Original Research

Assessment of pharmacists' knowledge, attitude and practice in chain community pharmacies towards their current function and performance in Indonesia

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Abstract

Background: The introduction of universal healthcare coverage in 2014 has affected the practice of community pharmacies in Indonesia. Studies regarding the practice of pharmacist in the chain community pharmacy setting in Indonesia are very limited. The chain community pharmacies in Indonesia are operated and controlled by the same management. The chain community pharmacies usually show better services compared to independent community pharmacies in Indonesia.

Objective: The study aimed to assess the knowledge, attitude and practice (KAP) of pharmacist working in chain community pharmacy towards their current function and performance in delivering pharmacy services

Methods: A cross-sectional study using questionnaires was conducted between January and March 2017 in KF, one of the largest chain community pharmacies in Indonesia. The total sampling method was used in the recruitment process. The data were analyzed using descriptive statistics, independent t-Test and one-way ANOVA. The KAP scores were assessed and categorized as "poor", "moderate" and "good" based on the standardized scoring system.

Results: A total of 949 KF's pharmacists (100% response rate) were participated in the study. The majority of pharmacists showed a good score in terms of knowledge and attitude, which is in contrast to practice as majority only obtained a moderate score. Working experience, age and the availability of standard operating procedures (SOP) for both dispensing and self-medication services were found to be statistically significant (p<0.005) aspects to KAP of pharmacists in delivering pharmacy services.

Conclusions: This study identified several important aspects that could affect the KAP of pharmacists working in chain community pharmacies in Indonesia. Specific policies should be conceived to improve the competencies of pharmacist and to ensure the compliance with the SOP and standardization system within pharmacy sector.

Keywords

Professional Practice; Pharmacies; Pharmaceutical Services; Pharmacists; Self Medication; Surveys and Questionnaires; Indonesia

INTRODUCTION

Community pharmacy is currently undergoing a transformation from its traditional function as a supplier of medicines towards a health hub destination.[1] Internationally, the development of policy has changed the practice of community pharmacy significantly. The increasing pressure to provide effective, efficient and affordable care under constrained healthcare budget has encouraged policymakers and professional bodies to expand pharmacist's contribution within the healthcare system.[2] For example, a number of cognitive services such as medicine use reviews (MURs), medication therapy management for chronic illness and home medication reviews (HMRs) are now widely available in pharmacies in UK, USA, New Zealand, Australia and Canada.[3,4] Moreover, community pharmacists in some of these countries have also been involved in providing services beyond their conventional scope of practice e.g. health screening, vaccination and prescribing for minor ailments.[5,6]

The need for pharmacists to change the current practice is crucial in Indonesia. The recent health care system changes marked by the introduction of universal health care coverage (Jaminan Kesehatan Nasional – JKN) in 2014 has created an opportunity for community pharmacist to be more involved in the primary care services.[7] This could provide opportunity for pharmacist to expand their roles in community care. However, on the other hand, the preparedness of pharmacist to provide such roles has become a major concern. For example, whilst Indonesia has legislation that a community pharmacy can only be operated under pharmacist's responsibility and supervision, low pharmacist presence has been evident in the large proportion of pharmacies.[8,9] The similar trend is noticeable in other low and middle-income countries (LMICs) reflecting an intractable problem towards pharmacist role expansion.[10]

Since 2018, there were 26,658 community pharmacies in Indonesia with the large proportion (>90%) are independent pharmacies.[11] The Indonesian government give no restriction in the ownership structure of pharmacy and allow corporations and non-pharmacists to own more than one pharmacy.[8] As a result, community pharmacy in

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Indonesia ranges from small independent community pharmacies to a large network of chain community pharmacies, most of which are operated in private sectors. Whilst independent pharmacy is generally owned by individual or group of individuals, the chain community pharmacy model can be classified into three main categories. The first category is chain pharmacy operated under centralized management structures. This means the local pharmacy branches must firmly follow the policy and management system as regulated by the main company for running the business including in logistic and staffing. KF, Century and Guardian are some examples of chain pharmacies operated under this model.[12] The second category is chain pharmacy operated under franchise system. This type of pharmacy allows local branches to self-regulated and use brand identity for the pharmacy operation (e.g. K-24 pharmacy).[12] The last category is buying groups pharmacy. While the first two pharmacy models are operated under organized chain system and use a unified business name, the buying groups are formed by a number of individual pharmacies to collectively increase their purchasing power, thus obtaining cheaper prices than they would possibly do individually. Apart from purchasing purposes, this type of pharmacy is independently operated by the owner.[12]

Community pharmacy in Indonesia has been known as the primary source for public to obtain medicines and pharmacy services.[13] While the majority of pharmacies focused on the supply function of medicines and retail services, there is a small proportion provided extended services such as early detection and health management services as an adjunct to dispensing model.[14] Typically, pharmacies providing such services are operating under chain model pharmacy. This is not surprising as these pharmacies generally have at least one pharmacist in duty to organize and supervise pharmacy operation.[15] Arguably, this has made such pharmacies are in greater position to maximize opportunity within the universal health care era.[7]

The evidence in other LMICs demonstrated that pharmacist working in chain pharmacies had a better understanding and attitude towards pharmaceutical care and provided more advanced services as compared to their colleagues working in individual pharmacies.[16] Nevertheless, there is a paucity of research investigating the performance of pharmacists working in chain community pharmacies in Indonesia. The corporatization of pharmacy in Indonesia on one hand has become a consolidated effort to provide better access and larger economics scale in the increased of competition and dynamic changes within pharmacy and healthcare sectors.[17] However, on the other hand, the forces of corporatization have been found to challenge the autonomy and professional rigor of pharmacists leading to moral dilemmas experienced by pharmacist regarding their professional roles.[18,19] Evidence has shown that the performances of independent pharmacies in Indonesia were below the minimum standards, however there were no evidence that the chain community or franchise model pharmacies gave the same results.[20] Therefore, this study aimed to assess the knowledge, attitude and practice of pharmacist working in chain community pharmacy towards their current function and performance in delivering pharmacy services.

METHODS

Study design and setting

A cross-sectional study was conducted between January and March 2017 using a self-developed and pre-validated questionnaire to assess the knowledge, attitude and practice (KAP) of chain community pharmacist working in KF, one of the largest chain pharmacy networks in Indonesia. All pharmacists signed the consent form and willing to participate were included in this study. The exclusion criteria included pharmacists who did not complete the survey responses.

Study instrument

The questionnaire was developed from the literatures regarding the pharmacists' work experiences and attitude towards pharmaceutical care services in Indonesia, also based on the discussion among research team and feedback from KF managerial members.[21,22] The questionnaire was developed in Indonesian language and it was consisted of five sections. Section one comprised four questions about the demographic profile including gender, age, educational level and years of working in KF. Section two (11 questions) inquiring about the pharmacy characteristics including the average number of patients, the availability of Standard Operating Procedure (SOP) and the number of workforces in pharmacy (pharmacists and non-pharmacists). Section 3, 4 and 5 focusing on Knowledge (24 questions), Attitude (34 questions) and Practice (26 questions), respectively.

Questions pertaining to KAP included concept of pharmaceutical care, services evaluation, patient expectation, understanding and compliance regarding drug therapy. A correct answer for each item of knowledge was given a score of 1, while wrong and unsure answer were marked as 0 (zero). The Likert scales were adopted in the section of attitude (four scales ranging from strongly agree to strongly disagree) and practice (four scales ranging from always to never), respectively. Highest score (4 points) reflected the most positive option and the lowest score (1 point) reflected the most negative option. The maximum score from each KAP aspect was used to rank the level of knowledge, attitude and practice, respectively. Subsequent analysis was conducted to classify the score as "poor" (low score), "moderate" (medium score) and "good" (high score). For example, if the respondent answered all questions correctly in Knowledge aspect, 24 scoring points were given. The total of 24 points were divided into three categories in which 0-8 points attributed to poor, 9-16 points attributed to moderate and 17-24 points attributed to good knowledge.

The representatives of the Faculty and KF examined and approved the face and content validity of the questionnaire. The questionnaire was then piloted to ten KF's pharmacists resulted in minor changes on the wording and questionnaire lay-out. The Internal consistency of the modified questionnaire was measured using Cronbach

Table 1. Characteristics of participants (N=949)	
Characteristics	**n (%)**
Gender	
Male	390 (41.1)
Female	559 (58.9)
Age group (years)	
≤ 30	694 (73.2)
31-40	172 (18.1)
41-50	58 (6.1)
> 50	25 (2.6)
Educational level	
Undergraduate + Pharmacist	915 (96.4)
Master + Pharmacist	33 (3.5)
Doctor + Pharmacist	1 (0.1)
Working experience in KF (years)	
< 5	728 (76.7)
5-10	111 (11.7)
11-15	49 (5.2)
> 15	61 (6.4)

Table 2. Characteristics of KF pharmacies (N=949)	
Characteristics	**n (%)**
The average number of patients with prescriptions per day	
< 20	462 (48.7)
20-50	278 (29.3)
51-100	140 (14.8)
> 100	69 (7.2)
The availability of SOP for dispensing prescribed medicines	
Available	855 (91)
Not available	94 (9)
The average number of patients for self-medication per day	
< 20	80 (8.4)
20-50	348 (36.7)
51-100	339 (35.7)
> 100	182 (19.2)
The availability of SOP for self-medication services	
Available	811 (85)
Not available	138 (15)
The average number of patients purchasing medical devices with prescriptions per day	
< 20	867 (91.4)
20-50	63 (6.6)
51-100	11 (1.2)
> 100	8 (0.8)
The number of pharmacists in each pharmacy	
1	813 (85.6)
2	113 (11.9)
3	12 (1.3)
4	6 (0.6)
5	3 (0.3)
> 5	2 (0.2)
The number of pharmacy assistants in each pharmacy	
1	247 (26)
2	406 (42.8)
3	118 (12.4)
4	97 (10.2)
5	38 (4)
> 5	43 (4.5)
The number of other pharmacy staffs (non-pharmacists and non-pharmacy assistants)	
1	819 (86.3)
2	87 (9.2)
3	23 (2.4)
4	8 (0.8)
5	3 (0.3)
> 5	9 (0.9)
SOP = Standard operating procedure	

Alpha resulting coefficient 0.724 reflecting good internal consistency of the questionnaire (>0.70). Ethics approval was not deemed necessary as the study was part of internal audit to observe performance of pharmacists and pharmacy.[23] However, each participant was required to provide signed consent prior to fill the questionnaire. In addition, participants received information about the nature of the study and procedure for completing the questionnaire.

Participants and data analysis

The study used a total sampling method to recruit all community pharmacists (n=949) working in 825 KF pharmacy outlets throughout the country (34 provinces). The questionnaire was distributed to each pharmacist through KF system in which the research team was provided access to collect the results. The data were analyzed using SPSS v22. The categorical variables were presented as frequencies and percentages while the continuous variables were reported as mean and standard deviation (SD). Independent t-Test and one-way ANOVA were used to compare means between KAP groups with p-value <0.05 was considered to be statistically significant. To address the objective of this study, five variables were analyzed as indicator for pharmacists' performance in delivering services with respect to their KAP, namely working experience, age, educational level and the availability of SOP for both dispensing and self-medication services. These variables were selected as they were intrinsic factors that contribute to the performance of individual pharmacist in delivering the service.[24]

RESULTS

A total of 949 pharmacists returned the questionnaire resulting in 100% response rate. The majority of participants are female. Most of the participants are novice pharmacists with aged less than 30 years old with working experience in KF less than 5 years. Characteristics of the respondent are provided in Table 1.

The majority of pharmacies served less than 20 patients with prescriptions each day (Table 2). In contrast, the provision of self-medication was relatively high with 20-100 patients were treated as self-medication per day. As a

corporate chain pharmacy network, the availability of SOP for services is highly important. Although all pharmacies were expected to have SOP for delivering their services as required by the legislation, there was small yet significant proportion which deviated from such policy, both SOP for dispensing services (9%) and SOP for self-medication services (15%), respectively.[25]

It was not surprising that majority of participants had good knowledge and attitude about their function and services they provided in pharmacy. However, the overall score for practice reflected a contradiction to this notion. The majority of participants only had moderate practice with relatively high proportion scored poor practice (15%). Table 3 shows the distribution of score for KAP and frequency of participant with particular level of KAP.

Table 4 displays the comparison between KAP and selected variables. Three statistically significant differences (p<0.05) were found namely (1) between attitude-practice and working experience, (2) between attitude-practice and age,

Table 3. Distribution of KAP score and frequency of participant with particular level of knowledge, attitudes and practice.	Mean (SD)	Minimum	Maximum
Total knowledge score	22.73 (1.77)	14	24
Total attitude score	119.99 (11.98)	89	136
Total practice score	85.75 (12.29)	47	104
	Poor	Moderate	Good
Number of participants with particular level of knowledge. n(%)	-	7 (0.7)	942 (99.3)
Number of participants with particular level of attitude. n(%)	-	92 (9.7)	857 (90.3)
Number of participants with particular level of practice. n(%)	146 (15.4)	803 (84.6)	-

and (3) between knowledge-attitude-practice and availability of SOP both for dispensing and self-medication services. There was no significant difference in terms of educational level with the KAP score.

With respect to working experience, it was found that pharmacists who worked for 5-10 years in KF had the lowest score for attitude and practice. Pharmacist aged of 31-40 had the lowest level of attitude, while the age above 50 years had the lowest score of practice. Moreover, pharmacies which did not have SOP resulted in the lowest score in three elements of KAP.

DISCUSSION

This study aimed to assess KAP of pharmacists working in Indonesian chain community pharmacy towards their function and performance in delivering pharmacy services. There were three main findings which should be part of concerns both for pharmacists as a profession and pharmacy stakeholders particularly the owners/managers of pharmacies in Indonesia. Firstly, it was observed that pharmacists who already worked for 5 to 10 years showed the lowest score in terms of attitude and practice. While this study was unable to explore the factors behind such result, pharmacists' burnout, job stress and dissatisfaction to work were reported to moderately increase in the later stage of work.[26] The escalating pharmaceutical demand and dynamic changes in pharmacy practice have contributed to the increase of pharmacists' workload and requirement for more interpersonal interaction with the patients.[27] A number of literatures mentioned that individuals who already worked for 10 years in particular setting tend to experience exhaustion and burnout feeling from their works.[28-30] Specific to KF, the low volumes of prescription in contrast to high volumes of self-medication consultations to some extent may have put pharmacist under constant pressure of conflict of interest affecting their professionalism. It is true that pharmacist can play unique role in self-medication for instance by facilitating individuals for appropriate self-care or medication.[31] However, in environment where commercial-consumerism influences inflict with personal-professional decision like in pharmacy, such practice can be problematic. Several studies highlighted the lack of pharmacist ability to consistently and appropriately facilitate self-medication which may lead to adverse reaction and public risk e.g. drug resistance.[32,33] Such situation is without a doubt affecting pharmacists' behavior in delivering services which may become greater concern in the future if it goes unrecognized and untreated. This study implied that pharmacists are in a need of professional practice development to update, refresh and maintain their professional roles and competence. Such attempt may take in a number of forms ranging from an individual training and continuing education to a collective practice building such as teamwork exercise.

Table 4. The comparisons between KAP and selected variables		Knowledge			Attitude			Practice		
Variable	N	Mean	Std. Error	Sig.	Mean	Std. Error	Sig.	Mean	Std. Error	Sig.
Working experience in KF (years)*										
< 5	728	22.780	0.063	0.336	120.0618	0.438	0.005[+]	86.520	0.441	0.015[+]
5-10	111	22.522	0.192		116.3604	1.229		81.657	1.227	
11-15	49	22.551	0.331		121.7551	1.666		83.612	1.829	
> 15	61	22.721	0.195		124.4262	1.343		85.852	1.760	
Age (years)*										
≤ 30	694	22.796	0.063	0.336	119.956	0.450	0.005[+]	86.448	0.455	0.015[+]
31-40	172	22.564	0.154		118.546	0.973		83.337	0.959	
41-50	58	22.620	0.240		125.034	1.262		85.982	1.671	
> 50	25	22.440	0.416		119.400	2.509		82.760	2.990	
Educational level*										
Undergraduate + pharmacist	915	22.732	0.058	0.772	119.875	0.396	0.229	85.617	0.403	0.119
Master + pharmacist	33	22.757	0.261		123.060	2.077		89.212	2.492	
Doctor + pharmacist**	1	24.000	-		130.000	-		101.000	-	
The availability of SOP for dispensing prescribed medicines**										
Available	855	22.773	0.060	0.043[+]	120.366	0.406	0.004[+]	86.349	0.414	<0.001[+]
Not Available	94	22.383	0.190		116.638	1.286		80.383	1.312	
The availability of SOP for self-medication services**										
Available	811	22,812	0.061	0.001[+]	120.607	0.416	<0.001[+]	86.612	0.422	<0.001[+]
Not Available	138	22,275	0.159		116.4058	1.029		80.739	1.070	
*Using one-way ANOVA to compare means between three or more groups										
**Using Independent *t* Test to compare means between two independent groups										
[+]Statistically significant (*p*<0.05)										

Secondly, age of pharmacists influences the attitude and practice in delivering care regardless their knowledge and educational level. Pharmacists in KF were found to have overall good knowledge and understanding about their function and performance in services. This is perhaps due to the fact that they have pursued adequate educational program and acquired basic and essential knowledge to become a pharmacist. Additionally, the corporate system in KF may have forged this knowledge through capacity building program.[34] However, pharmacists who fall into particular group of age had the lowest score for attitude (31-40 years old) and practice (>50 years old) which becomes a fact that should not be ignored by KF. It is not surprising that pharmacists in the late career or pension age may experience a diminished performance and function. Several studies have indicated that pharmacists who have been in the profession for 30 years may intend to leave the profession.[35,36] What might be greater concern is that early career person, 31-40 years as reflected in this study, also experienced a decreasing attitude towards their practice. This may a warranty to examine developmental process between career and life stage especially in KF. A study by Magola *et al.* indicated that early-career pharmacist was challenged with the same routine and responsibilities in the pharmacy as late-career pharmacist.[37] This may influence the transition of novice practitioners into practice and having negative implications for patient care. Pharmacists in this group of age are likely to find certain things – desire, expectation and motivation to deserve more – in work which are translated in their attitudes and intentions.[38] The ability to identify and response to such condition can be a winning program for a pharmacy particularly KF. What is perhaps interesting is the finding that pharmacist aged 41-50 years showed better overall KAP results as compared to the early and late career pharmacist. In terms of career management, this study argued that mid-career professionals may have developed resilience and adaptability, both intellectually and personally in viewing their career.[39] A number of studies underlined that mid-career level professionals have strong commitment and endorsement for learning, increasing autonomy and supporting others.[40-42] The key challenge, however, is to maximize such adaptive behavior to help pharmacists realize their career aspirations and hone their full potential constructively.

Thirdly, the availability of SOP significantly influenced the KAP of pharmacists. This study revealed that pharmacies that were not equipped with SOP for services proved to have the lowest level of three element of pharmacists' KAP. WHO and FIP have underlined the importance of having SOP as step-by-step guidance for good pharmacy practice.[43] The findings in England and Wales showed that the availability of SOP has helped pharmacist in applying procedures to their everyday work. This is particularly the case for novice pharmacists which were relied on SOP as a guide to practice.[44] In Indonesia, pharmacies are required to have a number of SOP from the procurement, storage of medicines, dispensing and services to elimination of expired medicines.[25] This study adds to this notion that the availability of SOP can be an indicator for good pharmacy practice and therefore it is essential for the government and pharmacy stakeholders to ensure that SOP for service

is available in every pharmacy. Learning from KF, a top down approach can be one way to encourage the availability of SOP. The fact that pharmacies involved in this study were operated under centralized management might explain why there was only small proportion of pharmacies without SOP in KF. It is important to note that centralized management system as developed by KF is likely to reduce variation and gap of performance between pharmacies which is common in pharmacies operating in LMICs.[45] Alternatively, the government in LMICs can endorse the availability of SOP for example by including requirement to have SOP prior seeking approval and renewal of pharmacy permits which is currently the norm in Indonesia.

To the best of our knowledge, this is the first study examining KAP of pharmacists towards their function and performance in delivering pharmacy services in the setting of chain pharmacy in Indonesia. The findings of this study provoke deeper understanding about pharmacists' role and behavior and provide insight to the influence of a number of important aspects such as age, working experience and availability of SOP for services. This is similar to the findings of a study by Schafheutle *et al.* concluding that age and factors associated with workplace affected pharmacists' performance.[24] In addition, this study also highlights three main tasks for policymakers and pharmacy stakeholders in Indonesia. First, as a pharmacist continues to age and he/she constantly experiences pressure for change, there is significant need for training and competency development program to improve pharmacist's professional practice. Such training may comprise any unique approach to boost the cognitive, moral, emotional and social side of the pharmacist. Second, despite there are policies in place that requires pharmacy to have SOP, the evaluation for compliance to the SOP is unnoticed. This reflects more specific efforts should be made to ensure pharmacy compliance with the regulation and relevant documentation system. Third, this study demonstrates that practice of pharmacist in chain community pharmacies is overrated despite the good level of knowledge and attitude as shown by the pharmacists. As the co-existence of chain and independent pharmacies is crucial to Indonesian healthcare system, it is imperative that there is a standardization system e.g. accreditation program to ensure that community pharmacy meets the minimum standard for practice. Such program is literally not available in Indonesian pharmacy legislation.

This study, however, is not without limitations. The administration of the questionnaire which is part of internal audit process may affect the integrity and honesty of the response. While the research team strived to ensure that participation in this study did not affect individual pharmacist *per se*, there is no guarantee that such method was effective to overcome bias in participants' response. Subsequently, despite the effort to measure pharmacist KAP based on five selected variables, this study did not analyze other variables such as the number of patients, number of pharmacists and other pharmacy characteristics which may or may not influence the KAP results. This is a call for further research to observe other variables using KAP approach.

CONCLUSIONS

This study examines pharmacist's function and performance working in chain pharmacy in Indonesia which can be an insight for policymakers and managers/owners in the context of LMICs. Using KAP approach, this study highlights that working experience, age and availability of SOP for services are significant aspects affecting pharmacists' function and performance. Evidence of poor practice were apparent indicating an imperative for improving pharmacist competence, ensuring compliance to SOP and standardization system in pharmacy.

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