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# Relationship between performance barriers and pharmacist competency towards the implementation of an expanded public health pharmacy role.

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# **Relationship Between Performance Barriers and Pharmacist**

## **Competency towards the Implementation of an Expanded Public Health**

### **Pharmacy Role.**

#### **Abstract**

**Objective:** The objective of this study was to examine the relationship between performance barriers and competency, and implementation of an expanded public health role for community pharmacists. ,

**Methods:** A validated questionnaire was utilized for this study whereby 3 variables of the study (performance barriers, competency and public health role) were measured using a 5-point Likert scale. Three hundred questionnaires were distributed to target respondents of registered community pharmacies in 5 states (Johor, Negeri Sembilan, Selangor, Perak and Penang) in Malaysia. The data were analysed utilizing the principles of structural equation modelling.

**Results:** There were 191 completed and usable responses received, which represented a 66.7% response rate. This study showed perceived competency had a direct relationship with delivering a general public health role. A perceived lack of competency was shown to be a barrier to fulfilling a public health role. However, other factors, such as design of premises, IT infrastructure and pay, were not viewed as barriers to carrying out a public health role.

**Conclusion:** Perceived competency is an obstacle for community pharmacists to undertake a public health role in Malaysia. Adequate training programs in pharmaceutical public health have to be put in place to address this concern and this should therefore be a priority.

**Keywords:** *performance barriers, competency, public health role, community pharmacist, pharmaceutical public health, pharmacy practice.*

## 1. INTRODUCTION

Globally, pharmacists' roles have undergone tremendous change over the last century resulting in a more diversified yet highly relevant profession. Pharmacy practice has moved away from its original focus on medicine supply and compounding towards that of service and information provision and ultimately that of a provider of patient care<sup>[1-3]</sup>. This concept became known as pharmaceutical care and was viewed as an evolutionary change for the pharmacy profession<sup>[4, 5]</sup>. Pharmacists have had to develop different skills and attitudes, in order to embrace this new responsibility with success. Indeed, the World Health Organization has described these characteristics in their concept of a 7 star pharmacist<sup>[6]</sup>. Adoption of these criteria will enable the pharmacist to optimize healthcare provision.

During the last decade, there has been considerable interest and research activity into the public health role of pharmacists, specifically in the community. Community pharmacists have always played a role in promoting, maintaining and improving the health of the communities they serve<sup>[7]</sup>. According to Rover and co-workers, the knowledge, skills

and traditions of pharmacists makes them the legitimate leaders in improving patient's medication use in the community<sup>[5]</sup>. However, community pharmacists still need to understand the broader concept of public health which focuses on improving health at a population level<sup>[8]</sup>. Integrating public health into pharmacy is viewed as the next challenge for pharmacy. This new concept is termed pharmaceutical public health which can be viewed as the application of pharmaceutical knowledge, skills and resources to promote disease preventive practices and healthy living<sup>[3]</sup>.

Community pharmacy holds a number of benefits as a setting for public health services. With the extended opening hours and no appointment needed for advice, community pharmacy can be more accessible than other settings. Based on a study by the Royal Pharmaceutical Society of Great Britain<sup>[9, 10]</sup>, 94% of the population visits a pharmacy at least once a year, each adult visits a pharmacy on average 12 times a year and there are 1.8 million visits to pharmacies daily for prescription-medication supply and seeking health advice. This provides a significant opportunity for pharmacists to exercise public health practices. The strategy for pharmaceutical public health aims to maximize the contribution of pharmacists, their staff and the premises in which they work to improving health and reducing health inequalities<sup>[11, 12]</sup>. Community pharmacists can make an effective contribution to public health by various activities such as improving AIDS awareness, supporting patients with chronic illness, providing sexual health support, promoting drug misuse awareness, and participating in health promotion campaigns. The United Kingdom has been one of the pioneers of this concept of pharmaceutical public health, however, in many countries, and in particular in South-East Asia, this has yet to be implemented.

Implementation of a public health role for pharmacists is not without its barriers. Two prominent factors that have been suggested to have a direct effect on this phenomenon would be performance barriers and competency. A number of studies have shown that performance barriers are potential obstacles for community pharmacists who intend to practice public health activities<sup>[13, 14]</sup>. Performance barriers can be defined as both real and perceived obstacles that prevent or interfere with provision of services. The key influences representing performance barriers can be categorised as tangible or intangible. One tangible influence and a key barrier to the provision of public health services centres on financial reward<sup>[15]</sup>. Pharmacists feel that providing public health services should carry a certain degree of remuneration, as these services take up both their time and expertise. In order to properly provide public health services, pharmacists have to maintain a follow up regime with constant monitoring. Pharmacists argue that these initiatives can adversely affect their delivery of other services such as OTC sales and thus a minimal remuneration is warranted<sup>[16]</sup>. In terms of intangible influences, a potential obstacle is the pharmacy premises, where the availability of a counselling room is essential for the provision of public health services. A study by Joyce, shows that community pharmacists' services are limited by the space of their premises and this prevents them from providing certain public health services<sup>[17]</sup>. Although some pharmacies have a designated counselling area, at least 30% of pharmacies in Malaysia do not have a specified counselling area and to date there is no regulatory requirement for such an area<sup>[18]</sup>. Another important intangible influence is the perception of the customers on the delivery of the healthcare service. Monitoring patient satisfaction is a crucial component in measuring an organization's effectiveness and should be part of any quality improvement plans. Patients who are satisfied with the service that they experience are likely to exhibit behaviours potentially beneficial to the long-term success of the healthcare provider in this case the retail pharmacists who provide public health services<sup>[17]</sup>.

The second factor, competency, can be defined as a level reached by the person who is initially a novice, and who, after training and experience, reaches the level where they can be certified as competent<sup>[19]</sup>. Studies have shown a direct relationship between competency and an expanded public health role of community pharmacists<sup>[9]</sup>. According to Eades and co-workers, community pharmacists are competent but needed more training to increase their confidence level in providing public health services<sup>[9]</sup>. The view of community pharmacists in Malaysia, however, is unknown.

The prevalence of non-communicable diseases, such as diabetes and hypertension, is predicted to increase significantly. In 2011, Malaysia recorded the highest incidence of obesity in South-East Asia and the number of patients with kidney dysfunction due to poor lifestyle practices has doubled since the 1990s (Malaysian National Health Statistics). Therefore, improving public health is firmly on the national healthcare agenda and the government's current health policy offers an unparalleled opportunity for pharmacists to be recognized as part of the public health workforce<sup>[20]</sup>. The aim of this study was to examine, how performance barriers and competency independently impact the implementation of public health services by pharmacists in Malaysia.

## **2. METHODS**

### **Design settings and Participation**

This was a cross sectional survey of pharmacists, with at least two years experience, working in registered community pharmacies in five states in Malaysia (Johor, Negeri Sembilan, Selangor, Perak and Penang).

### **Participant identification and recruitment**

Participants were identified from the registry of the Malaysian Pharmaceutical Society using random sampling technique<sup>[21]</sup>. were requested to complete a questionnaire that contained measures of performance barriers and competence. Based on Krejzie and Morgan <sup>[22]</sup>, 175 responses would be representative of the population of 500 pharmacies. Assuming a 60% response rate, 300 pharmacists would need to be invited.,

Permission was obtained from the pharmacists following email correspondence and the questionnaire was then distributed accordingly.

Ethical approval was obtained from Masterskill University College of Health Sciences.

### **Instrumentation and Data Collection**

The questionnaire consisted of 35 items (representing the variables in Figure 1) and was divided into separate sections. The first part consisted of demographic details, while the second part of 13 items explored perceived competency and importance of public health pharmacy which involved health promotion, health inequalities, social determinants of health and prevention practices. The final part of 9 items represented the performance barriers to the provision of pharmaceutical public health services. The items in the questionnaire were



designed based on findings from previous studies<sup>[19, 23, 24]</sup> and where appropriate used a 5-point Likert scale . Content validity was assessed by a panel of four community pharmacists and another panel of four academics in public health to select the best questions in terms of clarity, accuracy of the items used for performance barriers and competency, and interpretability. Seven items were excluded following content validity assessment. A pilot study completed by 35 community pharmacists gave an average Cronbach alpha of 0.893 and composite reliability levels of 0.931 , confirming adequate reliability. The finalized version was used for data collection in the general sample.

Out of the 300 questionnaires distributed to the community pharmacists, 225 questionnaires were returned completed. After cases with missing data and outliers were eliminated, the final sample consisted of 191 complete and usable responses, yielding a response rate of 63.7%.

### **Data Management and Analysis**

The datasets were coded, saved into SPSS (version 20) and subsequently analysed using an advanced software program called AMOS. AMOS utilizes the principles of structural equation modelling (SEM) to establish causal relationships between variables. When the questionnaire was devised, each of the 35 items was associated with either performance barriers (9 items) and 13 items related to the public health role and the pharmacists' perceived competency in these roles. This was analysed by the modelling software for

validity (discriminant and construct) and goodness of fit. Depending on the result from the survey, particular items are accepted or rejected and a revised model that fits the responses is devised by the software. Figure 1 shows the initial proposed model based on the literature and the questionnaire, whereas Figure 2 shows the revised model based on the results and structural equation modelling, using parameters such as root mean square error of approximation (RMSEA) and goodness of fit (GFI)<sup>[25]</sup>.

### **3. RESULTS**

#### **3.1 Demographic Profile of the Respondents**

The respondent's ages ranged from twenty-four to fifty-eight years old averaging 41 years old (Table 1). There were more male (52.4%) than female respondents (47.6%). The respondents were mostly Chinese (68.6%) followed by Indian (16.2%) and Malay (15.2%).

The type of pharmacy ownership was mostly independent (84.8%), followed by chain (11.0%) and franchise (4.2%). The working experiences in a pharmacy of the respondents

were mostly 2-10 years (66.0%), followed by 11-20 years (33.0%) and 21 years and above (1.0%). %)(See Table 1).

### **3.2 Descriptive Analysis of Variables**

A descriptive analysis of the data prior to modelling is shown in Table 2. A total of 6 categories ranging from lack of time to premises restriction such as unavailability of counselling area were assessed. The results show that only a perceived lack competency was viewed as a significant hindrance to the implementation of a public health role whereby around 62% of the respondents agreed to this factor. Many did not perceive performance barriers as prominent obstacles to this role. For instance, only 35-40% agreed that lack of time and economic incentives are possible barriers while the majority felt that these factors did not affect the public health role. Interestingly, it also showed that there was a perceived demand for pharmaceutical public health services from customers (Table 2).

The model, developed from the results of the questionnaire, consisted of two independent variables (competency and performance barriers) impacting on a dependent variable (public health role) (Figure 2). The modelling software confirmed the reliability of the resulting model (Cronbach alpha readings of above 0.8, well above the recommended limit of 0.60<sup>[26]</sup>). These results demonstrated that perceived competency had a direct and significant impact on

public health role ( $p < 0.001$ ). Interestingly, however, performance barriers showed no significant effect on public health role ( $p = 0.120$ )

## **4. DISCUSSION**

Our results showed that pharmacists' perceived competency was a significant positive antecedent of public health role of community pharmacists while performance barriers, such as infrastructure, IT and payment, were not shown to impact the development of a public health role.

### **Study Limitations and Strengths**

The study primarily focussed on pharmacists in urban areas of Peninsular Malaysia. While this should not limit its applicability to East Malaysia, this must be borne in mind at the same time. An additional limitation is that only the views of pharmacists on their ability to carry out a public health role were assessed. The views of the service users should also be assessed in future research

Despite the limitations, the use of structural equation modelling allowed us to assess the strength/influence of many different variables on the establishment of a public health role by pharmacists. This was a particularly useful and powerful statistical tool which ensured that the conclusions were valid and correct. Our response rate was good and we obtained responses from a broad range of pharmacists, which ensured our conclusions were widely applicable. Finally, this is the first study of its type in Malaysia and in the broader context of South East Asia it is one of the first to examine a public health role in general, rather than looking at specific roles and interventions, such as smoking cessation.

## **Implications**

This study revealed that, in the Malaysian setting, performance barriers were not perceived to be obstacles in implementing public health roles. This is interesting as it is in contrast with previous studies, albeit in different countries, which showed performance barriers, focusing on cost and lack of suitable premises, were significant hurdles in public health implementation. In terms of premises; staffing, counselling area and IT infrastructure have been suggested as deterrents for public health service. Without a comfortable area for counselling and a designated database for records, efficient delivery of a public health service was deemed overwhelming<sup>[27]</sup>. A possible explanation for our findings can be attributed to the fact that pharmacists in Malaysia (and, likely, in most countries) are accustomed to providing counselling services within the confines of their premises and so did not view this as a major obstacle<sup>[23]</sup>.

Financial reward was also not a major issue as many pharmacists viewed these services as part of their professional responsibility. Again, this was different from previous studies which identified remuneration as a major barrier for implementation of public health services and contribution to the management of long-term conditions<sup>[28]</sup>. This viewpoint was not shared by the respondents of our study. Other research conducted in Malaysia has suggested that providing public health services attracts customers to the pharmacy<sup>[29]</sup> because of the implication of which could lead to increased loyalty from the customer and an overall increase in revenue for the pharmacist.

From this study, pharmacists' perceived competency was a major factor influencing the implementation of public health practices in community pharmacy. Although some aspects of public health focus are integrated in parts of the pharmacy education, most pharmacists felt it was insufficient for delivery of a service. This is consistent with studies from developed countries such United Kingdom and United States where competency and knowledge of pharmaceutical public health was a constant worry<sup>[89]</sup>. Performing public health services requires new competences and knowledge<sup>[30]</sup>. The findings from this study suggest that pharmacists in Malaysia believed their competency levels needed to be improved in order to carry out this new role. This concern was substantiated as public health is not among the core competencies in undergraduate pharmacy education in Malaysia. Further improvement in undergraduate education and continuing professional development (CPD) training focused on public health for qualified pharmacists would help to address these concerns. This training should include, as in other countries, all the preventive practices needed for the major health issues in Malaysia such as smoking cessation, diabetes-obesity lifestyle modification and, sexual health<sup>[31]</sup>. More importantly, the training should also encompass a wider scope of

public health that includes health inequalities, and socio-economic determinants of health. This would equip the pharmacy workforce with the necessary skills to assist in primary prevention activities particularly targetting non-communicable diseases.

Pharmaceutical public health is a relatively new arena for pharmacists and currently, population health and preventive care is being practiced in a very limited manner by community pharmacists globally. A review in 2006 demonstrated that few frameworks or models have been established to represent pharmacists' roles in public health, leading many to speculate that community pharmacist are comfortable with their traditional, more passive role, providing health information through leaflets and posters<sup>[28]</sup>. Smoking cessation programmes, customized weight management packages, safe contraception practice and many more enterprises can be performed by the community pharmacist<sup>[31]</sup>. If the pharmacy profession contributed more to disease prevention practices this could lead to significant reduction in a nation's health burden.

Consequently, this study recommends that undergraduate pharmacy education be re-designed to include public health training to ensure graduating pharmacists are competent in performing a public health role. In the meantime, continuing professional development (CPD) training (a licencing requirement for pharmacists in Malaysia anyway) should focus on expanding the public health role of pharmacists. This training should include, as in other countries, all the preventive practices needed for the major health issues in Malaysia. This will ensure that pharmacy practice continues to evolve in Malaysia, to best serve the needs of the pharmacists and, most importantly, the public.

## **5. CONCLUSION**

This study is amongst the first to explore the possibility of Malaysian community pharmacists undertaking a new role in public health. From this study, it can be concluded that pharmacist in Malaysia are willing to provide public health services and do not view performance barriers, such as premises and cost, as significant obstacles, as has been found in other countries.



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