



What influences Indonesian medical educators' intentions to teach public health? A qualitative study

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Purpose: Medical educators are central in ensuring future doctors have sufficient public health skills. Attitudes, norms, and perceived control about the significance of teaching a subject determines whether or not it is taught and how well. This qualitative study aims to explore medical educators' perceptions about what factors influence their intention to teach public health in Indonesian undergraduate medical schools.

Methods: Semi-structured interviews were conducted with eighteen medical educators from different Indonesian medical schools. Interviews were analyzed thematically using the Theory of Planned Behavior domains: attitudes, subjective norms, and perceived behavioral control.

Results: Five subthemes emerged under these domains: attitudes (defining public health); subjective norms (room in the medical curricula; teaching and assessment); and perceived behaviour control (medical educator confidence; institutional support). Most participants had a limited understanding about the scope of public health. This coupled with an already overcrowded medical curriculum made it challenging for them to incorporate public health into the medical curriculum dominated by clinical and biomedical content. Although believing that public health is important, medical educators were reluctant to incorporate public health because they were not confident incorporating or assessing content.

Conclusion: Strong institutional support is to improve public health quality and content in the medical curriculum. Including public health educators in discussions is critical.

Key Words: Medical education, Public health, Attitudes, Medical faculty, Theory of Planned Behavior

Introduction

Medical doctors play a critical role in disease prevention and health promotion, and as well as in the development of public health policy at a national or health service administration level [1]. The undergraduate level or junior years in medical education provides an important op-

portunity to expose future doctors to relevant public health learning [1]. Whilst the significance of incorporating public health into the medical curricula is well acknowledged, medical educators face a number of challenges [1] due to the broad scope of public health [2] and an already overcrowded medical curriculum dominated by clinical and biomedical worldviews [3,4] making it almost impossible to add public health content [3,5]. A recent

Received: July 9, 2023 • Revised: September 20, 2023 • Accepted: October 19, 2023
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Korean J Med Educ 2023 Dec; 35(4): 335-347
<https://doi.org/10.3946/kjme.2023.271>
eISSN: 2005-7288

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systematic review on the barriers and enablers of teaching public health in undergraduate medical schools found that increasing the integration of public health into other subjects was a more viable solution to improving public health as opposed to trying to add more public health subjects [6].

The ability to conceptualize public health as part of the medical curricula is key to improving how much it is incorporated in the medical curriculum, and how well this is done [1,3]. A failure to do this well can lead to doctors who are inadequately prepared for work after graduation and can limit their preparedness for emerging public health issues such as novel communicable diseases and the changing landscape of public health in local and global settings [1]. For example, the severe acute respiratory syndrome coronavirus 2 (coronavirus disease 2019 [COVID-19]) pandemic required medical schools to rapidly develop students' understanding of how control and mitigation efforts are influenced by broader health administration and societal factors, including hospital staffing constraints and capacity, vaccine hesitancy, increasing incidence of mental health issues, and the role of the social determinants of health [1,7].

In Indonesia, the government is involved in many areas of medical education, including setting the competency standards [8,9]. The medical curricula were developed based on the 2012 Indonesian Standard for Doctor Competency (Standar Kompetensi Dokter Indonesia [SKDI 2012]) [8]. Whilst some schools also refer to the Standar Nasional Pendidikan Profesi Dokter Indonesia 2019 (SNPPDI 2019), it has not yet been approved by the government. The SKDI 2012 lists 38 public health topic areas (for example maternal and child health), that can be included in teaching content [8]; however, how many and which of the 38 to include are at the discretion of each medical school, resulting in significant variation and inconsistency across the country [10]. Furthermore, the

SKDI 2012 did not set any level of competency which should be achieved with the included public health topics, nor is there room to public health examination to the Objective-Structured Clinical Examination, which leads to further inconsistency across the country. Added to this, the Indonesian Medical Educator Association for Public Health, Preventive Medicine and Community Medicine (Badan Kerja Sama Bagian Ilmu Kesehatan Masyarakat - Ilmu Kedokteran Pencegahan - Ilmu Kedokteran Komunitas Fakultas Kedokteran se-Indonesia [BKS IKM IKP IKK FKI]) was not involved in the development of the SKDI 2012 or SNPPDI 2019.

Medical schools in Indonesia are either publicly or privately funded. Every 5 years, a national accreditation assesses medical schools' performance in several areas including governance, infrastructure, academic content and research [9]. Public health teaching or its inclusion in the curriculum is not evaluated [11]. The national medical competency exam cannot serve as a tool for assessing the quality of public health teaching, as the public health component is minor, and the multiple-choice style questions are insufficient to assess public health competency [11]. As such, no adequate mechanisms are in place to ensure the content or scope within schools and across the country.

What medical educators believe about the significance of teaching a subject determines whether or not they teach it and how well [6]. However, there is very limited research in this area and previous research has focused on innovations in public health education or has medical students as participants [12,13]. The Theory of Planned Behavior (TPB) posits that human behavior is guided by three domains: attitudes, subjective norms, and perceived control [14]. The more favorable one's attitude and subjective norms, and the greater their perceived control, the stronger their intention to perform the behavior. TPB has been frequently used to understand clinicians'

behaviors [15], and also to examine medical educators' behaviors, including incorporating non-biomedical focused subjects into medical curricula [16,17], including qualitatively to understand teaching in higher education [18]. Therefore, the aim of this study is to explore medical educators' perceptions about what factors contribute to their intention to teach public health in Indonesian undergraduate medical schools.

Methods

1. Study design

This qualitative study is part of a larger concurrent triangulation design mixed methods study, preceded by a cross sectional quantitative study. It uses an interpretivist paradigm, acknowledging that multiple realities exist, which are dependent on individuals and their interaction with the world and each other [19].

This study was set in Indonesian medical schools. Indonesia is unofficially divided into western Indonesia (Java, Sumatera, and Bali) and eastern Indonesian (Sulawesi, Kalimantan, Maluku, and Papua which is significantly poorer in terms of infrastructure, healthcare services, and health outcomes than its western counterpart) [20].

2. Study participants and recruitment

In the quantitative component, all 86 Indonesian medical schools were sent an expression of interest asking them if they would send the study link invitation to their medical educators. Any interested medical educators then completed an anonymous online survey and were asked to provide their contact details if they were willing to participate in the qualitative interview. We wanted to explore the opinions of all medical educators who teach

public health, including those that only teach public health as discrete subjects, as well as medical educators who may integrate public health content into their subject matter. We therefore included all medical educators as potential participants. Maximum variation sampling was used in the qualitative interviews to capture medical educators with different backgrounds including region, accreditation grades, subject taught (public health, clinical, biomedical), degree in public health or medical education, academic rank, and representatives from the BKS IKM IKP IKK FKI.

3. Data collection

A semi-structured interview guide was developed by the research team based on the existing literature [6]. The interview guide consisted of 17 broad questions exploring medical educators' attitudes, beliefs, and practices of public health teaching in Indonesian medical schools. Questions were piloted on three native Indonesian speakers for content, clarity, and face validity. The first author (N.A.K.), a native Indonesian medical doctor and medical educator, conducted the interviews virtually, between November 2020 and August 2021. All interviews needed to be conducted remotely due to national and international travel restrictions imposed during the COVID-19 global pandemic. Prior to each interview, the first author (N.A.K.) set aside extra time to build rapport with participants [19]. Interviews were audio recorded with consent, transcribed verbatim, and translated into English by the first author (N.A.K.). To check the translation accuracy, interviews were back translated. Additionally, the English translation of five of the interviews were checked by two Indonesians, both with doctorate degrees from Australian universities.

4. Data analysis

Data were analyzed thematically using NVivo 12 Plus (Lumivero, Denver, USA) to code and manage data. The

research team included senior public health medical educators with PhDs (Doctor of Philosophy) in Public Health and Biomedical Sciences, and an Indonesian doctor and medical educator who teaches public health and is a member of the BKS IKM IKP IKK FKI. Researcher triangulation was used to minimize researcher bias [19] as follows. Two authors (N.A.K. and H.S.) coded the first eight interviews together to create the initial coding framework. The first author (N.A.K.) individually coded the subsequent interviews, which the second author (H.S.) then double coded. The third author (K.W.) then also checked the coding. Disagreements were discussed and resolved by consensus.

Member checking/participant validation, a process whereby coded interviews are reviewed by the interviewees to check if the researcher interpretations are correct, is considered one of the most important steps to ensure credibility [19]. Ten participants (55%) were provided a summary sheet of their interview; two requested minor clarifications be added to provide additional context.

5. Ethics considerations

Ethics approval was obtained from the University of Wollongong Human Research Ethics Committee (HREC 2020/148); governance approval was obtained from the Indonesian Attaché for Education and Culture in Australia, the Indonesian Ministry of Internal Affairs Jakarta, and participating medical schools. Participants provided written informed consent.

Results

In the quantitative component of the larger study where the sample for this qualitative study is drawn from, it is unknown how many medical schools actually sent out the expression of interest to their medical educators and how many medical educators they had. However, a total of 144 medical educators provided their details to be interviewed. Data saturation was reached after 11 interviews, but seven more interviews were undertaken to ensure participants were captured across different characteristics, including subject taught (public health, clinical, biomedical), degree in public health or medical education, representation from the BKS IKM IKP IKK FKI, regions, and accreditation grades. Interviews ranged from 22 to 60 minutes.

Tables 1 and 2 show participant characteristics. The majority were female (n=14), from the western region (n=12), and aged 31-40 years (n=8) (Table 1), nearly all were medical doctors (n=17), and the majority taught non-public health subjects (n=14) (Table 2).

Five central subthemes emerged under the TPB domains: Attitudes: (1) defining public health; Subjective norms: (2) room in the medical curriculum, and (3) teaching and assessment; Perceived behavioral control: (4) confidence or capabilities of medical educators; and (5) institutional support. These are discussed below.

Table 1. Participant Age and Gender by Region and Accreditation Grade

Age group (yr)	Eastern region			Western region		
	A	B	C	A	B	C
<40	0	1 (F)	2 (F)	1 (F)	4 (F)	1 (F)
41-50	1 (F)	1 (F)	1 (F)	1 (M)	1 (M), 1 (F)	0
51-60	0	0	0	1 (M), 1 (F)	0	0
>60	0	0	0	0	1 (M)	0

A, B, C: Medical school accreditation, M: Male, F: Female.

Table 2. Participant Level of Education, Clinical Role, Years Teaching and Teaching Discipline

Characteristic	Category	No. of participants
Highest level of education	PhD (medicine)	5
	PhD (public health)	1
	Master (medicine)	4
	Master (public Health)	4
	Master (medical education)	2
	Bachelor (medicine)	2
Clinical role	Consultant specialist	1
	Specialist	8
	MD	8
	None	1
Years teaching	<5	4
	6–10	5
	11–15	7
	>15	2
Teaching discipline	Social science and humanity	2
	Biomedical	4
	Clinical	8
	Public health	4

1. Attitudes

1) Defining public health

This theme included how medical educators defined public health and its significance in the medical curriculum. Most participants had a purely biomedical view felt that doctors were clinicians and public health was something separate and not as significant as biomedical subjects:

“I don't align with your research objective, which is about teaching public health. It needs to be noted that I am a clinician doctor ...so uh, not related to public health.” (Male, West, A)

Whilst some participants understood that being a clinician meant that they practiced public health, most had a limited understanding about the scope of public health and felt it was restricted to prevention and health

promotion only, or the epidemiology of disease. A common consensus was that if doctors wanted to learn more about public health, then they should undertake further study to have public health degree:

“I think ... doctors' have the freedom to choose whether he wants to further improve his curative abilities or focus on promotive prevention. So, I mean, a doctor, if for example, they really want to work more in promotive and preventive, they can continue their education further to, for example, a Master of Public Health, so that they can contribute more, and have better competence in terms of prevention and promotion, which means, maybe the curative part [of their work] might not be that much anymore.” (Female, East, C)

Some felt unease with this widespread misunderstanding of public health among medical educators:

“Don't say that public health is prevention, if we talk about prevention. [Or] tell a story as if public health is only about health education. That's what happens, right?” (Female, West, A)

One participant highlighted how the structure of the SKDI supported this misconception in the way it structured its chapters, and also contributed to lowering the significance of public health compared to clinical subjects:

“If we look at the SKDI, public health and community medicine were in separate sections. Therefore, we were guided to, to view that public health can be [discussed] later ...it was not integrated into every system.” (Female, East, C)

Despite misconceptions of the definition or scope of

public health, all participants acknowledged that public health was still important for medical doctors' work because students learnt a comprehensive approach to treating patients. It also helped address tridharma (the three areas of Indonesian medical educators' duties: education, research, and community service):

"We have to treat patients comprehensively, from the upstream to the downstream: the promotion, prevention, rehabilitation actions, this package should be taught." (Female, East, C)

However, some felt that the main reason they needed to understand public health was because doctors were superior to other health professionals:

"In the system, we are the supervisors, when you [other health professionals] are not there, we are capable of doing your tasks, aren't we? ... Doctors learn ... many things, so they know whether or not others do their work." (Female, East, C)

2. Subjective norms

1) Room in the medical curriculum

The widespread nature with defining public health and it being considered less significant than clinical and biomedical subjects meant that many felt that public health was adequately represented in the curricula.

"Well, if the curriculum space is full, that's normal, because 60% or 80% should be occupied by clinical matters, right? It has to be about clinics. Public health is indeed less, I think, uh the impression is that it is as a minority. We are aware of this." (Male, West, A)

Some participants felt that there was sufficient public

health in the curricula because content was available as both discrete and integrated subjects in both the bachelor and clinical phases, even though their view on public health was clinically skewed:

"Our subjects are structured into block systems ... So, public health is distributed to those blocks, both to physiological and pathological blocks. In the pathological urinary system block, for example, nutrition will be about nutritional therapy for diseases in the system..." (Female, West, A)

There was a misconception by some that public health was already integrated sufficiently because the epidemiology of a disease or therapy options had been discussed:

"So, in almost all of the blocks, we add epidemiology, 1 hour lesson..." (Female, East, B)

Despite these misunderstandings, most participants agreed that all medical educators should teach public health content to some extent.

2) Teaching and assessment

This theme explored what contributed to medical educators' practices regarding public health teaching and assessment. Participants felt that it was important to ensure that the topics covered in public health were relevant to doctors' work. Some felt that the SKDI developed in 2012, should be revised and updated to accommodate new developments in health. They were keen to comply with guidelines but noted that the SNPPDI was not yet approved by the government:

"[The SNPPDI], is not yet implemented ... We are trying to consider any potential guidance out there and the

SNPPDI is one of them. However, we are aware of its controversy and that everything is possible, it can be either approved or not.” (Female, West, A)

Participants felt that there should be more standardized teaching and guidance for it and that it was important to include advice from the national public health medical educator association. Participants also felt that it was important to ensure that students could see how public health and medicine were linked by linking it with real examples in the community, and timing for when public health was taught needed to be taken into consideration, particularly for discrete subjects.

“In the first year, they studied biomedicine: anatomy, physiology, all those things [as well as the public health subject]. Then, when we looked at their [public health] exam results …I asked [students], ‘What is it that you don’t understand in public health?’ They replied, ‘We don’t know how to relate this [with other subjects]’ …I think the timing was just not right.” (Female, East, B)

One participant highlighted that whilst the curriculum review took place, there was no mechanism in place to check whether public health teaching staff themselves felt that the changes were appropriate.

“When the block team finished …they should have sent [the content] to the relevant departments to check whether the expected scope was in line with the department’s expectations or not. Well, we haven’t done that process yet.” (Female, West, A)

Another challenge related to the assessments in the bachelor phase being mostly multiple-choice questions, which was not adequate to assess all competency areas. Whilst practical field work experience for students was

generally considered to be very important, particularly in the clinical phase, assessing it was difficult because the current logbook method used to judge against the learning outcomes did not necessarily accurately capture students’ competency:

“I prefer asking students to write an essay [to doing a multiple-choice question test]. Because an essay can talk more about what the students have learned …However, it is not possible to put them into the [computer-based] mid and final exams.” (Male, West, B)

3. Behavioral control

1) Medical educator confidence

This subtheme captured medical educators’ perceptions about their confidence and capability to teach public health, and the barriers and enablers to these. Medical educators tended to limit their teaching to their own area of expertise and were reluctant to incorporate public health into their own teaching because they did not know how to incorporate it:

“[my knowledge of public health] is not enough …I remember that we had that lesson, but wasn’t very deep in theory, or maybe it’s because I’m not a person who, I never worked in a Puskesmas, so to me, I [am] not yet trained.” (Female, East, C)

Doctors who had prior experience in public health either by working as a doctor in a Puskesmas (community primary care service), or by having a degree in public health, were more confident about their public health knowledge and had a greater willingness to teach it.

“I was previously from the [Ministry of] health office and had been at the Puskesmas and hospital services. I can teach

...from the public health side.” (Female, East, C)

However, some public health lecturers were also not confident teaching within medical schools because they felt they worked in a system which did not think public health was significant, especially in a curriculum dominated by biomedical and clinical subjects. The culture (norms) in medical schools was seen as responsible for perpetuating this to some extent. Non-public health medical educators viewed teaching public health as an additional time burden.

“[They say] ‘Alright, I have done my tasks. My tasks are to treat this patient.’ ...they are just too busy; they have no time to do things other than treatment.” (Female, East, C)

Some said they would be willing to incorporate public health into their teaching if they were handed prepared teaching materials and assessments:

“It’s possible, but they will usually ask for the content ... and also the assessment material. So, they don’t want it [to integrate material] if they have to make them [materials to teach].” (Female, West, B)

2) Institutional support

This captured participants’ views about what kinds of support they need to be able to teach public health, and whether they felt they received adequate support. Support could be internal from the school, or external from government and other parties. Stability in terms of teaching regulations was seen critical:

“So, we do have a lot of uncertainty up front. What will happen next [regarding policies from decision makers], we don’t know. We get used to see a policy that is not

here today, suddenly there tomorrow ... If I can have a voice in this, I just want the decision makers not to make a mess with what we are doing here.” (Female, West, B)

There was a perception that if the Dean/Vice Dean had a background in public health, then there was more support available for public health teaching than if they were from a clinical background:

“I also think that leadership support is still lacking. Our leaders are mostly from clinician backgrounds.” (Female, West, B)

Some medical schools felt that there were insufficient public health teaching staff and support was needed to recruit more staff. Medical schools in the lesser developed eastern region area found it very difficult to recruit teaching staff or to persuade them to change status from casual to permanent employment because medical educators received higher incomes if they combined their teaching role with clinical work in a hospital or clinic, whereas if they only taught in the medical school, they would receive a much lower remuneration.

“Specialist doctors, or medical educators at clinics are very reluctant to ... be a permanent employee in our university ... In hospitals, it is different. They provide incentives for specialists ... more than what they can get in the medical schools.” (Female, East, C)

Participants were mainly medical doctors who generally had no formal education in teaching, and most felt they needed to have training on how to teach public health:

“We need a kind of workshop, how to teach public health in medical schools ... my teaching method is like a trial. It is based on my experience of learning public health in

my masters and doctoral study...If there is special training from the public health academic association about teaching public health, that will be great.” (Male, West, B)

Discussion

Under the three TPB domains, we found five major sub-themes regarding Indonesian medical educators' views on teaching public health to undergraduate medical students. Due to the broad nature of public health, medical educators found it difficult to define public health and its scope; most did not understand public health and believed it was restricted to health promotion and prevention. This finding is similar to a study in India, another developing country [2]. In contrast, in Germany medical educators defined public health in narrow terms closely related to their discipline [21]. How medical educators define public health is important as it can influence the quantity and scope of public health in the curriculum [2], and can make it easier to standardize public health teaching within countries and globally.

Medical educators in this study believed there was enough public health in the curriculum because it was taught in both the bachelor and clinical stages. This finding is similar to a UK study involving 24 medical schools, where participants felt that the amount of time allocated for public health in their curriculum was “about right” [22]. However, other studies have highlighted that simply having discrete subjects of sufficient credit size did not mean that educators felt that students learnt enough public health [23], and medical educators in this study felt that the quality and relevance of the content was equally as important. This has also been found in studies in China and the United Kingdom [23,24]. Developing learning objectives at a nation-wide level may help to ensure that

the curriculum is relevant [23,24]. However, although Indonesia has developed national guidelines for the medical curricula, it requires refining to ensure some standardization at the school level and also nationally.

In an already overcrowded medical curriculum, improving public health teaching does not necessarily mean more space needs to be allocated [1]. Some participants in this study felt that public health was already sufficiently integrated into the curriculum. This is supported by a UK study which recommended both integrated and discrete subjects [23]. A study in a South African medical school and another of 24 UK medical schools (which constituted 75% of all their medical schools), proposed that offering public health as an elective subject could be the solution [3,22]. However, a study in Indonesia suggested that offering elective subjects should be done cautiously, and consideration should be given to human resources availability, as well as whether medical educators were sufficiently motivated to teach the public health elective subjects [25].

There is no gold standard on how best to integrate public health into other subjects. In this study, to integrate public health into other subjects, participants allocated a time slot (usually 1-2 hour-lecture) for public health within a teaching block of non-public health subjects. A medical educator (usually from the public health department) delivered the public health content in that block. Public health topics could be epidemiology, risk factors and prevention of the diseases, as well as government programs to tackle the diseases. In the United Kingdom, integration to clinical subjects was achieved not only through lectures, but also through student case analysis projects for example, which required students to include the associated epidemiological and public health issues in their discussion [22].

Choosing the best way to assess student public health competency is challenging not only in Indonesia but also

in other countries [22]. While a relatively straightforward assessment works best for more “traditional abilities” such as clinical competence [26], assessing public health was more difficult. Public health education is unique and requires innovative assessment [1]. Medical educators in this study felt that the usual multiple-choice question-style assessment used for mid and final exams could not sufficiently assess students' public health competency. Multiple choice questions were also widely used in the previously mentioned UK medical schools study; however, these were combined with other forms of assessments such as essay, presentation, project work and an Objective Structured Clinical Examination [26]. A more structured approach to assess students' public health competency has been used in a US medical school [26]. Students began by learning to recognize and reflect on their own cultural values, as well as on the diverse background values of patients and health professionals whom they encountered [26]. They were then required to design a “hypothetical community intervention project” or participating in a service-learning project [26].

Similar to other countries, Indonesian medical educators, including those in this study, are mostly clinicians first, and lacked training both in terms of public health content and in teaching skills [27]. For this, substantial institutional support in terms of providing proper training, infrastructure, and policy, is key [1]. A study involving medical educators from 12 European countries about teaching cultural competence, found that medical schools did not provide them with training to teach it [28]. Similarly, a study in 14 Australian and New Zealand universities found that medical educators required more support to teach nutrition effectively [5]. Training provided by medical schools focused more on acquiring general skills for teaching [28], while, for public health teaching, training would need to address specific aspects such as educators' knowledge of government public health

policies and initiatives, community health development, as well as the ability to recognize relevant topics, and to transfer content in a way that medical students find relevant to their future work [29].

Medical education, or the lack thereof, is believed to have contributed to the exacerbation of health inequalities [1]. To address this, the ability and willingness of medical educators to refocus and reorient medical education to be more relevant to society's health need is central [28]. Strong institutional support is essential to develop supportive environments for building interdisciplinary collaboration that enables faculties and medical educators to work together to create change [30]. The provision of training to equip medical educators with the necessary capacity to develop ongoing teaching evaluation and improvement cycles is critical, along with good reward systems to recognize the efforts that have been made by medical educators [30].

1. Strengths and limitations

This study has identified some important views regarding public health teaching in Indonesian medical schools. It was undertaken using rigorous qualitative methodology that ensured a range of perspectives of medical educators with different backgrounds were covered including region, accreditation grades, subject taught (public health, clinical, biomedical), degree in public health or medical education, academic rank, and representatives from the BKS IKM IKP IKK FKI. Member checking and researcher triangulation were used to reduce bias during analysis. However, there are some limitations. Participation was voluntary and medical educators with an interest in public health may have been more likely to take part, resulting in participant bias.

2. Conclusion

Despite being widely acknowledged as an important area

of competence for medical doctors, incorporating public health into medical curricula remains challenging in Indonesia. Attitudes and norms about the definition, scope, and significance of public health impact room for it in the medical curriculum, as well as teaching and assessment. Strong institutional support is required to address this and medical educator confidence to incorporate public health. It is critical that both the government and public health educators be part of the discussion to allow development and policy implementation.

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Acknowledgement: We thank all the participants for their valuable time and insights without which this research could not have been possible.

Funding: Nurhira Abdul Kadir is a recipient of a LPDP (Lembaga Pengelola Dana Pendidikan/Indonesia Endowment Fund for Education) PhD scholarship. The LPDP had no influence on the study design, data collection and analysis, or on the manuscript writing.

Conflicts of interest: No potential conflict of interest relevant to this article was reported.

Author contributions: NAK, HS, and KMW designed the study. NAK conducted the interviews, and transcribed and translated them. NAK analysed the data and was assisted by HS. KMW checked the analysis. NAK drafted the initial manuscript and HS substantially revised the manuscript. All authors provided feedback and approved the final manuscript.

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