the plan to be applied; D = not implemented; E = don't know). They were also correlated to the importance level (1 = very important, 2 = important, 3 = profitable, 4 = not important, 5 = don't know).

Furthermore, an in-depth interview as a technique of ethnography was conducted by selecting a participant who was eligible to the categories, e.g. professional, expert, clinicians, academician, decision-maker, middle level and was willing to be an informant. Others were done using an e-mail and netnography. It took 30-90 min for an individual using structured and open questions. Some were done in groups (nurses) that were followed by six to seven persons. This is aimed to get some critiques, contrasts, compares, combinations and syntheses with perceptions of the respondents before. The data were recorded and transcribed in the form of notes. This phase took about six months.

Demographic characteristics of research objects

The questionnaire was collected for 150 respondents (Appendix 1). It was dominated by women, the professions of doctors and nurses and an average of 45 years. The model workshop that was taken for 2-3 h became an effective activity for data collection. Whereas, in-depth interview took longer because apart from the bustle of the informer as a doctor, willingness and agreement schedule must be made in advance. It was taken in 60 min on average (30-90 min). Distribution of informants is presented in Appendix 1. In regards to the detail of professions, they were: Bogor (7 psychiatrists), Magelang (9 psychiatrists, and 12 nurses), Lawang (1 psychiatrist, 5 doctors and 3 nurses), Cibubur (1 psychiatrist, 1 doctor, 4 nurses and 2 medical support) and Department of Health (3 psychiatrists as a stakeholder).

Data analysis

According to Cameron and Quinn (2000), OCAI is used to assess the characteristics of leadership, management style, relationship, strategic emphasis and success criteria. The cumulative answers on similar criteria were divided into six, and cultural values had to represent 100 points on four alternatives. These options correspond to the columns of the four types of OC currently, and the option to change the cultural expectations in the future. The highest value reflected the current condition and preferred cultural type. The similar value indicated the combination or were mixed by culture type.

KM instrument was used to evaluate the existing activities that reflected KM implementation. The Shannon entropy (SE) method (Lotfi and Fallahnejad, 2010) was used to calculate weighting and priorities to the rank of each variable existing. The questionnaire intended to prioritise key success factors and problems that were related to KM initiative programme implementation. Importance performance analysis (IPA) (Pak, 2013) was used for weighting criteria and sub-criteria on the factors that affect KM in the six main variables and criteria. The data corresponded to areas of KM implementation as well as the importance level. Then, Interpretive structural modeling (ISM) (Singh and Kant, 2008; Anantatmula *et al.*, 2010; Ede and Mohamed, 2011; Yadav and Barve, 2015) was used to depict the relationship between the strategy to order the directions for achieving the MHKM goal, which is the process of getting value from an in-depth interview.

SWOT-IF-EF was used to find out the perspectives of the respondents against individuals and organisations in the strategy action. The content analysis was used to identify the problem with the point of view of the selected words (Lee and Kim, 2001). The measure was done in detail:

- transcribe the interview to identify unstructured problems into the culture, SWOT-IF-EF and key success factors;
- describe the problems of each situation analysed, to reveal it more clearly using a rich picture of the root problem, and the result was presented in the FGD to get feedback on the facts of the problem with the real world;
- describe the root of the problem with the point of view of the selected definition, the result will depict the needs and this should take into consideration the stakeholders involved that will be affected;
- discuss improvements to ensure the feasibility of culture, and take into account the views of stakeholders, background and experience of the people involved; and
- compile the step that should be done as a form of organisational strategies to take action and implement changes that can improve the gap.

Data verification and confirmation

FGD was used to verify and confirm data analysis. It was conducted in selected locations (Bogor and Magelang). The participants consisted of 16 psychiatrists, 3 doctors and 1 nurse. It was conducted twice to refine all results where it had a missing word or correction of statements. The results of the analysis and subsequent data representation were verified, confirmed and validated through the technique of FGD. Some feedback and corrections were concerning evaluation and validation. The refinement results were used for triangulation and were validated by the expert panels in RTD (Appendix 1). This meeting was attended by a representative of the academicians, clinical, psychiatrist, doctor, policymakers and practitioners. Research results were tested in the last of the board of examiners in three periods to be justified scientifically. It was also presented in an international forum and published.

Data validation

The results of FGD became material for further validation, which involved stakeholders and the top level. This activity called RTD was attended by 17 experts including 11 psychiatrists, 1 IT data centre and 5 experts of KM (3 academics and 2 practitioners). Whereas the stakeholder consists of 1 as an interim of decision-makers (Directorate of Mental Health), 4 directors of mental hospitals, 3 heads of division, 1 professor of psychiatry and 2 psychiatrists. The triangulation can be done on the ethnography method to support a deal against the different findings, without having to do the contradictions between the different results. According to Khalifa and Husain (2013), it can be used for mapping, clarifying and enriching the complexity of human behaviour at the time. The examination uses two different methods (qualitative and quantitative). These methods analyse an organisation's needs, existing assets or resources, flows, gaps and the behaviour of people in creating and sharing of knowledge. The strategy of triangulation can also be used to achieve reliability and validity assessment as an attribute that includes sampling, respondent validation, audits and reflexivity (Creswell, 2003). In addition, it was used for reliability, credibility and concurrent validity (Cohen *et al.*, 2007).

In the context of reliability, research was carried out having addressed processes that were consistent with the results of the mutual comparison between different methods of triangulation. Data analysis compared the different findings of techniques (i.e. questionnaires, interview, FGD and RTD-expert panel). It produces the same result and complements each other. Consistency was done on each of the techniques, and methods of data collection include the questions with reference to the type of culture, CSFs and the recommended strategies. The findings were noted and recorded, and then processed using the tools to achieve the objectivity. Therefore, this research can be followed easily by other parties that wish to develop advanced research in KM.

The results and discussion

Organisational and national culture

The OC became the basis for MHKM. It can be a strategy for an organisation to improve the adaptability and compatibility with the environment (Aktas *et al.*, 2011). Therefore, an understanding of the type and its characteristics, including national and OC, becomes a factor for consideration. It is not debatable that culture in the hospital tends to focus on the internal environment and has an emphasis on stability, as well as having clear rules (Saame *et al.*, 2011). However, this culture can differ depending on the ownership of the hospital. Private hospitals tend to be more emphasised on corporate aspects, whereas government hospitals emphasise on hierarchy. However, according to Aktas *et al.* (2011), to understand the type, there are many models that can be used, e.g. Schein, Schwartz, Hofstede, O'Reilly and the competing value framework (CVF). The CVF is most commonly used to find out the influence of OC on the performance of hospitals. In this study, it was used to find out the type of OC, and its effect on organisational performance, as well as for strategy consideration.

Currently, the cultural type is market and hierarchy. However, in the future, the type of clan and hierarchy would be more preferred (Figure 2). This is illustrated by a solid line (represents the current culture) and the dotted line (represents the preferred). The market is the dominant type (33,08 points) that concentrated on the results of orientation, production, aims, objectives and competition. Secondly, the hierarchy (31,17 points) concentrates on the structure, procedures, efficiency and predictability. Thirdly, the clan (21,88 points) focuses on a happy place to work, and people share a lot of themselves with high commitment. Finally, the adhocracy (13,87 points) represents characteristics that are dynamic, entrepreneurial, creative and to work (Table I).

Regarding the correlation between OC and KM, it was concluded that mental hospitals in Indonesia are more likely to lean towards market and hierarchy, as opposed to clan and hierarchy. Unfortunately, market and hierarchy types are negatively correlated with KM in

Figure 2 The CVF representation of a mental hospital

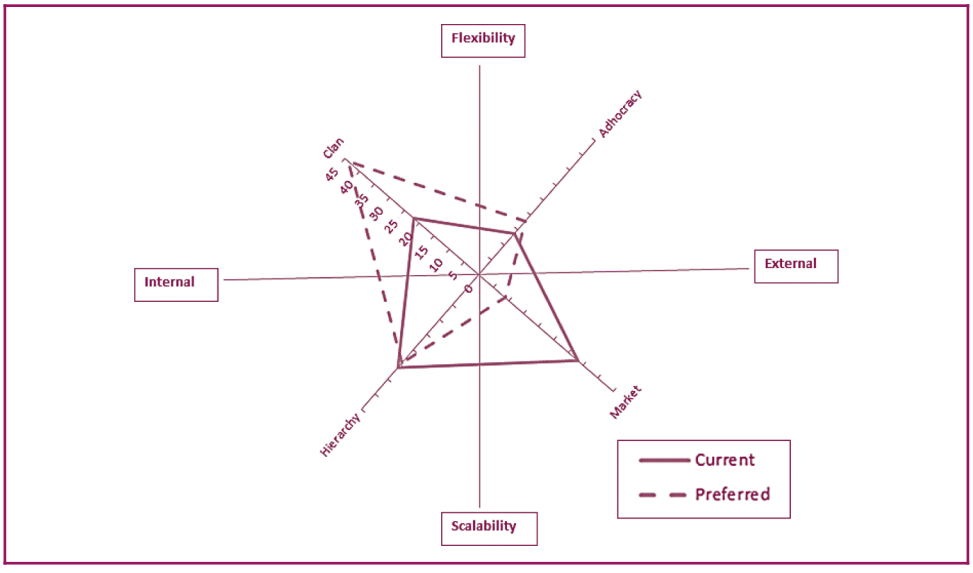


Table I Measurement of current and preferred type of OC

Types of OC	*Current*	*Preferred*
Clan	21.88	*43.95*
Adhocracy	13.87	17.83
Market	*33.08*	8.66
Hierarchy	*31.17*	*29.55*
Total	100	100

Note: Current = the situation on data collected; Preferred = the expected situation

organisations (Lopez-Nicolas and Meroño-Cerdán, 2009; Yun, 2013). Hierarchy tends to be a barrier rather than an enabler because it can inhibit cultural knowledge sharing within an organisation. In addition, the market tends to be outcome-oriented, and the application of the MHKM can be complicated because it cannot be used quickly and visibly eased. Therefore, organisations need to do a hospital strategy to switch from the current culture towards their preference (Clan 43.95 points) that can be positively correlated. Therefore, knowledge creation and sharing as the basis for MHKM will improve the quality of mental health through new products and services. Therefore, it was considered that strategic approaches are as presented in Table II. Moreover, it is recommended to increase the national culture (Table III) that is dominated by power distance. The gap between junior and senior is high because of regeneration being a low regard to limited facilitation on education.

Resources

The resources were quantified in regards to the mental health knowledge, as well as the availability of the infrastructure in practice. It is important that the knowledge may always be renewed or updated, to support the decision of how diagnostic and therapeutic interventions can be performed (Abidi, 2008). These resources may include medical diagnostic tools, medicines, nurses, support staff, facilities operations, etc. The resources consist of patient, psychiatrists, doctors, nurses, medical supports, library, standard operating procedures (SOP) and research and development (R&D). The type that appears may be tacit, explicit, potential, procedural, declarative, etc. According to Abidi (2008), each type can be represented as a modality that can capture one or more types of the

Table II The strategy recommendations for changing OC type

OC focus	*OC preferred as clan and hierarchy*	*Recommendations*
Dominant characteristics	They prefer that the organisation is a very dynamic, entrepreneurial place, whereas people are willing to stick out their necks and take risks. It is controlled in structure place, and formal procedures generally govern what they do	Adequate government regulation Encourage the resources and are looking for preferring work climate Improve psychiatrists' careers and professional purpose
Organisational leadership	They need leadership in the organisation to be generally considered to exemplify mentoring, facilitating or nurturing, and also coordinating, organising or smooth-running efficient	Adequate government regulation Extend research and development of public to be healthier Strengthen reward systems effectually
Management of employees	They require that the management style in the organisation is characterised by security of employment, conformity, predictability and stability in relationships, as well as teamwork, consensus and participation	Improve IT infrastructure for decision-making Enrich facilities of education, and strengthen regulatory in training and education (master-apprentice)
Organisation glue	They hope that the organisation together has loyalty and mutual trust, commitment to this organisation runs high, formal rules and policies and maintaining a smooth-running organisation is important	Increase a knowledge culture and knowledge sharing Establish the ministries (education, economic, health, apparatus, religion, social politics and law) to be able to pool resources together to increase specialists of the psychiatrist in reducing the mental health problem
Strategic emphases	They think that the organisation should emphasise human development, high trust, openness, participation persist, permanence, stability, efficiency, control and smooth operations	Establish coordinating of the ministry and departments in relating mental health hospitals to be utilised to integrate goals and objective for increasing psychiatrist availability Extend sponsorship of research
Criteria of success	They believe that it is critical to define success on the basis of development of human resources, teamwork, employee commitment, concern for people, efficiency, dependable delivery, smooth scheduling and low-cost production	Establish relationships of stakeholder, clinical communities and medical drug supplier Establish monitoring and evaluating on CSF target periodically

Table III The strategy recommendations for improving national culture

Characteristic of culture	*Current condition*	*Recommendations*
Masculinity/Femininity: Fewer men sharing in organisations occur if the personal base competition	Both are visible, but it is not seen significantly	Develop communities of practices on specific interest topics
Individualism/Collectivism: Directed in nature individualistic or group	Individualism more dominant than collectivism	Encourage KM processes and activities Provide and have the resources for facilities to improve and elaborate personal, and organisational knowledge
Power distance: Gaps that are caused by superior strength	The gap between senior and junior is very extreme	Strengthen scheduling presentation of cases regularly for sharing knowledge
Uncertainty avoidance: Feelings threatened by circumstances that are not clear	It is very high, and it caused a decline in interest in self-development and potential	Extend expertise networks, and collaborating within stakeholder Leverage of research Improve of professions and expertise Establish IT-minded

artefacts. It refers to the type of orientation and domains, whereas knowledge of modalities refers to media representation where it is located. The artefact is knowledge that enables the objects that can be captured and communicated freely, such as documents, medical records, e-mail, blog and workflow. This can be semi-structured, unstructured and structured. The descriptions of category resources are presented in Table IV.

Table IV List of resources and description

No.	Resources of knowledge	Description
1	Patient knowledge	The form of knowledge that contains a brief description concerning patient health status. It needs a clear and a complete picture of the health. It summarises the status of the patient and medical relationship between the various observations. The conclusions are drawn by the doctors, and are both captured and recorded in medical records
2	Psychiatrist knowledge	It is practiced and exercised related to tacit whilst discharging mental disorder. It can be obtained with reference to core domain knowledge of mental health care, and acquired through internships, active learning, experience and observation
3	Doctor knowledge	It is contained in practice, and can be exercised related to tacit whilst handling patient care. It can be obtained in regards to the core domains of healthcare, and acquired through internships, active learning, experience and observation
4	Nurse knowledge	The form is contained in practice, and can be exercised related to tacit whilst handling and discharging both mental disorders and patient care. It can be obtained respecting the core domain of mental health care, and acquired through internships, active learning, experience and observation
5	Medical supports	Medical support can be grouped into tools or devices/tools (laboratory, radiology, therapeutic tools, etc.) that can measure metric details, criteria and standards for the success of the healthcare process. Medical supports can help ensure MHKM achieve the expected results, and the resulting knowledge applied to MHKM system
6	Library	Documents, reports and a form of explicit evidence-based medical literature, reviews, case studies, clinical practice guidelines, etc.
7	SOP	It can be artefacts and a form of explicit knowledge, such as standard operating procedures, guidance on technique and practice
8	R&D	It can be an innovation and invention that contains rich knowledge (tacit, explicit and potential knowledge), which can be developed into a research and development activities on the needs of mental health services, such as research proposal, research log books, etc.

Enablers

The recommendations of the enablers were conducted through strengthen, weakness, opportunities and threaten (SWOT) and internal-external factors analysed, and compiled into CSF for the MHKM strategy. The enabler consists of the culture, organisation and stakeholders, measurement (law, ethics and policy) and IT. This composition refers to Holsapple (1999) by replacing elements of leadership with organisational stakeholder. The difference of OC lies on categories, whereas in enablers, relates to national culture. Some considerations for the enabler strategy are as noted in Table V.

Table V Strategic recommendations for improving the enablers

Category	Current condition	Recommendations
Culture: Organisational culture, and national culture	The current condition of OC is market type, whereas the preferred OC is clan. The characteristics of culture are very strong in power distance and uncertainty avoidance	Refer to OC and national culture
Organisation & Stakeholder: Governance and relationship between organisation and stakeholder	Organisational governance and relationship with stakeholders are not optimal. Coordination and cooperation between institutions have not awakened comprehensively	Optimizing the performance and functional organisation, stakeholder collaboration and cooperation in the development of mental health programmes
Measurement (Law, Ethics, Policy): Regulation of mental health that is declared by the State of RI	Mental health legislation was not fully implemented at the level of primary care Legal certainties regarding mental patients still weak	Improving legislation, regulation, law, act, rules, etc., regarding mental health Improving awareness of medical ethics that are followed by medical experts
Medical of Ethics of psychiatric The policies set up by the Ministry of Health	Medical ethics was not fully complied, and socialisation of mental health policy was not fully effective	Socialising mental health programmes extensively
IT: Infrastructure of IT and networks	Infrastructure of IT and network is limited	Improving the planning of KMS and IT infrastructure and networks

Critical success factors of MHKM

The SWOT was intended to get the perception of respondents to be the intellectual assets of an organisation. Strength resides in its owner's knowledge (skill, competence, professional, expertise and capabilities), which is also independent of the resources. The factors lead to strengthening an organisation in a competitive environment. The weakness was perceived to be obstacles to the knowledge owner that it can inhibit to achieve the goal. Opportunities can be done to improve the knowledge and reach the objective. In regards for the threats that become factors that threaten, they are potentially detrimental to the quality and value of the knowledge owner. While, the IF-EF are the organisational factors that can affect the quality as well as the value of intellectual assets.

The result shows that the human resources (people) and knowledge are the most significant appearances. People and knowledge are closely interconnected. Knowledge becomes an important part of the skill, competence and also power for people. Knowledge makes people be experts and professionals in their fields; however, there is a constraint and it is very difficult to develop the potential for knowledge because of time and cost. Although currently they can act based on competencies as an opportunity, the quantity or quality of expertise regeneration is very limited. This is because the educational facilities that spawned a generation of psychiatrists are limited, plus the lack of interest from general practitioners to specialise in medicine. Furthermore, the stigma of society is still high against mental disorders. The community is reluctant to seek treatment scientifically and prefers alternative medicine. Therefore, the ratio of the psychiatrists and the population is certainly increasingly not being met. This condition becomes more worrisome because of the fact that the number of senior psychiatrists is very dominant, and in time they will retire. Certainly, it is unfortunate if the knowledge owned by the experts is not managed properly or becomes the intellectual assets of an organisation.

Cultural organisation is located in the sense of family and appreciates each other between individuals. Moreover, weakness appears because of the remuneration gap (reward and punishment are not consistent and balanced) as well as the lack of opportunities to enhance formal education. In addition, there are gaps between seniors and juniors, as well as a lack of means and facilities of knowledge that lead to a cultural reluctance to increase knowledge sharing. In regards to their opportunity, culture can be better because the community can trust the mental health service. This condition can be constantly strived to let knowledge increase in service quality, despite the threat to visibility due to the stigma of society that can cause gaps in well-being. The doctor who has many patients will be different to one with minimal patients. Remuneration occurs when the basis of services will have an effect on the conflict and is mutually suspicious and the climate is not conducive. Some of them are working because of the motive of money, and the decline in discipline, loyalty and responsibility also emerged. Based on the frequency of context, human resources, management, services, competition and culture of cooperation have the highest ranks. IT becomes the average bottom sequence in each section. Currently, IT was not implemented optimally in support of business processes, as presented in Table VI.

Furthermore, the analysis of OC, resources, enablers and SWOT solution identifies ten issues to be CSFs of MHKM strategy implementation. The solution of SWOT can be equivalent to CSF (Al-Qirim, 2005 and Morrison, 2012). In general, the MHKM has 43 factors (Table VII) that can affect proportionally to the CSFs defined. For the validity of the triangulation method, the analysis of the factors conducted by SE (calculating the point that has near to zero is significant influence) and the IPA (investigating the relationship between application and importance). Both of the analyses became a consideration for the benchmarks of success (key success indicators).Using term factors refers to Becerra-Fernandez and Sabherwal (2010), Dubois and Wilkerson (2008), Green and Kaplan (2012) and Obaide (2004). All factors that affect the MHKM were categorised and divided into two groups (the current status for level of implementation as a measure of performance levels, and the level of interest in the organisation for measuring how

Table VI SWOT matrix and CSF strategy

	S (Strength) Business complex (physical, mental, rehabilitation, education, research) Riches of knowledge resources	*W (Weakness)* Organisational culture Reward & punishment R&D IT infrastructure
O (Opportunity) Varieties treatment/therapy Collaboration healthcare organisation	*SO* Create strong management of mental hospitals Management support, budget and commitment Coordinate pool resources between the ministry and organisation	*WO* Increase a knowledge culture for establishing knowledge-sharing environment Create reward systems effectually Improve IT infrastructure for advanced knowledge-based repositories Enrich facilities for research and development
T (Threat) Limited expert/academic Limited master apprentice Sponsorship/drug suppliers	*ST* Maintain network of clinical communities Extend relationships with medical drug suppliers	*WT* Enhance regulatory for training and education (master-apprentice)

important a factor had the degree of readiness to implement). All factors represent an influence of MHKM, which have no significant point among them (Table VII). The sub-criterion is a term that represented the node in process content analysed using the NVivo tools.

Subsequently, the results of IPA indicated the priority factors that will affect the MHKM application in the future. Based on analysis, there were 24 factors that should be maintained, and 19 have low priorities. In fact, all factors were very important to be considered to successfully have MHKM implementation. Therefore, all of the results were used to help a mental health organisation gain the strategy, establishment and plan of an MHKM initiative programme. The factors' influence helps to ensure that the essential issue is covered during applying strategy of MHKM.

Strategy of MHKM

The strategy is a guide to achieve the purpose of MHKM. Based on all of the tables, it helps to consider the key success indicators. This was analysed using ISM (CSFs) to depict the level of them as well as being conducted by Yadav and Barve (2015) and Luthra *et al.* (2015). The result is obtained on the diagram of the driving power and depending on power, as shown in Figure 3.

The diagram shows, 5 (creating reward systems effectually) has become autonomous. It is a strong or significant factor because of its position in driving power and dependence (Cluster I). Whereas 4, 7, 8 and 9 have a weakness on the driving power, but strong on dependence. It can be a form output (Cluster II). Next on Cluster III, 1 and 10 are not too strong in environmental systems. It is in a balanced position. Finally, in Cluster IV, numbers 2, 3 and 6 have a strong driving power, and became the foundation of the structural hierarchy of ISM (Figure 4). The driving powerless (IV) and weak dependence (II) will be associated with the CSFs that need a self-test and can make decisions. It can be summarised that management, coordination and IT must be given a priority to achieve the purpose of MHKM. It is related to a strong business need and the goal of an organisation that would drive the most successful KM projects (Greiner *et al.*, 2014).

According to WHO's KM strategy (WHO, 2005) and Figure 4, the CSFs were adopted and recommended into ten stages of MHKM strategy that are compulsory by the actions and the key success indicators (Appendix 2). This can be used to help the Indonesian Government to realise the programme for a KM initiative that was declared to be a national programme.

Table VII The sequence of influence factors by SE and status (IPA)

No.	*Code factors*	*Item sub-criteria*	*SE point*	*Status*
1	C23	Responsibility	0.023769447	M
2	C21	Vision	0.023617759	M
3	C36	Comfortable climate	0.023568373	M
4	C11	KM Awareness	0.023546678	M
5	C41	Functional Unit	0.023484266	M
6	C33	Appreciation	0.023461838	M
7	C63	Connection Availability	0.023461838	M
8	C22	Programme and Financial	0.023430619	M
9	C53	Mentoring and Coaching	0.023430443	M
10	C310	Caring	0.023416332	M
11	C13	KM Commitment	0.023414392	M
12	C61	Enabler for Knowledge Update	0.023411244	M
13	C35	Support	0.023397486	M
14	C51	Chief of Knowledge Officer	0.023397486	M
15	C28	Evaluation and Review	0.023388817	M
16	C24	Professional/Expertise	0.023373851	M
17	C14	KM Sharing	0.023371002	M
18	C39	Transfer of Knowledge	0.023331846	M
19	C37	Reusable and Discovery Knowledge	0.023316228	M
20	C64	Standard Operating Procedure	0.023294100	M
21	C25	Key Performance Index	0.023262704	M
22	C55	Team Work Attention	0.023258824	M
23	C44	Rotation/Mutation	0.023254944	M
24	C42	Formal Network	0.023237306	M
25	C62	24 Hour Service	0.023225135	L
26	C45	Ease of Resources Access	0.023192708	L
27	C65	Documentation	0.023174364	L
28	C52	Scanning Requirement of Knowledge	0.023168897	L
29	C12	KM Representation	0.0231581100	L
30	C30	Learning by doing	0.023147362	L
31	C66	Ease of Usefulness	0.023145586	L
32	C32	Well Known Sharing	0.023119686	L
33	C57	Tutorial Program	0.023093026	L
34	C38	Time for Creative	0.0230723200	L
35	C26	Guidance and Principle	0.023050368	L
36	C27	Initiative and Planning	0.023049459	L
37	C56	Mutual Aid	0.023040491	L
38	C29	Participation	0.023025648	L
39	C43	Community of Practice	0.022942979	L
40	C59	Adhoc Repository Unit	0.022932395	L
41	C54	Repository of Knowledge	0.022914934	L
42	C58	Critical Role of Management	0.022840448	L
43	C34	Best Practice Sharing	0.022808261	L

Notes: *N* = 149; Categories: C1 = Awareness & Commitment; C2 = Strategy; C3 = Culture; C4 = Structure; C5 = People; C6 = IT; M = Maintain–Keep the Good Work; L = Low Priority

Conclusion

Mental health care combines vast interdisciplinary knowledge. Therefore, it needs to be properly managed for expertise of knowledge into effective and efficient for improving the quality of life. The mental health organisation should be concerned of the influential factors in achieving the MHKM goal. It will need a strong effort to realise the MHKM initiative, especially on organisational and national cultures that were negatively correlated to KM. These ten stages of MHKM strategy implementation will help the organisation to focus on improving the potential of an MHKM initiative programme.

An analytical approach can be done using mixed-methods research, where the results will support each other to find the critical factors that can influence the strategy of KM implementation. This study will open a wide range of opportunities for KM concepts and practicality in developing countries, which have a great culture and differentiation of social environment to be aware of knowledge expertise. This can be initiated from a knowledge

Figure 3 CSFs on ISM diagram

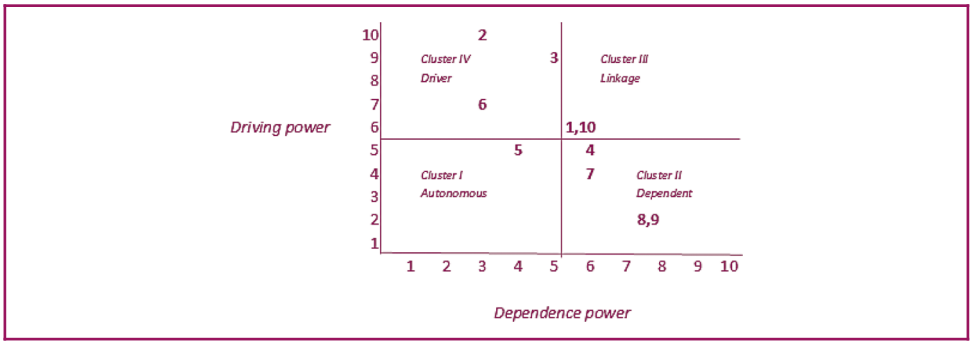
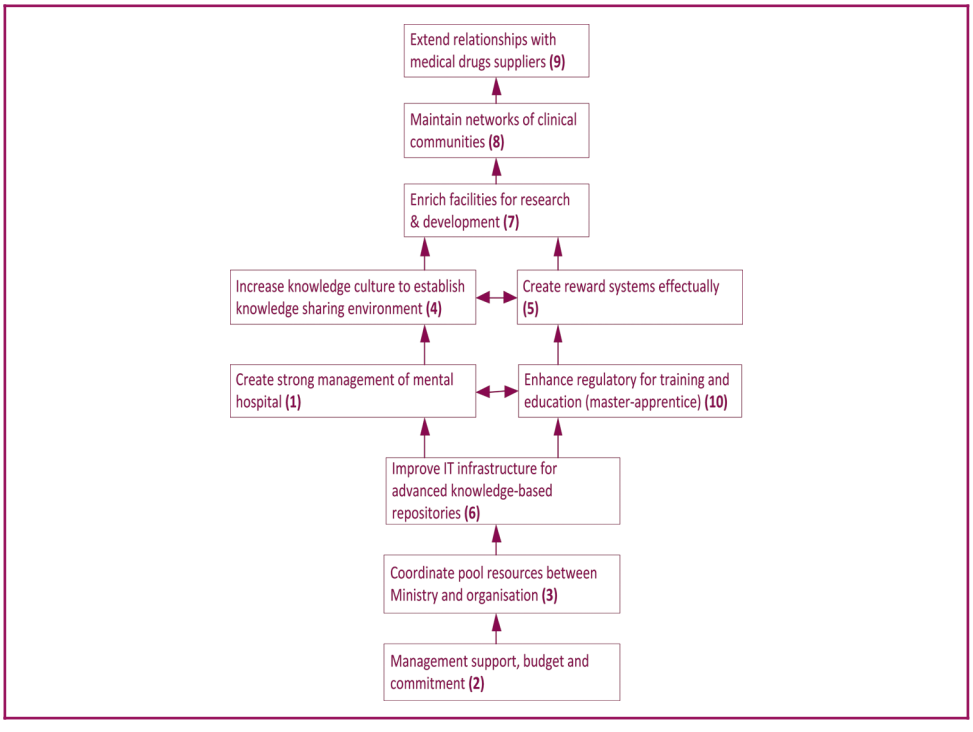


Figure 4 Relationship of strategies based on ISM



culture into knowledge sharing, which has individualistic and strong power distance. Furthermore, the reward system is the most crucial as an influential factor of success for the hierarchical type of OC in case there is no appreciation for their professionalism. It can be started and finished for such a circular between organisational to national culture or vice versa for MHKM success because the culture became a part of OC or national culture. Therefore, it is important to provide an MHKM framework that becomes tools (seminars, workshops, training programme), where a knowledge owner is encouraged to apply KM practice in improving the quality of life and providing mental healthcare services.

This research portrayed the condition of the mental health organisation in Indonesia that needs to realise the MHKM initiation programme. We believe there is a big challenge to apply the KM practice because of the obstacles in the organisation. We have not yet explored the object in 33 provinces comprehensively, and the government has dynamic regulations and policies. However, the government accepted the results and supported to consider the recommendation. Furthermore, we should advance this research in the future.

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Further reading

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Appendix 1

Table AI List of respondents and informants

	Data respondents (questionnaires)								Data informants (Interview)							
	Sex		Occupation			Age			Sex		Occupation			Age		
Object of RSJ	*M*	*F*	*D*	*N*	*O*	*<35*	*35-45*	*>45*	*M*	*F*	*D*	*N*	*O*	*<35*	*35-45*	*>45*
Grogol, DKI Jakarta	8	17	24	7	4	4	8	13	0	0	0	0	0	0	0	0
Cibubur, Jakarta	10	10	5	4	11	4	11	5	3	5	2	4	2	0	4	4
Bogor, Jawa Barat	19	19	7	26	5	0	17	21	6	1	7	0	0	0	4	3
Magelang, Jawa Tengah	26	25	13	35	3	10	22	19	8	13	9	12	0	5	11	5
Lawang, Jawa Timur	6	10	12	2	2	6	4	6	3	6	6	3	0	0	5	4
Depkes Pusat, Jakarta	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	3
Total	69	81	61	74	25	24	62	64	21	27	27	19	2	5	24	19

Notes: M = male; F = female; D = doctor (psychiatrist/general); N = nurse (psychiatric/general); O = other (laboratory assistant, pharmacy, nutrition and implementing medical support); A/P (academia/practitioner)

Table AII Demographic of expert participants

	Sex		Occupation			Age		
Location	*M*	*F*	*D*	*N*	*A/P*	*<35*	*35-45*	*>45*
FGD (confirmation and verification)								
Bogor, Jawa Barat	4	1	5	0	0	0	2	3
Magelang, Jawa Tengah	5	10	14	1	0	2	9	4
Lawang, Jawa Timur	0	0	0	0	0	0	0	0
Total	9	11	19	1	0	2	9	7
RTD (validation)								
DepKes, Jakarta	10	7	11	0	6	1	8	8

Notes: M = male; F = female; D = doctor (psychiatrist/general); N = nurse (psychiatric/general); O = other (laboratory assistant, pharmacy, nutrition and implementing medical support); A/P (academia/practitioner)

Appendix 2

Table AIII Key success indicators based on strategic implementation

No.	*MHKM strategy*	*Actions*	*Key success indicators*
1	Management support, budget, and commitment	Produce a national policy to strengthen the national health system through the implementation of MHKM Give full support to the organisation to improve a corporate governance Provide budget management authority, autonomous, transparent and accountable for flexibility and operational adaptability of mental health services Evaluate management commitment to quality mental health services, periodicals and measurable	Integrating the National Health System (NHS) via MHKM System (MHKMS) Achieving good governance of mental hospitals Achieving of accreditation of mental hospitals Achieving of standardisation of document and procedure for servicing mental health
2	Coordinate pool resources between the ministry and organisation	Produce a national policy to build management centre MHKM Resources between the ministries of covering areas: health, education, religion, labour, economics, socio-political, legal/crime and humanitarian/human rights, as well as stakeholders, and organisations concerned with mental health's three major groups, namely: national policymakers, WHO-Mental Atlas and health professionals that are both training and practicing, including academic, research community, governmental organisation (NGO), non-governmental organisations, private sector, donor agencies, medias, institutional development and community Coordinate between organisations and stakeholders to map the resource centre and knowledge assets that can be utilised in making important decisions in the preparation of programmes of mental health services in an integrated manner	Centralizing of MHKM Resources optimisation between ministries, stakeholders and organisations Decision making based on mapping of MHKM Resources
3	Improve IT infrastructure for advance knowledge-based repositories	Produce a national policy to build the IT infrastructure and MHKMS to facilitate access to knowledge-based repositories Develop a roadmap that supports MHKMS programme, according to the needs and conditions of the organisation, both short- and long-term Explore the functional potential of e-Health MHKM to support the national system of mental health services, through counselling evidence-based policies, monitor the trend of e-Health, identify the best practices, facilitate networking experts and promote the standard rules of the integration of IT through practice and training the mental health workforce.	Embedding the MHKM Process & Cycle on an organisation culture Leveraging of knowledge-based repositories for the benefits and the power of the organisation Implementing the Multilayer Functional System Architecture of MHKMS, and running well of e-Health MHKM
4	Create strong management of mental hospitals	Produce a national policy to build a strong organisational culture, in line with clan organisation's culture expectations to achieve the MHKM Goal Develop programmes to improve the quality of human resources in accordance with the needs of organisations, both academics and non-academic Evaluate the skills, competencies and capabilities of human resources and be measured periodically	Achieving the clan type of an organisation culture Enhancing the quality of knowledge owner and knowledge workers Enhancing the quality of leadership and management

(*continued*)

Table AIII

No.	*MHKM strategy*	*Actions*	*Key success indicators*
5	Enhance regulatory for training and education (master-apprentice)	Produce a national policy to develop the education and training of mental health (psychiatrists, nurses, medical support staff, volunteers, etc.) professionals to meet the ratio of mental health service needs Manage programmes for teaching hospitals (co-assistant) by opening psychiatric specialisation programmes to improve the quality of knowledge owners Evaluating the policy periodically to align the dynamics of development of the medical science of psychiatry	Increasing of regeneration of psychiatrists and other medical staff Improving quality of master-apprentice and specialisation of psychiatry programmes Growing of psychiatry
6	Create reward systems effectually	Produce a national policies reward system for mental health professionals Establish a reward system in a comprehensive, unified, scalable and objective way that can give the effect of culture on increasing knowledge culture and improving the quality of a knowledge-sharing environment Explore the potential functional reward systems that can be applied in general Audit and evaluate the reward systems periodically	Reducing of a knowledge gap Reducing of resistance of MHKM programme Improving of knowledge culture, especially in knowledge sharing Improving organisational culture
7	Increase knowledge a culture for establishing knowledge sharing environment	Produce a national policy to develop the programmes of MHKM to improve the knowledge culture Establish an environment of mutual trust and maintain harmony as the basis for the establishment of knowledge sharing. Appreciate the knowledge owner who manages to build a CoP with extensive networks and maintain its existence Conduct a mechanism MHKM (mailing list, chat, broadcasting, memo, bulletin boards, document management system, etc.) through IT and MHKMS optimally	Increasing of people's trust in each other Improving a knowledge culture and knowledge-sharing environment Growing of the CoP in existence Increasing literacy of IT-minded
8	Enrich facilities for research and development	Produce a national policy to develop the programmes of R&D facilities that are unified and integrated using MHKMS Develop programmes of research priorities to the needs of the national mental healthcare system Manage and encourage functional psychiatrists to conduct R&D through evaluation and periodic monitoring Provide the support for knowledge owners to conduct R&D in local, national and international Appreciate the owner's knowledge who successfully performs R&D of both national and international	Increasing of R&D globally and regionally Running well of R&D programme Growing of innovation, best practice and evidence-based medical treatment of mental healthcare Growing of collaboration for R&D in mental health care Increasing of international and national publications
9	Maintain networks of clinical communities	Produce a national policy to improve the CoP on the mental health field Draw up a programme for the relation-interlink, expand, facilitate and maintain networks among CoP optimally through MHKMS	Growing of CoP extensively Accommodating and coordinating of CoP via MHKMS

(*continued*)

Table AIII

No.	*MHKM strategy*	*Actions*	*Key success indicators*
10	Extend relationships with medical drug suppliers	Produce a national policy for expanding of cooperation between countries, organisations and stakeholders in the field of medical technology, medical equipment and drug suppliers Offer a cooperation programme to the manufacturers, suppliers of medicines and medical devices openly and transparently through MHKMS Build and provide information services and electronic products that are relevant regionally and globally, high-quality and timely through the document repository, database statistics, library materials and materials, as well as access to other electronic products, both on the resources and knowledge-based formats, and the language being required	Extending of collaboration and cooperation between organisations and stakeholder of medical drug suppliers Running well on e-cataloguing for better clinical knowledge

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