

General Practitioners' Attitudes toward Traditional Indonesian Herbal Medicine and Integrative Care in the Universal Health Coverage System

Yen Yen Sally Rahayu¹, Tetsuya Araki¹, Dian Rosleine² & Raissa Manika Purwaningtyas³

¹ Department of Global Agricultural Sciences, Graduate School of Agricultural and Life Sciences, The University of Tokyo, Japan

² Ecology Research Group, School of Life Sciences and Technology, Institut Teknologi Bandung, Indonesia

³ Midwifery Study Program, Faculty of Medicine, Universitas Airlangga, Indonesia

Correspondence: Yen Yen Sally Rahayu, Department of Global Agricultural Sciences, Graduate School of Agricultural and Life Sciences, The University of Tokyo, 1-1-1 Yayoi Bunkyo Ward Tokyo 113-8657, Japan. E-mail: yenyenrahayu@gmail.com, ysrahayu@g.ecc.u-tokyo.ac.jp

Received: February 18, 2022 Accepted: March 22, 2022 Online Published: March 25, 2022

doi:10.5539/gjhs.v14n4p82

URL: <https://doi.org/10.5539/gjhs.v14n4p82>

Abstract

Implementation of the Universal Health Coverage (UHC) in Indonesia has created renewed momentum for integrating traditional Indonesian herbal medicine (TIHM) in healthcare delivery under the national health insurance program (NHI). At present, little is known about the attitudes of conventional healthcare practitioners towards the clinical use of TIHM. This study aimed to explore the attitudes of general practitioners (GPs) towards TIHM use in conventional care and their perception of the integration of TIHM in the NHI. A total of 30 GPs from 28 conventional health facilities were purposively selected to participate in the study. Both quantitative and qualitative data were collected through administered-questionnaire and interviews. The majority of participating GPs demonstrated a favourable view towards TIHM role in conventional care and the potential integration of TIHM under the NHI. Being used as an adjunct therapy in the conventional treatment of chronic diseases, including degenerative disease and metabolic syndrome, and in palliative care, seemed to be the most promising areas to emphasize TIHM role in conventional care in the anticipated integration. However, only a few GPs had formally prescribed TIHM to their patient. The barriers of TIHM use in their practice include knowledge gap, unclear regulatory procedure, unreliable provision of TIHM and exclusion of TIHM in the NHI. While the GPs accepted the idea of integrative care under the NHI, to achieve an institutional integration, their knowledge base in TIHM must be improved while also addressing regulation, development of TIHM's formal list, and issues of safety of TIHM to ensure evidence-based practice.

Keywords: attitude, integrative care, Indonesia, Universal Health Coverage (UHC)

1. Introduction

Traditional, complementary, and alternative medicine (TCAM) is a form of primary health care that is culturally embedded in the daily health-seeking behaviours of populations in many parts of the world, particularly in African, Asian, and Pacific nations (Park & Canaway, 2019). The prevalence of TCAM has progressively increased over the years, and it varies among and within countries attributable to socio-economic and cultural factors (Harris & Rees, 2000). It was reported that 9% to 76% of the general population in developing countries frequently utilised TCAM for primary healthcare (Pengpid & Peltzer, 2018). For these countries, availability, accessibility and affordability are primary reasons behind the pervasive use of TCAM, particularly for rural populations. In Indonesia, TCAM use continues to be ubiquitous, despite the increasing provision of healthcare services (Elfahmi et al., 2014; Rahayu et al., 2020). The predominant practice of TCAM in Indonesia is based on the use of local herbal medicine — the traditional Indonesian herbal medicine (TIHM) (Rahayu et al., 2021), and it has increased in recent years (Rahayu et al., 2020). The national survey reported that 44.3% of Indonesian households utilised TCAM; out of these, 79.8% used TIHM (Menkes RI, 2018).

Traditional healthcare has been incorporated into the Indonesian health policy since the issuance of the law on health in the 90's when it first gained formal recognition as one of the national healthcare systems (Presiden RI,

2009). It has served as a foundation for the Indonesian government to develop regulations and strategies to maximize the potential contribution of TCAM products and practices to public health care. It reached an important milestone when the Ministry of Health issued the National Policy of Traditional Medicines (KONTRANAS), envisaging a cross-sectoral guideline covering various aspects of TIHM development from cultivation and conservation, research and development, monitoring and supervision to industrialization and commercialization (Menkes RI, 2007). Furthermore, research institutions and other relevant bodies have been set up to ensure evidence-based TIHM products and practices. In 1975, the Institute of Healthcare Research and Development/IHRD (Balitbangkes) was established to address quality and safety issues in TIHM use by scientifically validating the therapeutic effects of herbal preparations. The National Agency of Drug and Food Control/NADFC (BPOM) was formed later in 2001 to administer control and supervision of TIHM. Based on the preparation method and verification of its efficacy, NADFC classified TIHM into three categories, i.e., *jamu*, standardized herbal medicines (OHT), and phytomedicines (*fitofarmaka*/FF). While the efficacy of OHT and FF has been proved in pre-clinical and clinical trials, the therapeutic effects of *jamu* are only supported by empirical data. Of 13,462 TIHM products officially registered at NADFC, there are only 87 that are classified as standardized products (62 OHTs and 25 FFs) (BPOM RI, 2020). In 2010, as an initial step towards integrating TIHM in the national healthcare system, IHRD, through the Center for Research and Development of Medicinal Plants and Traditional Medicines (B2P2OOT), introduced the 'Jamu Scientific' (*Saintifikasi Jamu*) program to develop scientific evidence of TIHM (*jamu*) through service-based research in flagship healthcare facilities (Menkes RI, 2010). Recent integration policy in Indonesia has been aligned with the WHO strategy for traditional healthcare, which includes the establishment of the Directorate of Traditional Healthcare Services/DTHS (Dirjen Yankestrad) that oversees the practice of traditional healthcare providers (Menkes RI, 2015; WHO, 2002, 2013). The provision of traditional healthcare in the national healthcare delivery, TIHM included, has been promoted based on the 'Strategic Plan' (*Rencana Strategis*) (Menkes RI, 2017).

Despite the increasing collaboration between traditional and conventional healthcare, TCAM remains poorly integrated with the national healthcare system (Siswanto, 2018). The practice of TIHM use in healthcare delivery services in Indonesia is lower than that of herbal medicines in other countries (Widowati et al., 2012). The provision of TIHM in public health facilities has been progressing at a slow pace. Currently, approximately 50% of primary healthcare facilities provide TIHM, 25% lower than the targeted plan of 75% (Menkes RI, 2020). Many programs aiming to promote the integration of the two healthcare systems are yet to achieve their objective. For instance, the adoption of the 'Jamu Scientific' program is only limited to a certain region of central Java (Kristiana et al., 2017). Other issues include the lack of standard medicinal plants required for TIHM preparation in the facilities. Moreover, the traditional healthcare system receives less government support and funding and is inadequately considered under the national health insurance program.

The attitudes toward TCAM use differ among medical health professionals (Gyasi et al., 2017; Kwan et al., 2006). A study reported that 41% of medical doctors in Nigeria believed that herbal medicine could be effective for some chronic diseases, but it could only be effective as a complementary medicine (Awodele et al., 2012). In Japan, doctors' perceptions and attitudes towards *Kampo* medicines (traditional Japanese medicines) varied tremendously depending on the speciality, with higher usage and a more positive perception of *Kampo* among obstetrics/gynaecology specialists (Moschik et al., 2012). On the other hand, many conventional medicine practitioners often stigmatised TCAM practices with derogatory labels that may hinder collaboration towards integration, such as 'unconventional', 'alternative', and 'unproven' (Jafari et al., 2021; Pengpid & Peltzer, 2018). Furthermore, a few studies indicated that although some health workers possessed personal experience with TCAM, they were less likely to recommend it to patients (Boateng et al., 2016; Bodeker, 2001). These reports suggest that conventional healthcare practitioners' attitudes towards TCAM mainly controlled their preference for integration.

The adoption of the UHC system in Indonesia was realised with the introduction of the universal health insurance program—*Jaminan Kesehatan Nasional/JKN* (National Health Insurance/NHI)—in 2014. However, TIHM is not reimbursed under the insurance program. There has been a great deal of discourse among multi-government agencies to incorporate TIHM in the NHI, but the discussions lack a perspective of conventional healthcare practitioners (Kristiana et al., 2017; Widowati et al., 2020). The attitudes of conventional healthcare practitioners towards TCAM largely determined the degree to which TCAM and conventional medicine can be integrated (Kretchy et al., 2016) and may significantly impact the implementation of policies and strategies. Therefore, it is essential to understand the extent to which conventional healthcare practitioners support the clinical use of TIHM. This study aimed to fill this gap by exploring the attitudes of general practitioners (GPs) towards TIHM use in conventional care and their perception of the integration of TIHM in the NHI. The barriers to the clinical use of

TIHM were presented. The findings from this study will provide policy relevance, with implications for professional training, regulatory procedure, and clinical practice.

2. Method

2.1 Selection of Participants

The present study is part of a larger study employing a cross-sectional mixed-method design to examine TIHM use at the community and institutional level in the UHC system in Indonesia. Data for this paper drew on findings from the part that explored institutional use of TIHM by examining the attitudes of conventional healthcare practitioners, particularly GPs. A total of 30 GPs were purposively selected to participate in the study. For the responses to be in line with study objectives, the participants were selected with the criteria: 1) GP practising in a conventional (non-traditional) health facility, and 2) those of no. 1 criterion who have been practising for at least one year. The participants were chosen from 28 healthcare facilities in 14 cities in seven provinces of Indonesia to maximise the variation in the number of years in practice and represent the major cities in Indonesia. In addition, in-depth individual interviews were conducted with three GPs involved in the research and advocacy of TIHM (*jamu*) to obtain insight into their activities related to TIHM. In this paper, a conventional healthcare facility was defined as a healthcare facility wherein the service is based on conventional (non-traditional) medication by a doctor—not a traditional healthcare practitioner. The term conventional medication was used interchangeably for conventional treatment or conventional medicine and included biomedicine/drugs.

2.2 Data Collection and Analysis

The data were collected between January and September 2021. We conducted a pilot study involving four GPs to assess the validity and appropriateness of the interview guide. The pilot study allowed some aspects to be included or excluded in the study guide following questions from the participants. The questionnaire was modified from a study about the perception of conventional healthcare practitioners on integrative medicine (Kretchy et al., 2016). Before starting the interview, participants were informed about the purpose of the study, procedures and their rights, and all participants provided verbal and written informed consent.

The questionnaire comprising closed-ended questions was used to gather basic information (age, gender, years of practice, and practice facility) and characteristics of participants related to their TIHM use, including the level of knowledge on TIHM and its regulatory, sources of knowledge, and the experience of using THIM. Four questions with a Likert scale were also included to assess their perceptions about aspects of THIM, including efficacy, safety, and its role in conventional care and integration of TIHM under the NHI program. Subsequently, these four aspects measured by the Likert scale were used as the topics to guide the interview to obtain further detail on participants' perceptions and attitudes towards TIHM, its use related to their practice, and its integration in the NHI.

Questions related to the barrier of using TIHM were asked to the participants who had never used TIHM or had only given an informal recommendation to the patient. A thematic analysis was used to identify the themes of barriers emerging from participants' comments. The responses were coded before grouping into themes, summarised, and further analysed. The results from the interview, including the attitudes toward TIHM and its practice, its integration, and barriers of clinical use of TIHM, was analysed based on the inductive approach of grounded theory, a method that generates theory during the process of conducting research (Glaser & Strauss, 1967). To improve the reliability of the analysis, two co-authors analysed the result of interviews independently and then discussed each categorisation with all authors until reaching a consensus. The interviews were conducted online individually and lasted 30 to 40 minutes. To ensure the participants' privacy, confidentiality and their information, each participant was anonymised and identified by a unique ID, which has been used in the presentation of the results. The interviews were recorded and transcribed. All interviews were digitally recorded and transcribed in English. This study was approved by the health research ethics committee of the Ministry of Health, Bandung Health Polytechnic, Indonesia (No.01/KEPK/EC/V/2021).

3. Results

The interviews were conducted among 30 GPs practised in various conventional healthcare facilities with 7.3 average years of practice. The ages of participants ranged from 25 to 55 years, with the majority falling between the ages 25 and 38. There were more females ($n = 26$) than males ($n = 4$). The majority of participants work in the hospital ($n = 16$), followed by private clinics ($n = 10$), and a few of them work in a community health centre ($n = 4$). GPs' characteristics and questions with Likert scale responses were summarized by frequency distributions (Table 1 and Figure 1).

Table 1. Characteristics of general practitioners interviewed about their knowledge and clinical use of TIHM (n=30).

Characteristics	Sample size (%)	
Self-assessed knowledge on TIHM		
Knowledgeable	6	(20)
Somewhat knowledgeable	14	(47)
Not knowledgeable	10	(33)
Source of knowledge		
Formal education	7	(35)
External training	4	(20)
Self-learn (family, readings)	15	(75)
Knowing regulation on TIHM practice		
Yes	7	(23)
No	23	(77)
Experience in using TIHM in formal practice		
Informal recommendation	8	(27)
Formal prescription	5	(17)
Never	17	(57)

3.1 Characteristics of Participants

Characteristics of participating GPs were organized into three aspects: knowledge of TIHM, knowledge of the regulatory procedure of TIHM practice, the experience of clinical use of TIHM (Table 1).

Based on the participants' self-assessment, the majority (n = 24) reported an average to no knowledge about TIHM. Nonetheless, all of them are familiar with the self-prepared TIHM (*jamu*). Those who evaluated themselves as 'knowledgeable' (n = 6) reported had received formal education regarding TIHM. Most participants had no formal training on TIHM, and knowledge mainly was acquired through self-learning (n = 15), such as from their readings and family tradition. Of those who received training (n = 11), seven were introduced to the knowledge as part of curricula of their formal education, and four through their participation in training programs held by government institutions. The majority of participants (n = 23) did not acknowledge the regulation related to practising TIHM in a conventional healthcare facility. A little over half of the participants (57%, n = 17) never use TIHM in their practice. While 27% of them have experience recommending TIHM informally and 17% of them had formally prescribed it to their patients.

3.2 Attitudes towards TIHM

A total of four topics were developed to guide the interview on the attitudes of GPs towards TIHM and its integration in conventional care under the NHI program (Fig. 1.).

Overall, participants demonstrated a favourable view towards TIHM role in conventional care. Participants had varied opinions, but they agreed on several notions regarding the efficacy of TIHM: 1) it is effective in treating ailments in their early development stage, 2) its usage is effective in preventive and promotive health purposes, and rehabilitative care 3) it is effective as complementary (not a substitute) to conventional medicine in curative therapy. When further asked about clinical usage of TIHM, more participants favour the adjunct utilization (n = 22) than those of the sole use of TIHM (n = 6). It was elaborated that TIHM is particularly effective in treating degenerative disease, metabolic syndrome, and palliative care.

In curative therapy, herbal is effective to treat mild illnesses such as mild hypertension, mild hyperuricemia, mild diabetes, mild hypercholesterolemia, but for a severe case, it can be used as a complementary therapy to support conventional treatment. (ID 30)

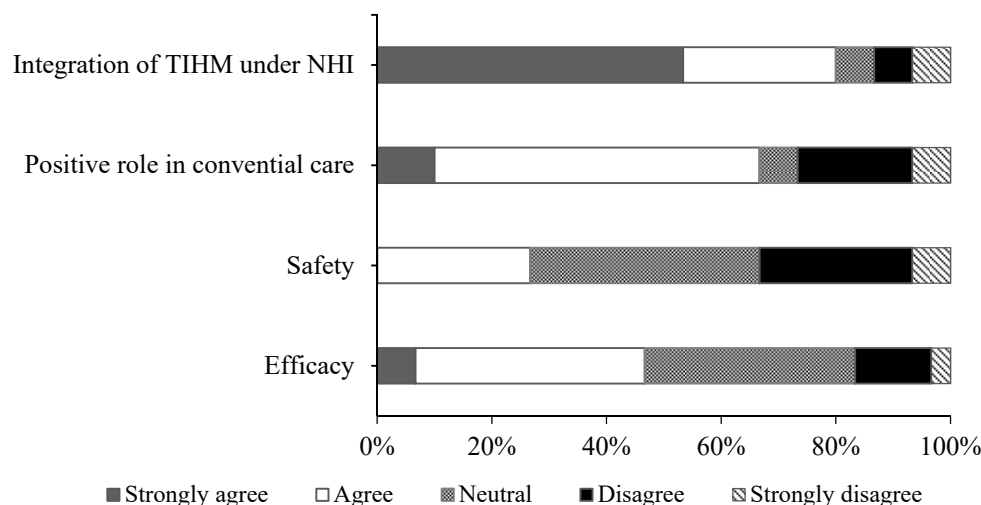


Figure 1. Attitudes towards TIHM aspects and its integration under the NHI

Most unfavourable attitudes towards TIHM were associated with concern regarding its safety. While it was widely perceived that TIHM generally shows fewer side effects or adverse reactions, most of them also acknowledged that no medicine is without side effects or entirely safe for long-term use.

For long-term use (treatment), herbal medicine is relatively safer than drugs, as long as it [herbal medicine] is used rationally. (ID 4)

Participants also reported some negative attributes to TIHM in healthcare service delivery, such as promoting non-adherence to conventional treatment and the main reason for the delay in help-seeking behaviour among patients with conditions that need immediate care. This delay often led to most likely preventable complications.

Indeed, some TIHM have a positive role in supporting conventional therapies, but sometimes information on the interaction between TIHM and [biomedicine] drug is unclear. It would be better if we could easily know such information. Sometimes patients focus on herbal use, neglect conventional therapy, and are reluctant to check their (chronic) illness routinely. Some alternative [therapy] could also hamper the treatment of conventional therapy, for instance, in a cancer patient who does consultation [with a doctor] when it is too late and a patient with a bone fracture who had inappropriate treatment from a bonesetter. (ID 12)

In this respect, participants had a consensus regarding the importance of rational use of TIHM and their preference of the standardized type over the self-prepared one—*jamu*.

3.3 Attitudes towards Integrating TIHM in the NHI

The majority of participants also showed positive attitudes for integration of TIHM in conventional care within the NHI program (Fig. 1). They supported the call for expanding NHI payment coverage to include TIHM. Among the most frequently mentioned reason for their support was demand from patients.

In some cases, the patients interested in using TIHM instead [of biomedicine], we should get it listed on the NHI's medicine list, so they will have the treatment they want without having to pay again. (ID 24)

It was also suggested that the integration could facilitate effective service delivery by negating the irrational use of and ensuring a reliable TIHM.

I support integration as it will help streamline the rational use of herbal medicines. (ID 25)

I think it [integration] will be good for the TIHM system to help eliminate fraud, like fake jamu that spiked with chemical. (ID19)

The opinion that 'some cases are better to be treated with TIHM' was another popular reason.

While the cases of irrational use of TIHM exist, the cases of misappropriate use of [biomedicine] drug also happen. Many people use drugs not according to its indication, the conditions which should be given TIHM instead. Something like these can be eliminated if TIHM can be integrated into our practice to ensure rational use of TM while reducing patient dependency on drug. (ID 5)

Generally, participants recognized that each mode of healthcare has its own advantage, and conventional medicine does not have the solution to all our healthcare needs. Thus, it is necessary to consider alternative forms to complement the conventional practice. However, aside from supportive views, the exact reason for the negative attitudes toward TIHM, concern regarding the safety of TIHM was also the reason for participants' disfavour or doubt of integration under the NHI. Participants discussed how the issue was about safety more than efficacy in some cases. They agreed to better documentation on the safety of the unstandardized TIHM and emphasized the necessity for more extensive research to provide more scientific evidence and standardized products.

Before integrating this mode [TIHM] in the mainstream practice, we have to look at the safety issue, because, unlike biomedicines that has been undergone a standardized trial, not all TIHM, especially jamu [unstandardized TIHM], have this safety information, so supporters of this integration must take steps to ensure patient safety. (ID 29)

3.4 Barriers of Use of TIHM in the Conventional Healthcare Setting

Overall, TIHM was infrequently used among the participating GPs. Table 1 showed that only a small number of participants actually practised TIHM (n = 5). A total of 17 participants who never used TIHM or had only given an informal recommendation to patients had provided comments on the barrier of using TCAM. A thematic analysis of comments identified four themes: knowledge gap, uncertainty on regulatory procedures, unreliable TIHM provision, and exclusion of TIHM in the NHI program, which are further examined below.

3.4.1 Lack of Knowledge Base on TIHM

The participants often mentioned their lack of knowledge of TIHM as the major barrier to their professional use of TIHM. It appeared that TIHM use was unpopular among these GPs because they did not know much about it. The most common explanations, such as 'I do not know about herbal medicine,' 'I am not confident,' and 'I am not sure with its safety and efficacy,' suggest that their reservation recommending TIHM to their patients stems from their lack of confidence in its use, in particular for curative purpose. Participants also described the lack of advocacy of TIHM use.

Public is not the only one who needs to be familiarized with the information of TIHM, we also need support from the TIHM advocacy associations to obtain information that we cannot access, especially on mediating TIHM use in our practice. (ID 1)

3.4.2 Uncertainty on the Regulation of Clinical Use of TIHM Use

Lack of knowledge on a legal basis in practising TIHM in a conventional healthcare facility was also frequently mentioned as the reason for hesitation in using TIHM to a patient. Although some of the participants were aware of the existence of statutory bodies to help streamline and regulate TIHM practice in Indonesia, most of them were unsure or had no knowledge regarding regulatory procedures to use TIHM in conventional healthcare practice.

Is there any regulation? I'm not sure know about that, so in case the patients demand [TIHM], and I think [TIHM] suitable for their problem, I usually recommend [the patients] the standardized TIHM, or ask them to prepare it by themselves from fresh herbs, to ensure the safety. (ID 31)

I know that herbal have been recognized in the healthcare system in Indonesia. There is also common knowledge among doctors allowing the prescription of TIHM but limited to the standardized products. However, as far as I know, the regulations for TIHM services for medical personnel (doctors) have not been made yet. It makes us uncertain in prescribing herbal medicines. (ID 17)

Only 23% acknowledge legislations of TIHM practice (Ministerial Decree No.121/2008 on standard service herbal medic), and all of them had TIHM training and or had attended seminars advocating in TIHM practice. Nonetheless, all participants agreed that current regulations on TIHM use in clinical practice are outdated.

3.4.3 Unreliable Provision of THIM in the Health Facilities

The lack of provision of TIHM was mentioned as one of the barriers by participants practising at primary healthcare facilities.

Even if I want to [use TIHM] or the patient asked for it, oftentimes we don't have the stock [of TIHM] (ID 6).

It was widely implied that allocation of the budget for expenses related to TM provision by primary care facilities is low and that the facilities prioritize the procurement of biomedical drugs covered by the NHI.

It is not uncommon that we run out of stock of THIM [in the HF], because sometimes no budget left to purchase it [TIHM]. (ID 2)

In the facility where I work, the drug is always the priority over the TIHM because it is paid (by the NHI), so the patient will choose drugs. (ID 10)

Regarding the standardized TIHM products (i.e., OHT and FF), the participants elaborated that a poor marketing strategy of the manufacture in promoting TIHM to health facility authorities hampered its procurement.

Unlike for drugs, the sales representative for THIM rarely comes, so TIHM shortage frequently happens in the clinic. (ID 25)

3.4.5 Exclusion of TIHM in the NHI Payment System

It is worth noting that all participants agreed that the fact that the NHI scheme does not cover TIHM reserved them to use it in their clinical practice. This reservation was seen to stem from the concern over the out-of-pocket burden for the patient.

In some cases, the patients interested in using herbal medicine instead [of drug], we should get the herbal medicines listed on the NHI's medicine list, so they will have the treatment they want without having to pay again. (ID 31)

The patients know that they need to pay out of their pocket if we give them THIM, and recently they often asked me if there is a chance that the insurance can reimburse their herbal prescription. I wish NHI can cover at least the standardized herbal medicine. (ID 30)

4. Discussion

The majority of participating GPs demonstrated a positive view towards TIHM in conventional care. Generally, they agreed that TIHM is effective for disease prevention, rehabilitation, health promotion and an adjuvant to conventional medicine in curative therapy. Interest, attitude, and positive behaviour towards TCAM could indicate their preparedness to accept its integration into conventional practice (Gyasi et al., 2017; Jafari et al., 2021). We also found that the integration of TIHM under the NHI program received almost all positive responses from the participants, with evidence suggesting that integrating the two systems would improve care delivery by supplementing the shortcomings of conventional care (Kristiana et al., 2017; Widowati et al., 2020). For example, Widowati et al. (2020) reported that implementing TIHM and acupuncture as complementary therapy led to faster recovery patients: reducing the in-patient period and visitation of out-patients. Similarly, evidence suggested that traditional Chinese medicine and acupoint massage demonstrated positive results in the alleviating functional constipation among schizophrenia patients in China (Ye et al., 2020). Notably, GPs in this study were more inclined toward adjunct use of TIHM than TIHM alone. This attitude aligns with the current situation of TIHM utilisation. Albeit the gold standard for evaluating TCAM therapies is a randomised controlled trial, TCAM practitioners commonly use combination TCAM treatment (TCAM and conventional therapies) instead of one TCAM therapy alone (Ye et al., 2020). Although scanty reports verifying the effectiveness of sole use of TCAM in curative treatment, many studies found that TCAM might enhance the efficacy of biomedicine when applied as adjunct treatments (Thirthalli et al., 2016; Ye et al., 2020; Zulkarnain & Triyono, 2017). Accordingly, most GPs in this study agreed that THIM is effective as complementary to the long-term conventional treatment of non-communicable diseases, including degenerative disease and metabolic syndrome, and in palliative care. This finding indicates that the anticipated integration should focus on using TIHM as an adjunct or complementary treatment to optimise the effectiveness of conventional care.

Despite the generally favourable view towards TIHM in conventional care, only a few of participating GPs actually practised. Among 30 participants, 17 never used TIHM in their practice because they did not know about TIHM and or how its practice is mediated in the health facility. The thematic analysis result demonstrated that participants' lack of confidence in TIHM use stems from lack of knowledge, extended to their unwillingness to recommend them to their patients. Previous studies involving conventional healthcare professionals had also mentioned the barrier due to lack of knowledge (Boateng et al., 2016; Gyasi et al., 2017; Liu et al., 2021). The fact that all of the knowledgeable participants had taken a TIHM course during their biomedical studies indicates that a lack of formal training of TIHM may contribute to the low self-rated knowledge. It should be noted that the GPs' enrolment in the TIHM course was not mandatory; to this date, TIHM is taught as an elective course. A similar situation was reported in other countries such as Ghana, Saudi Arabia, and New Zealand, whereby the lack of TCAM curricula of their academic training contributed to insufficient knowledge of TCAM of healthcare professionals (Albedah et al., 2012; Kretchy et al., 2016; Liu et al., 2021). Another identified barrier within the spectrum of knowledge gap was little knowledge of the regulatory procedure of TIHM practice, which has also been reported in the previous studies (Gyasi, 2018; Kretchy et al., 2016). In addition to a formal education or training program, the aspect regarding the regulation and how TCAM is mediated within the national healthcare

system can be obtained through advocacy activities (Ye et al., 2020), which the participants perceived to be lacking. This observation is consistent with a recent report that advocacies and training programs of TIHM for conventional healthcare practitioners in Indonesia were insufficiently disseminated (Siswanto, 2018). These two barriers point toward one direction: lack of TIHM emphasis in the academic training programs of a medical practitioner. This suggests that TIHM education should be given more portion than it is now to improve medical practitioners' knowledge base.

For decades, integration of traditional and conventional medicine has been evident in medical education in the People's Republic of China, Japan and the Republic of Korea and has been growing in developing countries such as India and Cuba (Dresang et al., 2005; Park et al., 2012; Robinson, 2006; Sharma, 2001). It is suggested in the national Indian Systems of Medicine (ISM) policy that the ISM education system should be thoroughly reformed and that graduates of modern medicine should be taught the principles of ISM, including Ayurveda and Yoga (Sharma, 2001). Additionally, a survey among medical practitioners in Australia concluded that the inclusion of TCAM in the education of junior doctors might improve patient safety and management (Pierantozzi et al., 2013). However, Brinkhaus et al. (2011) found a limited integration of TCAM into curricula in the education systems of medical schools in South Africa, Austria, and Switzerland, despite the emphasis on training. Although the association between the training and practice of TCAM remains uncertain, surveys among medical practitioners showed that formal TCAM education programs provided by the government are a preferred approach to promote TCAM service (Chung et al., 2011; Moschik et al., 2012). The present study adds that advocacy on the clinical use of TIHM among medical practitioners is another fundamental approach to enhance understanding of TIHM practice's regulatory aspect in a conventional healthcare facility.

The barrier due to little knowledge on the mediation of TIHM practice in a healthcare facility also indicates that the current regulatory procedure was widely perceived to be unclear. While legislation to regulate traditional healthcare practitioners and providers exists in Indonesia, there has not been any detailed guideline regulating TIHM practice by conventional healthcare practitioners. A comparable situation is also shown in other Asian countries 'in-process' of developing integration like Malaysia and Cambodia (Abuduli & Aljunid, 2011; Clarke et al., 2016). The participating GPs mentioned that the lack of guidelines on internal prescription for TIHM had held them back in prescribing or recommending it for patients even when they knew that TIHM would be more effective in treating the health problem. Currently, Ministerial Decree No.121/2008 is the closest thing to providing a standard of TIHM service by a conventional health practitioner, which was not widely known and perceived to be outdated. The participants desired that TIHM practice in conventional healthcare facilities could be properly and clearly regulated. In Japan, where (western medical-educated) medical practitioners may practise the traditional Japanese *Kampo* under the law, more than 70% of doctors are using *Kampo* medicine in their daily practice together with modern medical treatments (Moschik et al., 2012). Similarly, TCAM practice in the conventional setting is clearly regulated in Germany; a physician can practice TCAM but must hold the corresponding CAM qualification for reimbursement by public health insurance (Joos et al., 2011). As a result, physicians in Germany used many TCAM modalities in their practice, including neural therapy, phytotherapy, and acupuncture (Stange et al., 2008).

Despite a global expectation for integration of TCAM into mainstream practice, particularly for resources limited regions, the integration process in Indonesia has not been optimal (Suharmiati et al., 2018). The barriers due to unreliable provision and exclusion of TIHM in the NHI payment system suggest that GPs want to use TIHM but often refrain from using it due to these factors. Correspondingly, Thirthalli et al. (2016) reported that psychiatrists in India, to some extent, prefer conventional treatments to reduce the patients' financial burden of the patients. In general, the cost of TCAM therapies in LMICs is not fully covered by public medical insurance or commercial schemes (Ye et al., 2020). In the NHI program, the provision of TIHM in a primary healthcare facility is admissible and can be covered through the capitation payment mechanism (Mboi, 2015). However, the participating GPs mentioned that the procedure is complicated because it requires particular circumstances (i.e., when the needed drug is out of stock). Additionally, approval from the head of the health facility is also required (Handayani et al., 2018). Although the capitation payment system has lowered the medical and administrative expenditures of the providers, a lack of sufficient understanding of the system among the providers may have resulted in technical capacity constraints in the implementation (Jing et al., 2016). Moreover, a primary healthcare facility in Indonesia commonly allocated the largest portion of capitation fund for medical workers' service payment and much less for supporting its daily operations, including the provision of TIHM products (Budiarto, 2015). This situation was also implied in our observation. The lack of TIHM provision impedes TIHM use by GPs even further. These reports and our findings indicate that the current procurement of TIHM within the NHI program is ineffective. Integration of *Kampo* formulas with modern Japanese medicine under the national health insurance system led to physicians

being more willing to prescribe Kampo formulas, and increased their usage nationwide (Moschik et al., 2012). Increasing use of TCAM products and services due to national health insurance coverage was also observed in Australia (MacLennan et al., 1996), Taiwan (Chen et al., 2007), and the Republic of Korea—where both the national and private health insurance systems cover Traditional Korean Medicines (Kang et al., 2017; Park et al., 2012). The DTHS admitted that the exclusion of TIHM in the NHI's medicine list is among the factors hindering success in achieving the targets of the traditional healthcare 'Strategic Plan' to promote the provision of TIHM in a public healthcare facility (Dirjen Yankestrad, 2018). These reports suggest that incorporating the standardized TIHM into the medicine list covered by the NHI can enhance its use in a conventional health facility in Indonesia.

Finally, the disadvantages of TIHM associated with its safety should be noted. Research has reported that herbal medicines could be harmful to users, such as the possible adulteration, herb-induced side effects, adverse drug reactions resulting from herb-drug interactions, and delay in starting treatment among patients with the condition that needs immediate care (Elfahmi et al., 2014; Izzo & Ernst, 2009; Kretchy et al., 2016; Picking et al., 2011). Integration of TIHM in the NHI program is expected to overcome such disadvantages. GPs in this study viewed that the inclusion of TIHM in the NHI would likely create a more rigorous regulatory for TIHM safety. Inclusion of TCAM products and services in the health insurance payment system led to increasing their scrutiny by health authorities as seen in countries with 'well-established integration', such as the People's Republic of China, Japan and the Republic of Korea (Park et al., 2012). Correspondingly, despite having less insurance coverage, the Indian health authority has strengthened the Good Manufacturing Practices rules to improve the quality and standard of Traditional Indian Medicine to promote the integration between traditional and modern medicine (Kang et al., 2017; Sharma, 2001). Indian medicine policies have also included the revision of the Drugs and Cosmetics Act to cover plant-based products. In line with this, similar to biomedicines, the participating GPs desired the health authority to issue a formal list for TIHM to anticipate the integration.

Nonetheless, most TIHM products currently available in Indonesia, which predominantly are *jamu*, are yet to meet appropriate standards of safety, quality, and efficacy (Elfahmi et al., 2014). This suggests that developing a formal list of TIHM and improving the provision of standardized TIHM may not be possible without providing more or better evidence for the safety and efficacy of TIHM, as highlighted by participants with apprehension toward integration. A recent study reported that TIHM was not used as the primary therapy in a healthcare facility because the number of subjects in the clinical trials is still considered insufficient (Widowati et al., 2020). Thus, the efforts to achieve integrative care in Indonesia depend partly on the health authority mandate to develop the national formulary of TIHM and strategies to facilitate high-quality research in evaluating TIHM, not only to ensure the provision of evidence-based TIHM but also provide clinical governance assurance.

This study acknowledges the following limitation: the results of the study do not allow generalization because a qualitative approach was adopted. It is suggested that in the future, a study be conducted to investigate the perception of a larger number of conventional healthcare practitioners concerning the practice of TIHM and its integration into the national healthcare system.

5. Conclusions

The participating GPs hold a positive attitude towards TIHM use in conventional care. They recognised that conventional medicine does not have the solution to all our healthcare needs, and thus, it is necessary to consider alternative forms to complement the conventional practice. The GPs also accepted the idea of integrative care under the NHI program. They indicated that the anticipated integration should focus on using TIHM as an adjunct or complementary treatment to optimise the effectiveness of conventional care. Given the GP's preference toward adjunct treatment of TIHM, its potential risks and benefits should become a major focus within the public health agenda of Indonesia. At the same time, some challenges need to be addressed to facilitate and anticipate the integration of TIHM in the conventional delivery system. The knowledge base of these practitioners in TIHM must be improved through developing a standard education program for herbal medicines.

Additionally, through more advocacy on the clinical use of TIHM, medical practitioners' understanding of the regulatory aspect of TIHM practice will be enhanced and might lead to an increase in TIHM use in clinical practice. However, increasing TIHM use in clinical practice will require updating the regulation of standard TIHM service and establishing detailed guidelines for its internal prescription by a medical practitioner. Having greater confidence in regulatory procedures will enable them to endorse TIHM confidently. Furthermore, GPs indicated that incorporating the standardised TIHM into the medicine list covered by the health insurance may also enhance its use in a conventional health facility, suggesting the necessity of health authorities to issue a formal list for TIHM. Developing a TIHM's formal list will necessitate the provision of more or better evidence for the safety of TIHM. In addition, to improve the provision of standardised TIHM, efforts toward promoting more high-quality

research in evaluating TIHM should be accompanied by increasing efforts to facilitate scale-up of TIHM research. This can be accomplished with more financial support, human resources, and research regulation.

Finally, these results should be interpreted cautiously due to the potential perception bias resulting from the purposive method of selecting participants. The purposive sampling of GPs means that results may reflect only GPs who meet the selection criteria. Thus, the implementation of policy recommendations should also consider this potential perception bias. Future research with a larger number of GP covering more areas selected through random method is needed to minimise this bias. Regardless of the potential perception bias, the results provide essential insights necessary as baseline information on the question of the attitudes of GPs towards TIHM use in conventional care and integration of TIHM in the NHI.

Acknowledgements

This work was supported by JSPS KAKENHI (grant Number JP19KK0166). We would like to acknowledge the contribution of Dr. Noerhadiwijaya and Dr. Ulfatun Nisa, who provided expert advice. Additionally, we are grateful to the general practitioners for participating in the study.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

References

- Abuduli, M., & Aljunid, S. (2011). Role of Traditional And Complementary Medicine In Universal Health Coverage. *Malaysian Journal of Public Health Medicine*, 11(2), 1-5.
- Albedah, A. M., El-olemy, A. T., & Khalil, M. K. M. (2012). Knowledge and attitude of health professionals in the Riyadh region , Saudi Arabia , toward complementary and alternative medicine. *Journal of Family and Community Medicine*, 19(2), 93-99. <https://doi.org/10.4103/2230-8229.98290>
- Awodele, O., Agbaje, E. O., Abiola, O. O., Awodele, D. F., & Dolapo, D. C. (2012). Doctors' attitudes towards the use of herbal medicine in Lagos, Nigeria. *Journal of Herbal Medicine*, 2(1), 16-22. <https://doi.org/10.1016/j.hermed.2012.02.002>
- Boateng, M. A., Danso-Appiah, A., Turkson, B. K., & Tersbøl, B. P. (2016). Integrating biomedical and herbal medicine in Ghana - experiences from the Kumasi South Hospital: A qualitative study. *BMC Complementary and Alternative Medicine*, 16(1), 1-8. <https://doi.org/10.1186/s12906-016-1163-4>
- Bodeker, G. (2001). Lessons on integration from the developing world's experience. *BMJ*, 322, 164-167. <https://doi.org/10.1136/bmj.322.7279.164>
- BPOM RI. (2020). *Informatorium Obat Modern Asli Indonesia (OMAI) di Masa Pandemi COVID-19*. BPOM Republik Indonesia.
- Brinkhaus, B., Witt, C. M., Jena, S., Bockelbrink, A., Ortiz, M., & Willich, S. N. (2011). Integration of complementary and alternative medicine into medical schools in Austria, Germany and Switzerland - Results of a cross-sectional study. *Wiener Medizinische Wochenschrift*, 161(1-2), 32-43. <https://doi.org/10.1007/s10354-010-0834-x>
- Budiarto, W. (2015). Pemanfaatan Dana Kapitasi oleh Fasilitas Kesehatan Tingkat Pertama (FKTP) dalam Penyelenggaraan JKN. *Buletin Penelitian Sistem Kesehatan*, 18(4), 437-445. <https://doi.org/10.22435/hsr.v18i4.4577.437-445>
- Chen, F. P., Chen, T. J., Kung, Y. Y., Chen, Y. C., Chou, L. F., Chen, F. J., & Hwang, S. J. (2007). Use frequency of traditional Chinese medicine in Taiwan. *BMC Health Services Research*, 7(26). <https://doi.org/10.1186/1472-6963-7-26>
- Chung, V. C. H., Hillier, S., Lau, C. H., Wong, S. Y. S., Yeoh, E. K., & Griffiths, S. M. (2011). Referral to and attitude towards traditional Chinese medicine amongst western medical doctors in postcolonial Hong Kong. *Social Science and Medicine*, 72(2), 247-255. <https://doi.org/10.1016/j.socscimed.2010.10.021>
- Clarke, D., Duke, J., Wuliji, T., Smith, A., Phuong, K., & San, U. (2016). Strengthening health professions regulation in Cambodia: A rapid assessment. *Human Resources for Health*, 14(1). <https://doi.org/10.1186/s12960-016-0104-0>
- Dirjen Yankestrad. (2018). *LAKIP Direktorat Pelayanan Kesehatan Tradisional Tahun 2017*. Kementerian Kesehatan RI.
- Dresang, L. T., Brebrick, L., Murray, D., Shallue, A., & Sullivan-Vedder, L. (2005). Family Medicine in Cuba:

- Community-Oriented Primary Care and Complementary and Alternative Medicine. *J Am Board Fam Pract*, 18(4), 297-303. <https://doi.org/10.3122/jabfm.18.4.297>
- Elfahmi, Woerdenbag, H. J., & Kayser, O. (2014). Jamu: Indonesian traditional herbal medicine towards rational phytopharmacological use. *Journal of Herbal Medicine*, 4(2), 51-73. <https://doi.org/10.1016/j.hermed.2014.01.002>
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: strategies for qualitative research*. Aldine Transaction. <https://doi.org/10.1097/00006199-196807000-00014>
- Gyasi, R. M. (2018). Unmasking the Practices of Nurses and Intercultural Health in Sub-Saharan Africa: A Useful Way to Improve Health Care? *Journal of Evidence-Based Integrative Medicine*, 23, 1-5. <https://doi.org/10.1177/2515690X18791124>
- Gyasi, R. M., Abass, K., Adu-Gyamfi, S., & Accam, B. T. (2017). Nurses' knowledge, clinical practice and attitude towards unconventional medicine: Implications for intercultural healthcare. *Complementary Therapies in Clinical Practice*, 29, 1-8. <https://doi.org/10.1016/j.ctcp.2017.07.001>
- Handayani, P. W., Saladdin, I. R., Pinem, A. A., Azzahro, F., Hidayanto, A. N., & Ayuningtyas, D. (2018). Health referral system user acceptance model in Indonesia. *Heliyon*, 4(12), e01048. <https://doi.org/10.1016/j.heliyon.2018.e01048>
- Harris, P., & Rees, R. (2000). The prevalence of complementary and alternative medicine use among the general population: A systematic review of the literature. *Complementary Therapies in Medicine*, 8, 88-96. <https://doi.org/10.4324/9780203698372-10>
- Izzo, A. A., & Ernst, E. (2009). Interactions Between Herbal Medicines and Prescribed Drugs An Updated Systematic Review. *Drugs*, 69(13), 1777-1798. <https://doi.org/10.2165/11317010-000000000-00000>
- Jafari, A., Zanganeh, M., Kazemi, Z., Monfared, E. L., & Tehrani, H. (2021). Iranian healthcare professionals' knowledge, attitudes, and use of complementary and alternative medicine: a cross sectional study. *BMC Complementary Medicine and Therapies*, 1-11. <https://doi.org/10.1186/s12906-021-03421-z>
- Jing, L., Bai, J., Sun, X., Zakus, D., Lou, J., Li, M., Zhang, Q., & Zhuang, Y. (2016). NRCMS capitation reform and effect evaluation in Pudong New Area of Shanghai. *The International Journal of Health Planning and Management*, 31(3), e131-e157. <https://doi.org/10.1002/hpm.2302>
- Joos, S., Musselmann, B., & Szecsenyi, J. (2011). Integration of complementary and alternative medicine into family practices in Germany: Results of a national survey. *Evidence-Based Complementary and Alternative Medicine*, Article ID. <https://doi.org/10.1093/ecam/nep019>
- Kang, Y. M., Komakech, R., Karigar, C. S., & Saqib, A. (2017). Traditional Indian medicine (TIM) and traditional Korean medicine (TKM): a constitutional-based concept and comparison. *Integrative Medicine Research*, 6(2), 105-113. <https://doi.org/10.1016/j.imr.2016.12.003>
- Kretchy, I. A., Okere, H. A., Osafo, J., Afrane, B., Sarkodie, J., & Debrah, P. (2016). Perceptions of traditional, complementary and alternative medicine among conventional healthcare practitioners in Accra, Ghana: Implications for integrative healthcare. *Journal of Integrative Medicine*, 14(5), 380-388. [https://doi.org/10.1016/S2095-4964\(16\)60273-X](https://doi.org/10.1016/S2095-4964(16)60273-X)
- Kristiana, L., Maryani, H., & Lestari, W. (2017). Gambaran Pelaksanaan Pelayanan Kesehatan Tradisional Ramuan Menggunakan Jamu Tersaintifikasi (Studi Kasus di BKTM Makassar dan Puskesmas A Karanganyar). *Media Litbangkes*, 27(3), 185-196. <https://doi.org/10.22435/mpk.v27i3.6233.185-196>
- Kwan, D., Hirschhorn, K., & Boon, H. (2006). U.S. and Canadian pharmacists' attitudes, knowledge, and professional practice behaviors toward dietary supplements: A systematic review. *BMC Complementary and Alternative Medicine*, 6, 31(2006). <https://doi.org/10.1186/1472-6882-6-31>
- Liu, L., Tang, Y., Baxter, G. D., Yin, H., & Tumilty, S. (2021). Complementary and alternative medicine - practice, attitudes, and knowledge among healthcare professionals in New Zealand: an integrative review. *BMC Complementary Medicine and Therapies*, 21(1). <https://doi.org/10.1186/s12906-021-03235-z>
- MacLennan, A. H., Wilson, D. H., & Taylor, A. W. (1996). Prevalence and cost of alternative medicine in Australia. *The Lancet*, 347, 569-573. [https://doi.org/10.1016/S0140-6736\(96\)91271-4](https://doi.org/10.1016/S0140-6736(96)91271-4)
- Mboi, N. (2015). Indonesia: On the Way to Universal Health Care. *Health Systems & Reform*, 1(2), 91-97. <https://doi.org/http://dx.doi.org/10.1080/23288604.2015.1020642>

- Menkes RI. (2007). *Keputusan Menteri Kesehatan RI No. 381/MENKES/SK/III/2007 Tentang Kebijakan Obat Tradisional*. Kementerian Kesehatan RI.
- Menkes RI. (2010). *Peraturan Menteri Kesehatan RI No. 003/MENKES/PER/I/2010 Tentang Saintifikasi Jamu Dalam Penelitian Berbasis Pelayanan Kesehatan*. Kementerian Kesehatan RI.
- Menkes RI. (2015). *Peraturan Menteri Kesehatan RI No.64/2015 Tentang Organisasi dan Tata Kerja Kementrian Kesehatan*. Kementerian Kesehatan RI.
- Menkes RI. (2017). *Peraturan Menteri Kesehatan No. 37/2017 Tentang Pelayanan Kesehatan Integrasi*. Kementerian Kesehatan RI.
- Menkes RI. (2018). *Hasil Utama Riskesdas 2018 (Basic Health Survey 2018)*. Kementerian Kesehatan RI.
- Menkes RI. (2020). *Profil Kesehatan Indonesia Tahun 2019*. Kementerian Kesehatan RI.
- Moschik, E. C., Mercado, C., Yoshino, T., Matsuura, K., & Watanabe, K. (2012). Usage and Attitudes of Physicians in Japan Concerning Traditional Japanese Medicine (Kampo Medicine): A Descriptive Evaluation of a Representative Questionnaire-Based Survey. *Evidence-Based Complementary and Alternative Medicine*, 139818. <https://doi.org/10.1155/2012/139818>
- Park, H. L., Lee, H. S., Shin, B. C., Liu, J. P., Shang, Q., Yamashita, H., & Lim, B. (2012). Traditional medicine in China, Korea, and Japan: A brief introduction and comparison. *Evidence-Based Complementary and Alternative Medicine*, 429103. <https://doi.org/10.1155/2012/429103>
- Park, Y. L., & Canaway, R. (2019). Integrating traditional and complementary medicine with national healthcare systems for universal health coverage in asia and the Western Pacific. *Health Systems and Reform*, 5(1), 24-31. <https://doi.org/10.1080/23288604.2018.1539058>
- Pengpid, S., & Peltzer, K. (2018). Utilization of traditional and complementary medicine in Indonesia: Results of a national survey in 2014-15. *Complementary Therapies in Clinical Practice*, 33, 156-163. <https://doi.org/10.1016/j.ctcp.2018.10.006>
- Picking, D., Younger, N., Mitchell, S., & Delgoda, R. (2011). The prevalence of herbal medicine home use and concomitant use with pharmaceutical medicines in Jamaica. *Journal of Ethnopharmacology*, 137(1), 305-311. <https://doi.org/10.1016/j.jep.2011.05.025>
- Pierantozzi, A. M., Steel, A., & Seleem, M. (2013). Integrating complementary and alternative medicine into medical intern teaching: Preliminary findings from an Australian Hospital. *Complementary Therapies in Clinical Practice*, 19(4), 237-242. <https://doi.org/10.1016/j.ctcp.2013.06.002>
- Presiden RI. (2009). *Undang-Undang Republik Indonesia Nomor 36 Tahun 2009 Tentang Kesehatan*. Presiden Republik Indonesia.
- Rahayu, Y. Y. S., Araki, T., & Rosleine, D. (2020). Factors affecting the use of herbal medicines in the universal health coverage system in Indonesia. *Journal of Ethnopharmacology*, 260. <https://doi.org/10.1016/j.jep.2020.112974>
- Rahayu, Y. Y. S., Araki, T., & Rosleine, D. (2021). Predictors of the Use of Traditional Medicines in the Universal Health Coverage System in Indonesia. *Global Journal of Health Science*, 13(6), 24-35. <https://doi.org/10.5539/gjhs.v13n6p24>
- Robinson, N. (2006). Integrated traditional Chinese medicine. *Complementary Therapies in Clinical Practice*, 12(2), 132-140. <https://doi.org/10.1016/j.ctcp.2006.01.006>
- Sharma, D. C. (2001). India to promote integration of traditional and modern medicine. *Lancet*, 358, 1524. [https://doi.org/10.1016/S0140-6736\(01\)06630-2](https://doi.org/10.1016/S0140-6736(01)06630-2)
- Siswanto. (2018). Pengembangan Kesehatan Tradisional Indonesia: Konsep, Strategi dan Tantangan. *Jurnal Penelitian Dan Pengembangan Pelayanan Kesehatan*, 1(1), 17-31. <https://doi.org/10.22435/jpppk.v1i1.429>
- Stange, R., Amhof, R., & Moebus, S. (2008). Complementary and alternative medicine: Attitudes and patterns of use by German physicians in a national survey. *Journal of Alternative and Complementary Medicine*, 14(10), 1255-1261. <https://doi.org/10.1089/acm.2008.0306>
- Suharmiati, S., Handayani, L., Kusumawati, L., & Angkasawati, T. J. (2018). Studi Kesesuaian Sumber Daya dengan Pelayanan Kesehatan Tradisional Rumah Sakit Pemerintah di Provinsi DI Yogyakarta, Jawa Tengah dan Jawa Timur. *Jurnal Kefarmasian Indonesia*, 8(1), 64-75. <https://doi.org/10.22435/jki.v8i1.7672.64-75>

- Thirthalli, J., Zhou, L., Kumar, K., Gao, J., Vaid, H., Liu, H., Hankey, A., Wang, G., Gangadhar, B. N., Nie, J., & Nichter, M. (2016). Traditional, complementary, and alternative medicine approaches to mental health care and psychological wellbeing in India and China. *The Lancet Psychiatry*, 0366(16), 1-13. [https://doi.org/10.1016/S2215-0366\(16\)30025-6](https://doi.org/10.1016/S2215-0366(16)30025-6)
- World Health Organization [WHO]. (2002). *Traditional Medicine Strategy 2002-2005*. World Health Organization.
- World Health Organization [WHO]. (2013). *The world health report 2013: Research for Universal Health Coverage*. World Health Organization.
- Widowati, L., Astuti, Y., Siswoyo, H., Gitawati, R., & Purwadianto, A. (2012). Gambaran Praktik Penggunaan Jamu Oleh Dokter Di Enam Provinsi Di Indonesia. *Buletin Penelitian Kesehatan*, 40(3), 109-122.
- Widowati, L., Sampurno, O. D., Siswoyo, H., & Sasanti, R. (2020). Kajian Kebijakan Pemanfaatan Obat Tradisional di Fasilitas Pelayanan Kesehatan pada Era Jaminan Kesehatan Nasional. *Buletin Penelitian Sistem Kesehatan*, 23, 246-255. <https://doi.org/https://doi.org/10.22435/hsr.v23i4.3379>
- Ye, J., Xiao, A., Yu, L., & Zhou, L. (2020). Attitude toward and practice of using traditional Chinese medicine in psychiatry: A mixed study of forty-nine leading psychiatrists in China. *European Journal of Integrative Medicine*, 37(May), 101142. <https://doi.org/10.1016/j.eujim.2020.101142>
- Zulkarnain, Z., & Triyono, A. (2017). Jamu as Alternative Therapy to Improve Quality of Life (QoL) of Benign Breast Tumor Patients at Rumah Riset Jamu "Hortus Medicus." *Indonesian Journal of Cancer Chemoprevention*, 8(1), 32. <https://doi.org/10.14499/indonesianjcanchemoprev8iss1pp32-37>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).