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Pharmacists' views on the development of asthma pharmaceutical care model in Indonesia: A needs analysis study



Aris Widayati^{a,*}, Dita Maria Virginia^a, Christianus Heru Setiawan^a, Fenty Fenty^a,
Maria Wisnu Donowati^a, Putu Dyana Christasani^a, Titien Siwi Hartayu^a, Rita Suhadi^a,
Bandana Saini^{b,c}, Carol Armour^{c,d}

^a Faculty of Pharmacy, Universitas Sanata Dharma, Yogyakarta, Indonesia

^b Faculty of Pharmacy, University of Sydney, Sydney, New South Wales, Australia

^c Cock Institute of Medical Research, University of Sydney, New South Wales, Australia

^d Sydney Local Health District, Sydney, Australia

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ABSTRACT

Background: Over recent years the pharmacy profession in Indonesia has adopted a stance of pharmaceutical care to expand their scope of practice. Asthma management presents a key opportunity for pharmacists to test expanded roles in health service provision. There is however no exploratory work on the willingness, experience

future practice needs of Indonesian pharmacists in the realm of specialised asthma service provision.

Objectives: The objectives of this study were to explore Indonesian pharmacists' experiences, perspectives, and needs regarding the provision of pharmaceutical care for asthma patients in Indonesia.

Methods: The study utilised conventional qualitative content analyses with two stages, i.e.: deductive analyses and inductive concept development. Data were collected using Focus Group Discussion (FGD) Method. FGDs were conducted using a topic guide and by facilitators trained in FGD conduct. FGDs were audio-recorded and transcribed verbatim prior to analysis. A maximum variation sampling methods targeted pharmacist across various settings of practice within Yogyakarta Indonesia.

Results: Nine focus groups with 103 pharmacist participants were conducted, with an average of 11 participants in each group. Inductively derived concepts that emerged included: willingness to adopt asthma service provision roles, pragmatism in recognising essential barriers/facilitators in adopting such roles, reflections regarding practice gaps and barriers to interprofessional collaboration mainly in relation to doctors. Inductive data analysis indicated clear differences in responses between hospital and non-hospital pharmacists. Key barriers to service provision included lack of training, lack of supportive professional frameworks, time and lack of reimbursement channels for services. Participants urged for a visionary leadership to facilitate pharmacists' role expansion into health services provision in Indonesia.

Conclusions: Indonesian pharmacists were willing to adopt change and reported universally recognised barriers and facilitators to changing roles, especially in the provision of asthma care. Given this universality of pharmacists expressions, it may be suggested that the experience of researchers and academics who have expended time and effort in developing and implementing asthma care models in other countries should be, to some extent, transplanted to regions where pharmacy organisations are now considering adopting roles additional to medicines supply.

1. Introduction

The profession of pharmacy evolved in most countries from a system of boutique compounding to the industrial era through to the current system of medication supply scaffolded by legislative frameworks. Community pharmacists are now the third largest healthcare

professional group in the world after physicians and nurses and offer an accessible, direct approach to obtaining treatment.¹ In most of the developed world over the last 2–3 decades there has been a further paradigm shift with pharmacists diversifying from dispensing roles to the provision of a spectrum of services in addition to dispensing. Examples of health services provided by pharmacists alone or as part of

* Corresponding author. Faculty of Pharmacy, Universitas Sanata Dharma, Kampus III USD, Paingan, Maguwaharjo, Depok, Sleman, Yogyakarta, 55281, Indonesia.
E-mail addresses: ariswidayati@usd.ac.id, ariswidayati31@gmail.com (A. Widayati).

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multidisciplinary teams range from prevention to palliation services.² Hepler and Strands' landmark paper describing the notion of pharmaceutical care was transformative as pharmacists around most of the developed world adopted this notion.^{3,4} Hepler and Strand's paper outlined the need to shift from a focus on the 'product', i.e. the medication, to a philosophical patient centred approach of **34** *responsibility for a patient's health outcomes*.^{3,4} They defined **pharmaceutical care** as *"the responsible provision of drug therapy for the purpose of achieving definite outcomes which improve a patient's quality of life"*.^{3,4} The development of pharmacy services is perhaps also driven through the need for professional self-actualisation as well as health system need. There is now a corpus of research which establishes the positive role of pharmacists in conditions such as asthma, diabetes and cardiovascular disease.²

It is recognised that in the developing countries, too, there is momentum to utilise the skills of the pharmacist more effectively.^{5,6} This is driven by the pharmacy profession as well as from a health economic perspective as the focus shifts from communicable to non-communicable diseases (NCDs) and developing countries find themselves with shortages of a skilled medical workforce.⁷ Although pharmacy practice in developing countries varies widely, many developing countries have, over the last decade, invested in streamlining legislative frameworks for medication supply, expanded the scope of the pharmacy curricula, boosted the role of national pharmacy organisations and invested in research utilising the pharmacist's unique skills to showcase their contribution to **13** *proving health outcomes*.^{5,6}

Indonesia is **14** *lower middle income country with a population of 247,000,000*.⁸ NCDs are estimated to **31** *count for 71% of total deaths* in Indonesia. Hypertension, cancer, asthma, chronic obstructive pulmonary disease (COPD), and diabetes are the main NCDs with the national prevalence for each in 2013 at 26.5%, 1.4%, 4.5%, 3.7% and 2.1%, respectively.⁹ The Indonesian Pharmacists Association has been very active in progressing and developing professional roles for pharmacists so that pharmacy, as a profession, can make a significant contribution to public health, especially with the burden of NCDs. In a revolutionary move, an Indonesian Ministry of Health regulation in 2004 has mandated pharmacists to follow the key elements of pharmaceutical care in their practice.¹⁰ In line with this, a new curriculum that includes clinical pharmacy and pharmacy practice has been implemented in Pharmacy Schools in Indonesia. Students of undergraduate Pharmacy Programs have to complete a four-year course, followed by two semesters in the Pharmacist Professional Program which includes internship activities in community pharmacy and hospital. The Indonesian Pharmacists Association (IAI – Ikatan Apoteker Indonesia) and the university sector are also working to up-skill previously trained pharmacists in pharmaceutical care provision through a competency based training which then leads to these pharmacists being 'Recertified' for practice.

In line with these changes, pharmacy academics in Indonesia have started exploring systemic issues in pharmaceutical care delivery. For example Wibowo et al. surveyed physician and pharmacist views about pharmacist delivered care for diabetes mellitus patients,¹¹ and Puspitasari et al. interviewed and surveyed community pharmacists about roles in secondary cardiovascular disease prevention.^{12,13} Brata et al. audited the skill level of pharmacists in information gathering during non-prescription requests.¹⁴ Alfian et al. identified consumers' expectation on self-medication services provided by pharmacists.¹⁵ Such works provide an insight into the direction that pharmacy **27** *profession is moving* in Indonesia. However no exploratory work on **the role of pharmacists in asthma management has been** conducted so far.

Chronic respiratory disease poses a key mortality and morbidity burden in Indonesia.⁸ Based on data from a national survey in Indonesia in 2013, the prevalence of asthma in the community is 4.5%, which translates to about 11.25 million Indonesians. At a provincial level, the prevalence **16** *asthma ranges between 1.6% and 7.8%*. Yogyakarta Province, **is located in the Island of Java** and has **a population of** about

17 *3 million*. **It has been reported that the Island of Java has better health care provision** than other parts of Indonesia. For example, recent national data on health care accessibility suggested that Yogyakarta Province had the highest level of access to private hospitals, i.e. 82.4% compared to the national level of 53.9%.⁹ The prevalence of asthma in Yogyakarta Province was 6.9% in 2013, which was the third highest among all provinces in Indonesia.⁹ Hospital data collected in 2016 in Yogyakarta province suggested that asthma was one of the top ten reasons for hospitalisations and the second most common reason for presentations in hospital ambulatory clinics.¹⁶ Factors that may complicate asthma management are the high prevalence of smoking in Indonesia (~34%),¹⁷ other prevalent respiratory issues such as tuberculosis¹⁸ and upper respiratory tract infections which may be comorbid with asthma. Moreover, Indonesia is surrounded by very active volcanoes and 'Merapi Mountain' one of the most active volcanoes in the world is located in Yogyakarta Province. The last major explosion was in 2010. Discharged volcano ash which is inhaled by people during explosions periodically affects lung function.¹⁹

There is now irrefutable evidence that community pharmacists can enact key roles in asthma and pharmacist interventions can result in improved asthma control, quality of life and patient self-management behaviours.^{20,21} Whilst much of this evidence has been generated in developed countries, pharmacists in many developing countries such as Egypt, India, Serbia and Saudi Arabia have also generated clear evidence highlighting the positive effect of community pharmacists interventions in asthma.^{22–25} Given the burden of respiratory diseases such as asthma and the pharmaceutical care path being adopted by Indonesian pharmacists, it is timely to explore whether Indonesian pharmacists are ready to take on the mantle of asthma care provision. Their views could then inform any plan **21** *and development of asthma care models in the Indonesian context*. **The aim of this study is to explore the views, experience and expectancy of the Indonesian pharmacists regarding delivering pharmaceutical care for asthma patients**.

2. Methods

30 *Given the exploratory nature of the study, a qualitative approach employing focus group discussion (FGD) was used*. FGDs were selected as a method of choice as the topic being explored was of importance to the profession rather than individual pharmacists. FGDs also provided economies of scale, where trained facilitators could garner the opinions of an entire group in one session at a time, rather than individually interviewing all participants. Finally, as pharmaceutical care is not yet extensively implemented in Yogyakarta province, brainstorming about issues and challenges within **15** *participants was proposed to allow a deeper insightful exploration*. **Ethical clearance for this study was obtained from the Ethical Committee, Faculty of Medicine, UKDW Indonesia (No.:405/C.16/FK/2017)**.

2.1. Participant selection and data collection

Participants included Indonesian pharmacists practising in Yogyakarta Province who were purposively selected. Only those who were certified practising pharmacists were selected for inclusion in the study. The exclusion criterion was if the certified pharmacist practiced in the pharmaceutical industry, pharmaceutical distribution and trading, government, and other areas which do not have direct contact with patients. To ensure maximum variation in the sample, participants were selected from a variety of settings such as pharmacists working in public and private hospitals, public primary health care centres, (PHCs) chain pharmacies, and independent community pharmacies within Yogyakarta Province. An invitation letter with project information was sent to potential participants. A confirmation of attendance was requested if participants wished to volunteer. To ensure that data saturation within focus groups was achieved and the sampling was as varied as possible, the research team planned for a minimum of 8–10

focus groups with a maximum of 12 participants in any group.²⁶

2.2. Facilitator training

Prior to the focus group conduct, eight local researchers within the group who were going to act as facilitators for the FGDs met with one of the research collaborators (BS) with experience in qualitative research. Key aspects of facilitation skills were discussed. Following this, after the FGD guide had been developed, the eight research team members plus two hired assistants responsible for facilitation met again and workshopped key aspects of the FGDs and practised facilitation skills. In total, ten facilitators were trained; this allowed spare capacity in anticipation of facilitator absence on the date of FGD conduct.

2.3. Focus group conduct

Two collaborating team members (CA and BS) with experience in qualitative research around respiratory topics and pharmacists drafted the focus group guide (in English) based on their clinical and research experience (in Australia) and the published literature. The eight local research team members then workshopped key discussion points in the drafted guide for relevance to the local context. A final version of the FGD guide was agreed upon by all team members and translated into Bahasa Indonesia (the National Language of the Republic of Indonesia).

The FGD guide comprised nine key topics, i.e.: 1) Level and type of experience with asthma; 2) Opinion about legislation/regulations related to supply of asthma; 3) Clinical approach when supplying asthma medications/dealing with requests for asthma medication; 4) Level and type of contact with other health professionals such as family physicians; 5) Opinions about the notion of pharmacies providing specialist services; 6) Perspectives about accreditation pathways for asthma specialty practice; 7) Practice needs for future speciality practice (in asthma); 8) Training needs for future speciality practice (in asthma); 9) Opinions about financial viability of pharmacy based specialised asthma services.

The FGDs were conducted in a meeting room at the Universitas Sanata Dharma Yogyakarta Indonesia on 5th of August 2017. Project information highlighting the voluntary nature of the study and what participation would entail was provided to the participants prior to requesting consent. Participants were divided into 9 groups and each group was facilitated by a trained facilitator. All facilitators conducted their group synchronously in Bahasa Indonesia. Key principles of good FGD conduct were followed i.e. adherence to the FGD guide, providing equal opportunity to all participants to speak, drawing out quieter participants and managing more vociferous ones, steering the group back to FGD topics when needed, remaining an objective conductor rather than becoming involved in the discussion and summarizing key points at FGD closure.²⁷ Each facilitator was assisted by a hired trained pharmacy student. The assistant was responsible for writing discussion minutes, creating field notes and ensuring that the FGD was being audio recorded.

2.4. Data analysis

The audio transcripts were transcribed verbatim following which the field notes were compared with the audio transcripts and annotations made, where necessary. The transcripts were then back translated from Bahasa Indonesia to English. The translations were undertaken by one of the research members (AW) fluent in both English and Bahasa Indonesia. The translations were cross checked by the other research team members to insure the quality of translation. The transcripts were then entered into the QSR NVivo 11 Software (QSR International, Cambridge, MA) for analyses. The transcripts were then subjected to a conventional qualitative content analysis.²⁸ Firstly, key findings were extracted deductively using pre-identified discussion topic categories (e.g. based on the FGD guide). Following this step, the transcripts were

analyzed for key thematic concepts inductively.²⁹ The first two transcripts were analyzed by three team members (AW, CH, DMV) with an experienced qualitative researcher (BS). For interpretive rigour, all transcripts were read and coded by at least two research members independently.³⁰

2.5. Quality assurance

The cross checking of field notes with translated transcripts and independent coding as described above insured *confirmability* of the results.³¹ The engagement of some research staff in actual pharmacy practice and the purposeful inclusion of deviant opinions in the analysis and results highlight study *credibility*.³¹ The multiple and international nature of the research team also add to *credibility*, i.e. having researchers on-site (hands-on) and off-site.³¹ The time taken in conduct of the focus groups and the depth of the transcripts themselves (showcased in results section) did indeed demonstrate thick descriptions by participants which assures *transferability* at least to all pharmacists within the province (Yogyakarta, Indonesia).³¹ Finally, though a member of the research team, one of the off-site researchers (CA) remained unexposed to the data during the collection and analysis, and data and interpretations were discussed with this researcher post analysis as a surrogate measure of *dependability*.³¹

3. Results

Of the 125 potential pharmacist participants invited to the focus group discussions (FGD's), 103 participated in the 9 FGDs (response rate of 82.4%). The participants were divided into 9 groups, and these focus groups took between 60 and 75 min. The profile of the FGD participants is described in Table 1.

Participants in this study, by design, had a variety of experience, in terms of where they practised and years of practice. A description of the make-up of individual focus groups is highlighted in Table 2.

In the first step of qualitative content analysis of the FGD transcripts, conversation summaries were deductively generated using the discussion topics in the FGD guideline. The summarized views of the participants are summarized in Table 3.

Several key concepts emerged through the sequential inductive analysis of transcripts. The key issues thus derived are highlighted below in the underlined sentence. The participants' voice is illustrated through exemplar quotations following description of key concepts. The quotes are anonymised and reference is made to the focus group code number, followed by initials such as CP for community pharmacist, HP for public and private hospital pharmacist, PHC for public Primary

Table 1
Profile of participants of Focus Group Discussion.

Description of participants' profile	Number and description of participants (N = 103)
Female	94
Male	9
Where they are practising	
Public hospital	12
Private hospital	9
Public Primary Health Center (PHC)	18
Chain pharmacy	53
Independent pharmacy	11
Age	Ranging from 22 to 65 years old
Years of experience	Ranging from two months to 35 years
Exposure to asthma patients (per-day)	
In chain pharmacy and independent pharmacy	Ranging from 1 to 10
in PHC	Ranging from 3 to 10
in hospital	Ranging from 10 to 20

Data limitation: It may be noted that only the ranges were collected at FGDs for age/exposure to asthma patients rather than individual data.

Table 2
Practice related demographics of participants within individual focus groups.

Code of group	Number of participants in each group (N = 103)	Where the participants are practising (N = 103)
1-AW	11	Chain pharmacy, Independent pharmacy
2-DT	12	Private hospital, Public Primary Health Center (PHC), Chain pharmacy
3-FT	12	Public Primary Health Center (PHC) pharmacy, Chain pharmacy, Private hospital pharmacy
4-RT	10	Public Primary Health Center (PHC) pharmacy, Chain pharmacy, Private hospital pharmacy, Public hospital pharmacy
5-TT	10	Chain pharmacy, Private hospital pharmacy, Public hospital pharmacy, Independent pharmacy
6-WS	13	Public Primary Health Center (PHC) pharmacy, Chain pharmacy, Private hospital pharmacy
7-FL	12	Chain pharmacy, Public hospital pharmacy
8-HR	11	Chain pharmacy, Public Primary Health Center (PHC), Independent pharmacy
9-TN	12	Chain pharmacy, Independent pharmacy, Private hospital pharmacy

Health Care Center, to highlight the demography of the participant whose quote has been highlighted.

3.1. Willingness to provide pharmaceutical care for asthma patients

Regarding the idea of asthma care provision, participants very strongly expressed their willingness to provide services for asthma patients. They indicated that they were ready to provide pharmaceutical

care and particular roles they envisaged for themselves included providing asthma education to patients and monitoring therapeutic asthma outcomes. Many pharmacists expressed an urgent need to develop standards of care/practice for providing specialised services (e.g. to asthma patients). Most participants were also very willing to expend effort in becoming certified or accredited as asthma specialist pharmacists. However, some participants, especially those working in independent pharmacies and chain pharmacies had concerns about

Table 3
Summary of views and experiences of pharmacists regarding asthma service provision derived deductively from responses to pre-set discussion topics.

Discussion topics	Summary of pharmacists' views and experiences
Opinion regarding the legislations with respect to the asthma medications	Most of the participants were aware about standard therapy of asthma (Indonesian Guidelines for Pharmaceutical Care for Asthma). Most of the participants said that the standards are relevant.
Approaching a patient presenting for asthma medications	All of the participants had experience with asthma patients. In hospitals and Public Primary Health Center patients present only with prescriptions; while, in community pharmacy, pharmacists receive patients with and without prescriptions. ^a For a patient presenting with prescriptions, all the participants stated that their processing involved a 3 step review or screening of the prescription, i.e.: administrative, pharmaceutical, and clinical review. ^b For a patient presenting without a prescription, pharmacists reported engaging in a process of gathering background information and making sure the patient understands how to use their medicines.
Contacting other health professionals regarding asthma medications	All pharmacists reported providing patients with asthma education or drug information. Some of the participants highlighted that it was challenging to communicate with doctors. On the other hand some of the participants stated they do commonly initiate communication with doctors and receive good responses, especially when they communicate about dosage changes. One participant had a self-perceived notion that a doctor is a person who is 'untouchable', especially when they have 'so many academic degrees'.
Opinion regarding the idea of pharmacies providing specialist services for asthma patients	Most of the participants expressed that specialist services for asthma (and other chronic diseases) are urgently required. One participant mentioned that there is an opportunity to provide such specialist pharmacy services through collaboration with BPJS (Indonesian National Bureau of Social Assurance) for chronic disease services. A few participants thought that asthma is not the top priority compared with cardiovascular diseases or diabetes mellitus.
Views on being an accredited/specialty practice for asthma	Most of them suggested that provision of specialised asthma services should be taken on only by pharmacists who are accredited. Most participants were willing to work towards accreditation as 'asthma specialist pharmacists'. The key reason for noting the value of accreditation was that patients would trust 'accredited' pharmacists and clinical recommendations made by 'accredited' pharmacists would be more likely taken seriously by doctors. Participants felt that accreditation qualifications are especially needed by hospital pharmacists where the problems related to respiratory pharmaceutical care would be more complex. The general consensus was that specialist training and accreditation for pharmacists delivering asthma care was a 'must' in the hospital setting, but not as yet essential in community pharmacy settings.
Additional features that the pharmacy should be providing in the provision of specialist services for asthma patients	Consultation time. Home based care – e.g. home visits to review asthma control and medication management by patients
The needs for training modules to support the provision of specialist services for asthma patients	Most participants reported that active training formats would be preferable such as workshops, group discussion, and case reviews. The focus of this training should be on pharmacology of asthma medicines and the appropriateness of asthma therapy could be gauged/monitored monitoring therapy. All participants felt that they would need training for new products/new medical devices. Many participants mentioned that they would need to be trained specifically on adult, geriatric, and pediatric asthma.
Opinion regarding the financial viability of the provision of specialist services for asthma patients	Most of the participants suggested that they would be comfortable charging patients' fees for their specialist services. However some participants also expressed a concern that a fee would pose a burden for patients and may prohibit some patients from meeting their pharmacists.

^a This referred to standards of practice, i.e. an asthma reliever inhaler can be provided without a prescription if there is a history of having had a prescription previously.

^b The new Indonesian pharmacy standards state that pharmacists role include checking any prescription they dispense from administrative, pharmaceutical and clinical appropriateness.

human resources limitations and therefore, time constraints.

"We agree with the development of a pharmaceutical care program for chronic diseases, which is good and is needed. The problem of contraindications [to use of medications] is quite frequent in medicine use". (5-TT-CP).

"...It [asthma care model] needs to be certified in order to provide an appropriate [standardized] health care to asthma patients". (8-HR-stated by all participants (CP, PHC))

3.2. Pragmatism

Having expressed their willingness to provide pharmaceutical care for asthma patients, all participants were cognisant of currently not having a supportive practice environment to do so. Most had a surprising clarity of vision about practical practice support elements that they would require to be able to provide specialised asthma services/pharmaceutical care. These included the need to 1. Have clearly operationalised standards of practice pertaining to service provision 2. Have a structured, accredited model of care that could be uniformly adopted/delivered 3. Have a comprehensive training and accreditation program for pharmacists wishing to become specialised service providers and 4. Have clear pathways of remuneration for services provided.

"...In the community pharmacy, there is no standard [standard operating procedure for providing specialized services to asthma patients]. So they [community pharmacists] will not do that. But, we need an action to start it." (3-FT-CP)

Many pharmacists suggested that the viability of providing a specialised services mandated charging patients for the service. However, some participants disagreed with this notion, though they recognised that remuneration for the time and effort expended was necessary.

"...it needs money for the service because it is professional work." (8-HR-CP)

"If the patients cannot afford it [fee], they don't need to be charged. But, if the patients can afford the service fee, it should be charged." (8-HR-PHC)

Some participants were reflective about their training gaps and indicated they would not be 'comfortable' charging patients as they needed to improve their clinical skills before charging fees or if this affected patient access to pharmacy services.

Participants were also quite practical about what training they needed. They indicated that the training provided to pharmacists must lead to accreditation/certification as this would make them more trustworthy both from the patient and doctor viewpoints.

Most preferred an 'active' form of training rather than passive, didactic methods. Included in their desired clinical learning topics (Table 1) were issues such as communication skills with patients and doctors.

"...it is [certified/accredited training] needed, so when we are in discussion with doctor, we can be more respected or trusted." (9-TN-HP)

"May be we need more training programs, because pharmacist training for asthma and COPD are not available yet for the other chronic diseases there are training programs already." (7-FL-CP).

"...the pharmaceutical care program must be certified, so that patients are more confident to seek counselling from pharmacist." (4-RT-CP)

"We need to make sure how medicines are used by patients, i.e. used alone or taken together with other medications, as there is the possibility of drug interaction and side effects. We need to study in depth regarding each asthma medicine." (3-FT-HP2)

3.3. Practice setting differences

There was a clear gap between pharmacists who practiced in hospitals, Public PHCs and those in community pharmacy. The gaps seemed to stem from different levels of staffing support available, having access to clear clinical asthma guidelines, other supporting tools, and supportive management. Pharmacists in the community pharmacy setting appeared to have less support compared to those in PHCs and hospitals. There were also professional role boundaries expressed where participants perceived that certain roles were more crucial or better developed in different professional pharmacy sectors.

"We [hospital pharmacist] state that it is required to have a specific training, especially when our concern is in this area [asthma], for example, pharmacists who work at [asthma/respiratory] clinic. But, for those who work at community pharmacy [general] perhaps it is not urgent." (5-TT-HP)

"Medical records of patients in hospital are better [than in community pharmacy], it is expected that both community pharmacy and hospital have a good quality of medical record of patient." (5-TT-HP)

3.4. Reflexivity

Several participants were well aware of the strengths and weaknesses of their practices. They clearly stated that they believed it was a pharmacist's role to: provide asthma education to patients; assess prescriptions for administrative, pharmaceutical and clinical appropriateness; monitor therapeutic asthma outcomes of patients; communicate with doctors regarding identified issues asthma patient's medication/management. On the other hand, many participants recognised that: there are time limitations in delivering their roles; lack of sufficient clinical asthma knowledge; there were collaboration/communication barriers with doctors; and there was inadequate professional practice support. Participants reflected that given the current state of play in the Indonesian pharmacy profession, there was a clear need for visionary leadership and professional direction with remuneration support to facilitate them in delivering their pharmaceutical care responsibilities to asthma patients. A few participants also suggested that public health education was needed for consumers to understand the roles their pharmacists could play in asthma.

"There is discussion regarding specialized pharmacy, however it would need support and acknowledgment from professional organization leaders." (1-AW-CP)

"In the local government meeting, it has been discussed [the fee for pharmacy services] would be similar to doctors, there needs to be a professional fee [for pharmacist]." (5-TT-HP)

3.5. Interprofessional collaboration

Several issues related to interprofessional collaboration were distilled from participants' expressions. Although not confident in this aspect, most participants acknowledged the importance of collaborating doctors. Some participants regarded doctors as having a 'senior' position in patient care, i.e. a position of professional hierarchy. These perceptions appeared to manifest as clinical hesitancy in contacting or collaborating with doctors, leading in some cases to pharmacists taking an unauthorized step when they faced dispensing problems, instead of communicating with doctors for problem resolution.

"...the patient's mindset needs to be changed for example when they ask to change their medicines because of the side effects ... we will not be able to change [the medication] straight away, because the authority to change medicines prescribed is owned by doctors". (2-DT-HP)

4. Discussion

This study underlined the expectations and perspectives of participating Indonesian pharmacists towards expanding their professional responsibility for asthma care. This study revealed several key issues in delivering pharmacy based asthma care in Indonesia. The willingness to provide specialised care was clearly apparent. The transcript analysis highlights valuable nuances such as pragmatism, practice reflexivity and the experience of practice barriers such as interprofessional collaboration and lack of professional support for expanded roles in asthma care. In the context of non-communicable disease in Indonesia, a developing country, this is first study that explores the possibility of upskilling the pharmacy workforce in playing an active role in chronic lung diseases such as asthma. Whilst such work has been reported previously from several developed and a few developing countries, results of this study highlight clearly, that even though the pharmacy profession in Indonesia is only currently attempting to expand towards service roles and constructing the professional frameworks to support service provision, the needs, experiences and practice barriers with respect to service provision are comparable to those expressed by pharmacists across the world.^{11,22,32} Despite not having clear practice models or existing exemplars, participating Indonesian pharmacists clearly expressed a willingness to adopt new roles. From a global professional development viewpoint, these findings provide an important message about diffusion of innovative pharmacy service models across borders.

The participant pharmacists portrayed very pragmatic attitudes towards adopting new roles such as asthma service provision for patients. Pragmatic attitudes have been reported in research with other South East Asian community pharmacists, e.g. Cambodian pharmacists participating in a Tuberculosis referral program.³³ It can be suggested that in developing nations, a pragmatic mindset is a necessity, and fosters development itself.³⁴ Pharmacists in this study were insightful of several barriers that could impact on service roles. Key impediments they highlighted included time constraints, lack of clinical knowledge/confidence, limited support from doctors, patient expectations and lack of supporting professional frameworks. These factors are not novel, nearly every exploratory research gauging pharmacy stakeholder's views about practice shifts towards expanded roles¹⁹ health care have revealed similar issues.^{35,36} Such barriers clearly need to be addressed to advance the role of community pharmacy practice.

As a separate issue to the role advancement and maturation of the pharmacy profession in Indonesia, is the clear need for pharmacists to take on newer, innovative roles. Current OECD nation comparator data clearly highlights the acute shortage of doctors, e.g. the Indonesian doctor patient ratio 0.3/1000 in 2014, compared to the OECD average of 3.2/1000.³⁷ With the rising prevalence of non-communicable disease in Indonesia, and the doctor shortages, the pharmacy profession can help address gaps in patient care. Many researchers have suggested this 'task-shifting' as a key strategy to improve health in the Indonesian context.^{38–41}

As highlighted by a number of change theories, behavioural change or practice change processes occur in at least two levels, which include the individual level and the organizational level.⁴² In the case of Indonesian pharmacists who participated in this study, it appears that whilst they were willing to embrace a changed model of practice, what would be needed primarily would be change at the organization level. Clearly, delivering specialised health services at the practice level across an entire province, would require collective and coordinated behavioural changes by many individuals, making the need for organizational level change all the more necessary. The well-known Kotter's model of change suggests three steps, 1) creating a climate of change, 2) engaging and enabling the profession, and 3) implementing and sustaining change.⁴² Given the recent direction of the Indonesian Pharmacists Association in advocating 'pharmaceutical care' as the professional practice vision, it would appear the climate change for the

pharmacy profession is already in place and ongoing. In implementing asthma care services in Indonesia, it may be recommended therefore that collective behavioural changes from participating Indonesian pharmacists supported by leadership from the Indonesian Pharmacist Organization are needed to fit with Kotter's notion of 'engage and enable' the profession. Looking at successful practice change models reported in the literature, it is apparent that the more promising approach is organizational change, for example, used in the implementation of chronic care models and electronic health records amongst other such innovations.³⁶

In analysing these results, the team also compared with the experience of other countries, notably Australia. Given the high prevalence of asthma in Australia, asthma disease management models for pharmacy delivery were developed and tested, in what at that stage was a paradigm shift for pharmacists i.e. from dispensing to service roles. The first prototype asthma care model was a pilot trial, the results of which were published in 2004.⁴³ The complete asthma care model comprised a structured training for pharmacists and a structured documentable process that facilitated pharmacist providers to systematically assess patient's asthma, provide relevant interventions, review patients regularly, and collect data on outcomes.⁴³ In developing this prototype asthma care model, researchers consulted pharmacist stakeholders and these consultations informed the development of the asthma care model.⁴⁴ Surprisingly, the Indonesian pharmacists in the sample, working in a different environment, had much the same insight to offer as Australian pharmacists did, years ago, prior to setting up an ongoing program of testing pharmacist delivered asthma care.⁴² This suggests that the landscape for the delivery of pharmacist provided health services is globally similar, with similar challenges and practice needs.

In Australia, subsequent to the initial pilot trial of a pharmacist delivered asthma care model in Australia, the team of researchers³² who designed this model sought and obtained substantial funding from the Australian Government Department of Health to test the model on a national scale, including an implementation trial, with very positive outcomes.^{45,46,46} Although specialised asthma care services are not yet reimbursed through Medicare (the national health insurance scheme available for all Australians), the provision of asthma services by pharmacists is a model accepted by both patients and pharmacists.^{47–49} However pharmacists participating in these asthma service trials highlight that till their professional time is fully reimbursed, whilst willing, they would not find it viable to offer comprehensive disease management services for asthma.⁵⁰ The professional stance generally is that given the evidence for pharmacists contribution exists, remuneration channels for pharmacist providing accredited services must be sought through active dialogue and discussion with Australian government authorities. Interestingly, again, the Indonesian pharmacists participating in this study offered similar views about potential asthma services, in other words they were on the 'same page' as Australian pharmacists despite not having gone through the various steps in asthma service development. It may be suggested that Indonesian pharmacists (and pharmacy organisations) could 'borrow' the learning and experience of their Australian (and other) counterparts in beginning this health services journey by lobbying with their government agencies to instate remuneration channels up-front before they embark on testing service models. In this manner, by transplanting some of this learning, Indonesian pharmacists may be able to shift their paradigm of practice in fewer steps and arrive faster at a sustainable model of specialised asthma care delivery with lesser time and resources invested in development processes (Fig. 1). This would also make service provision sustainability easier, as classic change theories e.g. Kurt Lewin's 3-step change model⁴⁹ suggests that in fully developed systems (e.g. pharmacy practice in Australia, where the regulatory/legislative frameworks, clinical guidelines, standard of practice, extensive training) when novel approaches are introduced, practitioners have to 1. 'unfreeze' their practice mindset, 2. *acquire new learning* and adapt to change and 3.

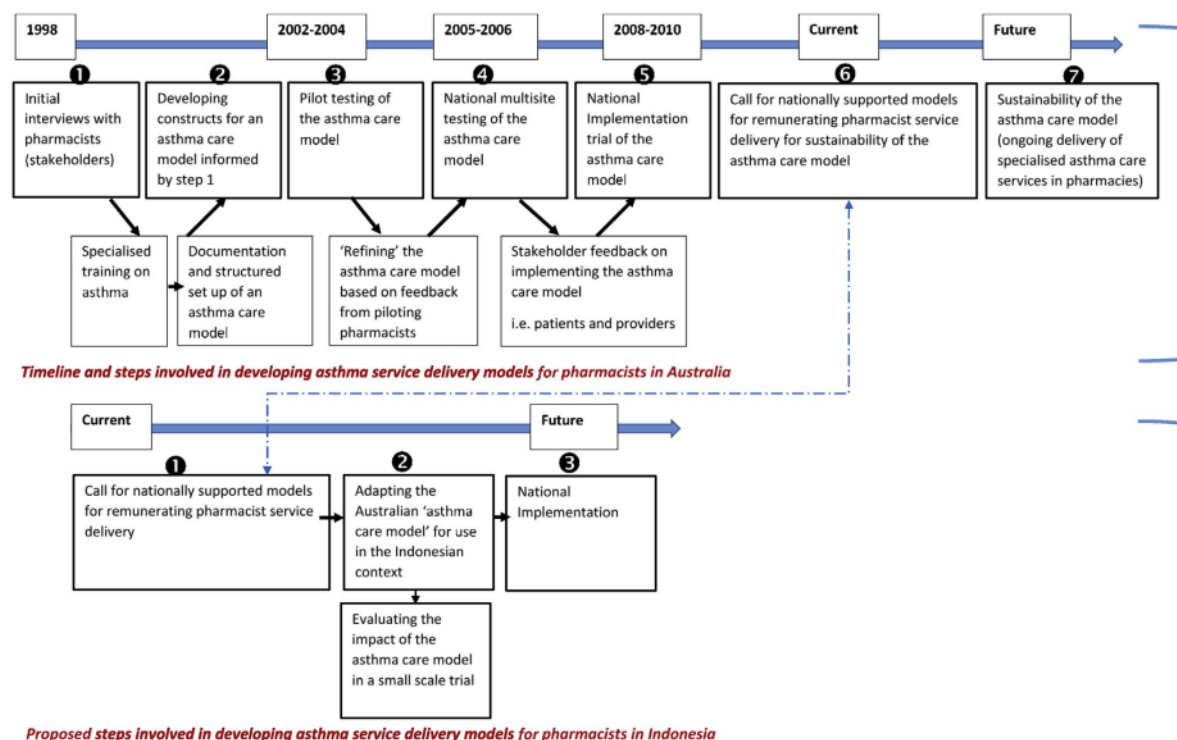


Fig. 1. Professional 'experience' transfer for economical practice change.

'refreeze' their practice mindset. Given Indonesian pharmacy practice is as yet developing, the first step of unlearning acquired practice habits can be avoided in the context of practice roles covering both service and supply roles.⁴⁹

The study is not without its limitations. In translating the interview transcripts from Bahasa Indonesia to English, it may be proposed that some of the meaning and context may be diluted. Key recommendations to prevent this were followed such as the fact that the researchers acted as translation moderators during concept extraction, the codes were tested against the transcripts in Bahasa Indonesia.⁵⁰ Given that most of the research team was skilled in Bahasa Indonesia and English, professional translators were not used which may be a limitation. Although trained to use standard techniques, the focus groups were conducted by different facilitators which lead to some variability of discussion content. The study involved only purposively selected participants from one province and therefore results may not be generalise to the national Indonesian context. Further, the gender distribution of participants in the focus groups was predominantly female, though this does represent the profile of pharmacy practitioners in Indonesia (male to female-20%:80%), especially in the hospital/community pharmacy sector.⁵¹ The facilitators were not independent facilitators as they were also involved with the research. However independent coding was used to reduce bias as much as possible.

5. Conclusion

Indonesian pharmacists are willing to adopt service provision roles in addition to their supply roles in the context of non-communicable chronic disease such as asthma. There is a pragmatic recognition of key barriers and enablers to changing practice settings from supply to supply and services. The barriers and enablers to this change identified by sample practitioners mirror the experience and frustrations of

entrenching health service provision as a key part of pharmacists' roles within other health care systems. Whilst of course the 'think global, act local' mantra is a key to sustaining localised change, it may be time for the pharmacy profession to draft an agenda for change at the global level in terms of expanded roles. The experience and 'learning' of academic health services can be pooled internationally and used to drive change in contexts where pharmacists are only now attempting to expand their roles.

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Conflicts of interest

None of the authors have any conflicts to declare.

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3

Appendix A. Supplementary data

Supplementary data related to this article can be found at <http://dx.doi.org/10.1016/j.sapharm.2018.01.008>.

References

- Mossialos E, Courtin E, Naci H, et al. From “retailers” to health care providers: transforming the role of community pharmacists in chronic disease management. *Health Pol (New York)*. 2015;119:628–639. <http://dx.doi.org/10.1016/j.healthpol.2015.02.007>.
- Benrimoj SI, Frommer MS. Community pharmacy in Australia. *Aust Health Rev*. 2004;28:238–246.
- Hepler C, Linda MS. Responsibilities Hepler Strand.pdf. *Am J Hosp Pharm*. 1990;47:533–542.
- Costa FA, Scullin C, Al-Taani G, et al. Provision of pharmaceutical care by community pharmacists across Europe: is it developing and spreading? *J Eval Clin Pract*. 2017. <http://dx.doi.org/10.1111/jep.12783>.
- Azhar S, Hassali MA, Ibrahim MIM, Ahmad M, Masood I, Shafie AA. The role of pharmacists in developing countries: the current scenario in Pakistan. *Hum Resour Health*. 2009;7:54. <http://dx.doi.org/10.1186/1478-4491-7-54>.
- Rayes I, Hassali M, Abdulhakem A. The role of pharmacists in developing countries: the current scenario in the United Arab Emirates. *Saudi Pharm J*. 2015;23:470–474.
- World Health Organization. Non communicable diseases fact sheet. <http://www.who.int/mediacentre/factsheets/fs355/en/>; 2017, Accessed date: 29 August 2017.
- World Health Organization. *Noncommunicable Diseases (NCD) Country Profiles*. 2014; 2014. http://www.who.int/nmh/countries/idn_en.pdf, Accessed date: 29 August 2017.
- KEMENKES RI. *Riset Kesehatan Dasar*. (RISKESDAS) 2013. 2013; 2013. <http://dx.doi.org/10.1007/s13398-014-0173-2>.
- Indonesia Ministry of Health. *Standar Pelayanan Kefarmasian di Apotek*. 2016; 2016.
- Wibowo Y, Sunderland B, Hughes J. Pharmacist and physician perspectives on diabetes service delivery within community pharmacies in Indonesia: a qualitative study. *Int J Pharm Pract*. 2016;24:180–188. <http://dx.doi.org/10.1111/ijpp.12227>.
- Puspitasari HP, Aslani P, Krass I. Challenges in the management of chronic non-communicable diseases by Indonesian community pharmacists. *Pharm Pract (Granada)*. 2015;13:578. <http://dx.doi.org/10.18549/PharmPract.2015.03.578>.
- Puspitasari HP, Parisa A, Krass I. The influence of pharmacy and pharmacist characteristics on the secondary prevention of cardiovascular disease. *Int J Clin Pharm*. 2015;37:834–843.
- Brata C, Marjadi B, Schneider CR, Murray K, Clifford RM. Information-gathering for self-medication via Eastern Indonesian community pharmacies: a cross-sectional study. *BMC Health Serv Res*. 2015;15:8. <http://dx.doi.org/10.1186/s12913-014-0670-6>.
- Alfian SD, Sinuraya RK, Kautsar AP, Abdulah R. Consumer expectation on service quality provide by pharmacist in self medication practices and its associated factors in Bandung, Indonesia. *Southeast Asian J Trop Med Publ Health*. 2016;47:1379–1384.
- Anonim. *Data Sepuluh Besar Penyakit RS Respira*. Website RS Paru Respira Jogja 2017; 2017. <http://rsrespira.jogjapro.go.id/data-penyakit/data-10-besar-penyakit/>, Accessed date: 23 August 2017.
- Wall S, Hakimi M, Sari F, et al. *How Is Indonesia Coping with its Epidemic of Chronic Noncommunicable Diseases? a Systematic Review with Meta-Analysis*. 2017; 2017.
- Collins D, Hafidz F, Mustikawati D. The economic burden of tuberculosis in Indonesia. *Int J Tuberc Lung Dis*. 2017;21:1041–1048.
- Trisnawati I, Budiono E, Sumardi S, Setiadi A. Traumatic inhalation due to merapi volcanic ash. *Acta Med Indones*. 2015;47:238–243. <http://www.ncbi.nlm.nih.gov/pubmed/26586390>.
- García-Cardenas V, Armour C, Benrimoj SI, Martínez-Martínez F, Rotta I, Fernández-Llmos F. Pharmacists' interventions on clinical asthma outcomes: a systematic review. *Eur Respir J*. 2016;47:1134–1143. <http://dx.doi.org/10.1183/13993003.01497-2015>.
- Benavides S, Rodríguez JC, Maniscalco-Feichtl M. Pharmacist involvement in improving asthma outcomes in various healthcare settings: 1997 to present. *Ann Pharmacother*. 2009;43:85–97. <http://dx.doi.org/10.1345/aph.1K612>.
- Alotaibi HS, Shivanandappa TB, Nagarethinam S. Contribution of community pharmacists in educating the asthma patients. *Saudi Pharm J*. 2016;24:685–688. <http://dx.doi.org/10.1016/j.sjps.2015.06.002>.
- Shanmugam S, Varughese J, Anandavalli Sukumaran Nair M, et al. Pharmaceutical care for asthma patients: a Developing Country's Experience. *J Res Pharm Pract*. 2012;1:66–71. <http://dx.doi.org/10.4103/2279-042X.108373>.
- Farrag RR, Zaki MA, El-Naggar T, El-Hamamsy M. Asthma patient care: the Pharmacist's perspective. *Pharmacol Pharm*. 2014;55:15.
- Kovačević M, Čulafić M, Jovanović M, Vučević K, Kovačević S, Miljković B. Impact of community pharmacists' interventions on asthma self-management care. *Res Soc Adm Pharm*. 2017(17) <http://dx.doi.org/10.1016/j.sapharm.2017.07.007> in press;
- Available online 25 July 2017.
- David WSteward, Prem NShamdasan. *Focus Groups Theory and Practice*. California: Sage Publication; 1990.
- Willis K, Green J, Daly J, Williamson L, Bandyopadhyay M. Perils and possibilities: achieving best evidence from focus groups in public health research. *Aust N Z J Publ Health*. 2009;33:131–136. <http://dx.doi.org/10.1111/j.1753-6405.2009.00358.x>.
- Hsieh H, Shannon F. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15:1277–1288.
- Elo S, Kyngäs H. The qualitative content analysis process. *J Adv Nurs*. 2008;62:107–115. <http://dx.doi.org/10.1111/j.1365-2648.2007.04569.x>.
- Kitto S, Chesters J, Grbich C. Quality in qualitative research. *Med J Aust*. 2008;188:243–246.
- Cohen B, Crabtree D. *Qualitative Research Guidelines Project*. 2006; 2006. <http://www.qualres.org/HomeLinc-3684.html>.
- Emmerton LM, Smith L, LeMay KS, et al. Experiences of community pharmacists involved in the delivery of a specialist asthma service in Australia. *BMC Health Serv Res*. 2012;12:164. <http://dx.doi.org/10.1186/1472-6963-12-164>.
- Bell CA, Eang MT, Dareth M, Rothmony E, Duncan GJ, Saini B. Provider perceptions of pharmacy-initiated tuberculosis referral services in Cambodia, 2005–2010. *Int J Tuberc Lung Dis*. 2012;16:1086–1091.
- La Nauze J. Our responsibility in a developing world: from ethics to pragmatism. *Clin Exp Ophthalmol*. 2002;30:66–71. <http://dx.doi.org/10.1046/j.1442-6404.2002.00505.x>.
- Watson M, Bond CE, Grimshaw JM, Mollison J, Ludbrook A, Walker A. Educational strategies to promote evidence-based community pharmacy practice: a cluster randomized controlled trial (RCT). *Fam Pract*. 2002;19:529–536.
- Weiner BJ. A theory of organizational readiness for change. *Implement Sci*. 2009;4:67. <http://dx.doi.org/10.1186/1748-5908-4-67>.
- OECD Health Statistics 2014-Briefing Note Indonesia. <http://www.oecd.org/els/health-systems/Briefing-Note-INDONESIA-2014.pdf>. Accessed September 8, 2017.
- Byrne A, Morgan A, Soto EJ, Detrick Z. Context-specific, evidence-based planning for scale-up of family planning services to increase progress to MDG 5: health systems research. *Reprod Health*. 2012;9:27. <http://dx.doi.org/10.1186/1742-4755-9-27>.
- Byrne A, Hodge A, Jimenez-Soto E, Morgan A. What works? Strategies to increase reproductive, maternal and child health in difficult to access mountainous locations: a systematic literature review. *PLoS One*. 2014;9:e87683. <http://dx.doi.org/10.1371/journal.pone.0087683>.
- Clumeck N. The challenge: streamlining HIV treatment and care while improving outcomes. *J Int AIDS Soc*. 2014;17:19493. <http://dx.doi.org/10.7448/IAS.17.4.19493>.
- Larson-Stoa D, Jacobs GA, Jonathan A, Poudyal B. Effect of counseling by para-professionals on depression, anxiety, somatization, and functioning in Indonesian torture survivors. *Torture*. 2015;25:1–11. doi:2013-05 [pii].
- Kotter J. *Leading Change*. Boston (MA): Harvard Business Review Press; 1988.
- Saini B, Krass I, Armour C. Development, implementation, and evaluation of a community pharmacy-based asthma care model. *Ann Pharmacother*. 2004;38:1954–1960. <http://dx.doi.org/10.1345/aph.1E045>.
- Saini B, Krass I, Armour C. Specialisation in asthma: current practice and future roles - a qualitative study of practising community pharmacists. *J Soc Adm Pharm*. 2001;18:169–177.
- Armour C, Bosnic-Anticevich S, Brilliant M, et al. Pharmacy Asthma Care Program (PACP) improves outcomes for patients in the community. *Thorax*. 2007;62:496–502. <http://dx.doi.org/10.1136/thx.2006.064709>.
- Gordois A, Armour C, Brilliant M, et al. Cost-effectiveness analysis of a pharmacy asthma care program in Australia. *Dis Manag Health Outcomes*. 2007;15:387–396. <http://dx.doi.org/10.2165/0015677-200715060-00006>.
- Naik Panvelkar P, Armour C, Saini B. Community pharmacy-based asthma services—what do patients prefer? *J Asthma*. 2010;47:1085–1093. <http://dx.doi.org/10.3109/02770903.2010.514638>.
- Naik-Panvelkar P, Armour C, Rose J, Saini B, Pharm B. Patients' value of asthma services in Australian pharmacies: the way ahead for asthma care. *J Asthma*. 2012;49:310–316. <http://dx.doi.org/10.3109/02770903.2012.658130>.
- Emmerton LM, Smith L, Lemay KS, et al. Experiences of community pharmacists involved in the delivery of a specialist asthma service in Australia. *BMC Health Serv Res*. 2012;12. <http://dx.doi.org/10.1186/1472-6963-12-164>.
- Hughes SJ, Lemay K, Saini BAC. Pharmacy Asthma Services – will evidence alone sustain them? *Aust Pharm*. 2015;1:67–72.
- KEMENKES RI. *Buletin INFARKES*. June 2013; June 2013. <http://binfar.kemkes.go.id/?wpdmact=process&did=MjEuaG90bGluaw==>.

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