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RESEARCH ARTICLE

The evident gap between actual and perceived facilities supporting value-added pharmacy services

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Abstract

Introduction: Whilst there is an emerging need to provide Value-Added Pharmacy Services (VAPS), the facilities in community pharmacy may not be supportive to implement this concept. **Aim**: This study aims to evaluate the actual and perceived facilities supporting VAPS. **Methods:** A cross-sectional survey was conducted to selected fifty pharmacies in Surabaya Indonesia. Respondents were asked about their agreement towards VAPS and facilities required for providing VAPS. The results were analysed using descriptive statistics. **Results**: All respondents agreed that pharmacy is in need to provide VAPS. In addition, they viewed the presence of facilities supporting VAPS are urgent. However, the availability of such facilities in the actual practice was relatively limited, highlighting underinvestment to provide VAPS. **Conclusion**: There is a gap between actual and perceived facilities supporting VAPS. This highlights more investments to upgrade pharmacy facilities.

Introduction

The role of pharmacists in the community has evolved over the years from compounding raw materials to medication management and public health-related pharmacy services, which encompasses a range of activities, including educating, screening, monitoring therapy and surveillance for both individual patients and communities (Hermansyah *et al.*, 2017). These services are not always related to the selling of medicines. Some published articles refer to these services as extended pharmacy services, which plays as an adjunct to the "traditional" pharmacist dispensing role (Edmunds & Calnan, 2001; Perraudin *et al.*, 2016). Some articles called these newly emerging services as Value-Added Pharmacy Services (VAPS) given their characteristics which add value to the medication use process and patient care outcomes (Malone *et al.*, 1993; Tan & Gan, 2016; Desselle *et al.*, 2019).

The definition of VAPS can be elusive as some researchers used VAPS to coin pharmacist or pharmacy services beyond the dispensing and professional consultations, whilst others might reflect VAPS as activities that add value to pharmacist work. The latter can exert a number of outcomes such as cost reduction effect and improved treatment, with some authors pointed at innovation and creativity to improve pharmaceutical care. Despite the elusive definition, experts-viewed delivery of VAPS can be substantial for health care and pharmacist role. In fact, some governments perceived VAPS as a "positive action to improve health care and to ensure a high-quality health system that is customer-oriented" (Tan & Gan, 2016).

The provision of VAPS, however, cannot be separated from the supports of facilities available at the pharmacy. For instance, pharmacies in Malaysia were reported to deliver VAPS in the form of drive-through services, pharmacy appointment systems and medicine by post (Tan *et al.*, 2015). These services were claimed to reduce waiting time, ease the refill of medications and increase patient convenience than conventional pharmacy services. Nevertheless, to smoothly apply such system, it

can be predicted that a community pharmacy needs to invest in some facilities which might not be commonly available in many typical pharmacies, i.e. software or application, spacious pharmacy setting and Short Message Service (SMS) push system as a reminder. In principle, VAPS can take in many different forms, but pharmacists and pharmacies ought to be ready for some changes, which is perhaps difficult and costly to do in the beginning.

Community pharmacy in Indonesia is also in the midst of change, particularly after the Universal Health Coverage was introduced in 2014 (Hermansyah *et al.*, 2018a). For example, Medication Therapy Management has increasingly become an acceptable norm to improve the outcomes of pharmacy services (Prasetio *et al.*, 2019). While innovations in health and pharmacy services have been driven towards cost containment, the core of pharmaceutical care, which focuses on patient's interests, remains intact. Some VAPS, such as courier services, telepharmacy and drug reminder systems, which might be costly, are still a new concept, and the general population might not fully utilize these services (Hermansyah *et al.*, 2020). However, adoption of these services in the future is perhaps inevitable, particularly after the Covid-19 pandemic has hardly hit the Indonesian health care system. Therefore, it is important to understand pharmacy preparedness to such changes, particularly related to the investment of facilities.

To the best of the authors' knowledge, there is a paucity of study that explores pharmacy facilities supporting VAPS in Indonesia. Therefore, this study aims to fill such gap by evaluating the actual and perceived facilities invested for the delivery of VAPS in the context of Indonesian community pharmacies.

Methods

Study design and setting

A cross-sectional study in the form of a survey was conducted between February and April 2019. This study included community pharmacies that operate in the public spaces, shopping centres, neighbourhood environments and community pharmacies affiliated with universities, i.e. teaching pharmacy in Surabaya, the second biggest city in Indonesia. One key respondent represented each pharmacy. They can be the pharmacist, the owner or the pharmacy staff. This study is low-risk research in which the only foreseeable risk is one of discomfort, particularly when completing the survey. Therefore, ethics approval was not deemed necessary.

Participants

Given the paucity of information regarding community pharmacies that fits the characteristics of this study, this study purposively selected 50 pharmacies. The researchers selected pharmacies that represents all five districts in Surabaya (northern, western, southern, eastern and central Surabaya), and these pharmacies were invited for the survey.

Data collection

A printed self-administered questionnaire was distributed by the researchers on hand. Initial contact was made prior to distribute the questionnaire. This includes a package of invitations to the survey, an information sheet and the questionnaire. When the pharmacy was able to participate, the package was provided, and informed consent was obtained in return. Pharmacy which withdrew from participation could not pass the questionnaire to another pharmacy, and no replacement survey was provided. In addition to the survey, reminder calls were made every month to non-respondents. No financial compensation was offered to respondents. Once respondents completed the questionnaire, they can send the questionnaire by post or asked the research team to pick it up.

The questionnaire was developed based on the references and discussions within the research team. The questionnaire used in this study was developed in two stages. The first stage was to conduct validity testing involving four experts, all of them had a background as academic pharmacists, to refine the face and content of the questionnaire. The questionnaire was then subsequently pre-tested to three community pharmacies (one independent pharmacy, one chain pharmacy and one pharmacy affiliated with the university). No major changes were made after the pre-test concluded. The final version of the questionnaire asked several questions, including respondent characteristics, perception towards VAPS and facilities supporting VAPS, the availability of the facilities and willingness to invest in facilities for delivering VAPS.

Data analysis

Descriptive statistics were used to report respondent characteristics and to highlight the findings. All data analysis was performed using Microsoft Excel.

Results

Of 50 pharmacies, 20 were deemed ineligible due to a number of reasons, such as two pharmacies were no longer in the business, one pharmacy withdrew its participation, and 17 pharmacies were not willing to participate in the study. Thirty respondents completed the

questionnaire. Table I shows the characteristics of the respondents. Respondents were dominated by females (83%), with the majority were aged between 19 and 39 years old (77%) and had a minimum qualification of bachelor's degree (93%). Pharmacists represented the predominant profession (94%). Most of the pharmacies have operated within ten years (60%), owned by individuals (60%) and operated as independent pharmacies (67%), with almost evenly split in terms of pharmacy location, in the sideways of the main road or in the residential (47%, 43%), respectively.

Table I: Characteristics of the respondents

Characteristics	Frequency (%)
Gender	
• Male	5 (17)
• Female	25 (83)
Age	
• 19-29	12 (40)
• 30-39	11 (37)
• 40-49	4 (13)
• 50-59	2 (7)
• > 60	1 (3)
Latest educational degree	
• Secondary degree	2 (6)
• Undergraduate	25 (83)
• Graduate	3 (10)
Workforce status	
• Pharmacist	28 (94)
• Non-pharmacist/technician	2 (6)
How long has the pharmacy been operated?	
• < 1 year	1 (3)
• 1-10 years	17 (57)
• 10-20 years	6 (20)
• > 20 years	6 (20)
Ownership	
• Owned by individual	18 (60)
• Owned by a company/institution	12 (40)
Type of operation	
• Independent pharmacy model	20 (67)
• Pharmacy franchise/banner group	10 (33)
Pharmacy location	
• Sideways of the main road	14 (47)
• In the neighbourhood/residentials	13 (43)
• In the shopping centre	3 (10)

Table II highlights respondents' perceptions of VAPS. All respondents agreed that a community pharmacy should provide VAPS, and therefore, investment for VAPS is substantial. Table III shows respondents' perception of facilities supporting VAPS and the availability of such facilities in the current pharmacy setting. In general, respondents viewed the importance of owning some facilities that may support VAPS. However, there are several facilities that were considered less important in relation to VAPS, such as pharmacy websites and vehicles for delivery. Accordingly, the availability of these facilities was not dominant in some pharmacies. In addition, there is a significant number of pharmacies (approximately 20%) that did not have software and cashless payment method to support VAPS.

Table II: Perception towards VAPS

Statement	Frequency (%)			
	Strongly agree	Agree	Disagree	Strongly disagree
Delivery of pharmacy services must be quick, practical, responsive and accessible	19 (63%)	11 (37%)	0	0
General public demands VAPS	17 (57%)	13 (43%)	0	0
Investment on facilities is important to support delivery of VAPS	11 (37%)	19 (63%)	0	0
The availability of facilities can boost innovation in services	10 (33%)	20 (67%)	0	0
Investment on facilities can improve management of pharmacy	15 (50%)	14 (47%)	1 (3%)	0
Investment on facilities can reduce waiting time	12 (40%)	18 (60%)	0	0
Investment on facilities can increase patient satisfaction	15 (50%)	15 (50%)	0	0
Investment on facilities can improve patient access to drug information and education	12 (40%)	18 (60%)	0	0

Table IV demonstrates the respondent's willingness to invest in facilities supporting VAPS. Despite the importance of the investment in the facilities, as illustrated in Table III, more than half of the respondents (60%) did not plan to install or upgrade facilities that were available in the current practice. The lack of space in the pharmacy (57%) and the shortage of workforce to provide VAPS (44%) were the top two reasons why pharmacies were reluctant to invest in delivering VAPS and facilities. On the contrary, pharmacies that were going to invest on facilities (40%) preferred to upgrade the software in order to keep up with the demand for providing VAPS.

Table III: Perception towards facilities supporting VAPS and the availability of the facilities at the pharmacy

Type of facility*	Is it important to support VAPS?				Is it currently available at the pharmacy?		
	Very important (%)	Important (%)	Slightly important (%)	Not at all important (%)	Yes (%)	No %	Why is it not available? ** (%)
Telephone	20 (67%)	10 (33%)	0	0	30 (100%)	0	N/A
Computer	20 (67%)	9 (30%)	1 (3%)	0	28 (93%)	2 (7%)	Computer is broken (50%) Waiting for new computer installation (50%)
Email address	13 (43%)	13 (43%)	4 (13%)	0	26 (87%)	4 (13%)	Not necessary to have (100%)
Pharmacy website	8 (26%)	11 (37%)	11 (37%)	0	12 (40%)	18 (60%)	Not necessary to have (85%) Pharmacy is currently developing website (15%)
Internet connection	19 (64%)	10 (33%)	1 (3%)	0	27 (90%)	3 (10%)	Not necessary to have (67%) Waiting for internet installation (33%)
Software for inventory management	23 (77%)	7 (23%)	0	0	26 (87%)	4 (13%)	Not necessary to have (50%) Waiting for software installation (50%)
Software for purchasing and selling record	23 (77%)	7 (23%)	0	0	26 (87%)	4 (13%)	Not necessary to have (50%) Waiting for software installation (50%)
Software for accounting and finance	17 (57%)	12 (40%)	1 (3%)	0	23 (77%)	7 (23%)	Not necessary to have (72%) Waiting for software installation (28%)
Software for supporting drug information	20 (67%)	10 (33%)	0	0	23 (77%)	7 (23%)	Not necessary to have (72%) Waiting for software installation (28%)
Patient medication record system / documentation	15 (50%)	14 (47%)	1 (3%)	0	19 (63%)	11 (17%)	Not necessary to have (72%) Lack of workforce (28%)
Cashless transaction payment / machine	13 (43%)	14 (47%)	3 (10%)	0	23 (77%)	7 (23%)	Not necessary to have (100%)
Air conditioning system	15 (50%)	12 (40%)	3 (10%)	0	24 (80%)	6 (20%)	Not necessary to have (100%)
Parking space	21 (70%)	9 (30%)	0	0	29 (97%)	1 (3%)	No additional space (100%)
Customer waiting room	19 (63%)	11 (37%)	0	0	29 (97%)	1 (3%)	Not necessary to have (100%)
Printed drug information materials	10 (33%)	20 (67%)	0	0	28 (93%)	2 (7%)	Not necessary to have (100%)
Vehicle for delivery	9 (30%)	13 (43%)	8 (27%)	0	17 (57%)	13 (43%)	Not necessary to have (100%)

*Facility that belongs to the pharmacy, not owned by individual
**Only for respondents answering No

Table IV: Willingness for investment on facilities supporting VAPS

Are you going to invest on more facilities to support VAPS?			
Yes = 12 (40%)		**No = 18 (60%)**	
Type of facilities invested	**Frequency (%)***	**Reasons for no investment**	**Frequency (%)***
• Upgrading software	5 (42%)	1. No space available in the pharmacy	10 (57%)
• Website	3 (25%)	2. Shortage of workforce	8 (44%)
• Laptop / computer	2 (17%)	3. Lack of funding to train current workforce (current workforce is not qualified to provide VAPS)	6 (33%)
• Television	2 (17%)		
• Vehicle for delivery	2 (17%)	4. Current facilities have met the minimum standard	6 (33%)
• Patient Medication Record	2 (17%)		
• Wi-Fi connection	1 (8%)	5. Lack of funding for investment on facilities	5 (28%)
• Email account	1 (8%)		
• Cashless transaction payment	1 (8%)		
• Children playground	1 (8%)		
• Barcode pricing system	1 (8%)		
• Membership card	1 (8%)		

*Respondents can answer more than one option. Frequency was calculated based on each Yes/No
Proportion e.g. three people answering for website scores 25% (3/12 x 100% = 25%)

Discussion

The provision of VAPS in a pharmacy setting is inevitable. The pharmacy must adapt to the contemporary situation, which is marked by shifting lifestyle and healthcare orientation from curative towards promotion and prevention. Such imperative, however, requires investment which sometimes is significantly affecting the operation and financial viability of the pharmacy. Therefore, pharmacists must seek balance and, to some extent is being forced to trade-off between more investments and maintain the current practice.

To the best of the authors' knowledge, this is the first study that acknowledges the importance of providing VAPS in Indonesia. The respondents involved in this study represented three main types of pharmacy affiliation in Indonesia, namely independent pharmacy, franchise pharmacy and pharmacy affiliated with university or teaching pharmacy. It is fair to say that these three types of pharmacy have their own orientation and mission, which will determine their intent to provide VAPS and investment on facilities supporting VAPS. For instance, the independent pharmacy model tends to maximize the pharmacy services and engagement with the customer rather than competing on price and variety of products as often found on the model of franchise pharmacy (Athiyah *et al.*, 2019). However, the similarity occurs as both pharmacy models are profit-oriented.

Conversely, teaching pharmacy much focuses in facilitating pharmacy students to acquire knowledge and skills prior to enter the practice field. This way teaching pharmacy cannot be fully profit oriented as they have mission for preserving the value of education in the practice.

The findings in this study reflected that there was a common agreement from the participating pharmacies regarding the need to change in the current practice. Respondents also agreed that investment for facilities supporting VAPS is significant for pharmacy operations. This may highlight that pharmacy, despite their business models and scale of economy, sees the future ahead will rely on the provision of VAPS (Singleton & Nissen, 2014). Such attitude implies the urgency for pharmacy to change. On the one hand, this is good news given that many pharmacies, particularly in the developing countries, including in Indonesia, were not aware or perhaps neglected the fact that pharmacies cannot do business as usual (Hermansyah *et al.*, 2012).

The shifting practice towards patient orientation in the form of VAPS and cognitive services should be part of the current paradigm of practice and streamlined into the pharmacy business model. On the other hand, change towards VAPS is not easy. The investment for providing VAPS may require an overhaul to pharmacy operation and such dramatic change is unlikely to happen in the majority of pharmacies (Doucette *et al.*, 2012). The existing facilities on the pharmacy may determine the state of investment required for providing VAPS. For instance, a pharmacy that already has a computer and internet connection may further invest in attracting larger customers by becoming an "online" pharmacy. By online in this particular meaning supports the broader recognition with which customers can have more access to contact pharmacy and to obtain pharmaceuticals and other products through a distant purchasing.

Despite the majority of pharmacies in this study already owned a number of facilities supporting VAPS, there is a concern that some facilities were not in place. This is particularly true for pharmacy websites, patient

medication record systems, and vehicles for delivery. Like the aforementioned, the website for a pharmacy can reflect a number of benefits. First, the availability of a website provides a venue for customers to stay connected with the pharmacy and be informed of the innovations as developed by the pharmacy. Second and more importantly, information on the website can go beyond the walls of the pharmacy. This will open up more possibilities not only to reach larger customers but also to provide care for a wider population (Bate & Hess, 2010). The latest report from the Indonesian Internet Provider Association found that 197 million people of Indonesian (approximately 77% of the population) used the internet every day, with the average time spent is eight hours per day (Indonesia Internet Service Provider Association, 2020). A good website, therefore, will give pharmacies the opportunity to grow. Likewise, the presence of patient medication records is essential to pharmacy practice. Good documentation of patient's medication serves the interest of the pharmacist, and it provides up-to-date information for continuity of care of the patients (Ojeleye *et al.*, 2013). The availability of vehicles comes with the innovation for telepharmacy and delivery services. The ongoing Covid-19 pandemic has witnessed dramatic change to pharmacy practice, with more pharmacies trailed to provide distant pharmacy care. Pharmaceutical deliveries have been seen as beneficial to cope with the situation, which limits face to face interaction between pharmacists and the customers (Koster *et al.*, 2020).

It is important to note that investing on facilities supporting VAPS is not on the agenda of most pharmacies participating in this study. On the one hand, this might reflect that the current facilities in the pharmacy can be assumed as sufficient to support the delivery of VAPS. Community pharmacy in Indonesia abides by the Presidential Decree 9 of 2017 regulating community pharmacy, including its facilities, operation and resources (Hermansyah *et al.*, 2020). This means pharmacies in this study not only has met the standard but also has the potential to provide VAPS. Therefore, further investment on facilities may not be necessary. However, on the other hand, the dynamics of change in the health and pharmacy sector in tandem with the ongoing Covid-19 infection in Indonesia may pose a challenge to community pharmacy viability in the future.

Delivering VAPS perhaps is not an option, but it is inevitable for a pharmacy. The lack of space, shortage of workforce and lack of skills which have limited pharmacy to deliver VAPS, as indicated in this study, might require reorganisation of the pharmacy structure and setting. Whilst spacious pharmacy outlet is always the "ultimate expectation", optimising the workplace condition and staffing support can be an alternative to most pharmacy settings in Indonesia (Hattingh *et al.*, 2016). This study argued that the option to optimise workplace conditions imposed advanced services and more attention towards safety and effectiveness. Likewise, staffing support particularly is directed to pursue continuing education which can reduce the errors and misses which may compromise patient safety (Hermansyah *et al.*, 2018b). Nevertheless, these approaches should be considered in light of pharmacy capacity.

Some limitations to this study should be noted. The number of participants and the response rate was low. As such, it is not possible to claim that this study represents the profile of community pharmacy in Indonesia. However, this study may provide background information about the pharmacy landscape in Indonesia with respect to the delivery of VAPS. There is also a possibility of social desirability bias where the respondents may perceive favourable responses in relation to the topic. This is possible, given the nature of the study. Other limitations are associated with the facilities included in the questionnaire, which differs from other studies focusing on VAPS. For example, drive-thru pharmacy is perhaps virtually non-existent in the Indonesian pharmacy sector. Only quite a few pharmacies offer such service. This means the applicability of this study may depend on the capacity, setting and organisation of the pharmacy. Further studies might be needed to address such issues.

Conclusions

There is a gap between actual and perceived facilities supporting VAPS. This highlights more investments to upgrade pharmacy facilities. However, investing on facilities cannot ignore pharmacy capacity and operation. As such, community pharmacies and pharmacists might need to consider optimising workplace conditions and better staffing supports.

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