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Public Perceptions towards Implementation of Dispensing Separation: Results from a Cross Sectional Analysis

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Abstract

The Malaysian healthcare system has yet to introduce a legislature that implements separation of physicians and pharmacists roles. More recently, a proposal was offered to take the Malaysian populations point of view towards dispensing separation. Therefore, the current study is aimed to assess general public perceptions towards implementation of dispensing separation in the state of Penang, Malaysia. A cross-sectional study design was adopted to conduct the study. A pre-validated questionnaire was offered to 1000 residents in the state of Penang, Malaysia. Both descriptive and inferential statistics were used for data explanation. SPSS® v 22.0 was used for data analysis. The level of statistical significance was taken to be $p < 0.05$. Sixty-three percent of the respondents were females with Malay being the prevailing ethnic group (n = 527, 52.7%). Seven hundred and sixteen (71.6%) of the respondents reported pharmacists as a reliable source of medicine-related information when compared with physicians provided when diagnosis has been made. Majority of the respondents (n = 876, 87.6%) assured their support towards implementation of dispensing separation in Malaysia. The respondents explained that dispensing separation will result in optimization of patient safety (n = 890, 89.0%), help in to reduce medication error (877, 87.7%) and will reduce the cost of medication (n = 777, 77.7%). There was a significant association reported between supporting future implementation of dispensing separation and all demographic variables ($p < 0.05$). In addition, the all reported associated were positively and moderate in association (φc ranging from 0.288 – 0.335). Results of the current study presented a strong evidence of public support and benefits of dispensing separation in Malaysia. These findings are of high relevance to the policy makers as it provides an over view of public choice of implementing dispensing separation in Malaysia.

Keywords: Community perceptions; Dispensing separation; Cross sectional analysis; Malaysia

Introduction

Healthcare systems around the world are faced with multiple challenges [1]. For a system to work effectively, a sound knowledge of ineptitudes and incompetencies are vital in shaping reforms; hence improving the functionality of the system [2]. Inline to the inefficiencies of the healthcare systems around the globe, dispensing separation has been a topic of thoughtful interest in the literature [2-6]. While some countries allow physicians to dispense medicines, a number of OECD (Organization for Economic Co-operation and Development) countries have fully banned physician dispensing of medications to the patients [2].

Within this context, prescribing and dispensing of medications are two important yet completely different phases of the medication management cycle [7]. Where prescribing is exclusively attributed to physicians, dispensing of medications is an integral service linked to the pharmacists [8]. This clear demarcation of dispensing roles avoid conflicts as physicians are incentivized to encourage demand or substitute more expensive medicines because of substantial profit margin on medication sales [2,9]. Furthermore, the separation of roles augments sagacity of treatment, as pharmacists being the medicine specialists receive, review and deliver prescriptions that safeguards good dispensing practices [8].

Shifting the concerns to the issue of dispensing separation in Malaysia, the country has yet to introduce a legislature that implements dispensing separation. Malaysia has built a complex, but comprehensive healthcare system, that keeps a tab on every level of healthcare related service in the country, from medical institutions to the primary end user–the patient. Malaysia has a comprehensive two-tiered healthcare system that consists of a government-run public sector and a private healthcare sector. The public sector is heavily subsidised by the government and represents about 70% of the healthcare services and while the private sector is limited to those who can afford it and represents about 30% of the healthcare services. In the public sector, the Ministry of health (MOH) is the main government body accountable for providing healthcare services in the country. The physicians in Malaysia are still allowed to prescribe and dispense medication at the same time [10]. Therefore, pharmacists in Malaysia are pushing hard for this separation of roles but fierce and stern disagreement against the proposal shapes as a hurdle in designing and implementing dispensing separation [4]. At times, where Malaysian pharmacists declared dispensing of medicines as an integral part of their job description [11], dispensing separation is presented as a business-related discussion rather than a patient-centred verdict by the physicians [12]. More recently, it was urged that patients being the key stakeholder of the healthcare system should have the right to decide about the acceptance or rejection of dispensing separation in Malaysia [13]. Heavy debates, criticism and indulgence on dispensing separation from both physicians and pharmacists have developed confusion among the Malaysian population. Furthermore, the scarcity of information regarding public perception towards dispensing

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separation makes it even more difficult for the policy makers to move ahead towards dispensing separation in Malaysia. Keeping the issue in mind, the current study is aimed to assess public perception towards dispensing separation in the state of Penang, Malaysia. It is believed that results from the current study will provide a blue print to the relevant authorities when considering issues related to separation of roles in the country.

Methods

Study design and settings

A questionnaire based, cross-sectional study was conducted in the state of Penang, Malaysia.

Participants, sampling and inclusion criteria

Respondents of the study were member of general population residing in the state of Penang, Malaysia. Sample size calculation was based on 50% of expected proportion, with 95% of confidence interval and 5% margin of error. To ensure the appropriate power needed for a cross sectional study, a double design effect (DEFF = 2) was used [14]. A dropout of 30% was added to the calculated sample to avoid sample-related short comes. Therefore, 1000 respondents with ability to read and communicate in Bahasa Melayu (National language of Malaysia) or English, with no cognitive disabilities were conveniently targeted for the current study.

Study instrument, validity and reliability

Data was collected using a 17-itemed, self-reported structured questionnaire. Experts from Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia established the face and content validity of the questionnaire. The study questionnaire was piloted among 30 participants and little modification was needed. Pilot study also declared the tool as reliable with alpha value of 0.75. Data from the pilot assessment was not included in the final analysis.

Data analysis

The data was analysed by using SPSS v. 22.0. Descriptive statistics were used to present the demographic information. Chi-Square/Fischer Exact tests were employed (where appropriate) to test the association between demographic profiles and the perceptions toward dispensing separation. P value less than 0.05 was considered as statistically significant. The strength and direction of significant association was determined by using Phi/Cremer coefficient (φc).

Ethical approval

The departmental ethical review committee of School of Pharmaceutical Sciences, Universiti Sains Malaysia approved the study. Written consent was taken from the participants prior to data collection.

Results

The demographic characteristics of the study respondents are presented in Table 1. Sixty-three percent of the respondents were females with Malay being the prevailing ethnic group (n = 527, 52.7%). Majority of the respondents were categorized in the age group of 15-24 years and had undergraduate level of education (n = 811, 81.1%).

Majority of the respondents (n = 826, 82.6%) were aware of the role of pharmacists in the healthcare system of Malaysia and were familiar with the concept of dispensing separation (n = 627, 62.7%). Furthermore, 716 (71.6%) of the respondents reported pharmacists as a reliable source of medicine-related information when compared with physicians provided when diagnosis has been made.

Table 2 describes the respondents' perception towards implementation of dispensing separation in Malaysia. Majority of the respondents (n = 876, 87.6%) assured their support towards implementation of dispensing separation in Malaysia. The respondents explained that dispensing separation will result in optimization of patient safety (n = 890, 89.0%), help in to reduce medication error (877, 87.7%) and will reduce the cost of medication (n = 777, 77.7%). The respondents described their trust in pharmacists as 82.6% stated that pharmacists are in better position in dispensing medicines when compared with physicians.

The Chi square test was used to assess the association among study questions and the demographic variables (Table 3). There was a significant association reported between supporting future implementation of dispensing separation and all demographic variables ($p < 0.05$). In addition, the all reported associated were positively and moderate in association (φc ranging from 0.288 – 0.335). In addition age, ethnicity, educational status and income were significantly associated with the agreement of dispensing separation and optimization of medication safety ($p < 0.05$) with income having a positive and moderate relation (φc = 0.335).

Characteristics	Frequency	Percentage
Age (26.92 ± 9.11 years)		
15-24	620	62.0
25-34	219	21.9
35-44	87	8.7
45-54	48	4.8
> 55	26	2.6
Gender		
Male	362	36.2
Female	638	63.8
Ethnicity		
Malay	527	52.7
Chinese	336	33.6
Indian	97	9.7
Others	40	4.0
Education Level*		
Undergraduate	811	81.1
Postgraduate	72	7.2
Post-doctoral	22	2.2
Other	92	9.2
Monthly income/Allowance (RM = Ringgit Malaysia)		
RM < 2000	725	72.5
RM 2001-3999	152	15.2
RM 4000-5999	79	7.9
RM 6000-8000	24	2.4
RM > 8000	6	6.0
Have you ever heard the term 'dispensing separation' in any mainstream media last few months in Malaysia?		
Yes	627	62.7
No	373	37.3
Are you aware the role of pharmacist in healthcare system?		
Yes	826	82.6
No	174	17.4
Do you think that pharmacist is more reliable than a physician in providing medicines upon a diagnosis has been made?		
Yes	716	71.6
No	284	28.4

** missing data = 3*
*** missing data = 14*

Table 1: Demographic characteristics of the study respondents.

Items in questionnaire	SD[Ɣ] (n, %)	D[Ɣ] (n, %)	A[Ɣ] (n, %)	SA[Ɣ] (n, %)
Implementation of dispensing separation will help to reduce medication error.*	18 (1.8)	103 (10.3)	569 (56.9)	308 (30.8)
Implementation of dispensing separation cause consumer's inconvenience in getting medicine.*	96 (9.6)	431 (43.1)	360 (36.0)	111 (11.1)
Community pharmacist will provide better advice on the use of medicine than the staff in private general practitioner's clinic.*	20 (2.0)	163 (16.3)	492 (49.2)	324 (32.4)
Private clinics often overcharge patient by giving unnecessary medicine.	24 (2.4)	132 (13.2)	436 (43.6)	408 (40.8)
Implementation of dispensing separation will help to reduce the cost of medication.*	34 (3.4)	188 (18.8)	524 (52.4)	253 (25.3)
I feel safer if my prescription prescribed by my doctor is screened through and double checked by a community pharmacist.*	17 (1.7)	85 (8.5)	462 (46.2)	435 (43.5)
In my opinion, pharmacists are better position in dispense medication rather than a general practitioner.	21 (2.1)	153 (15.3)	482 (48.2)	344 (34.4)
In my opinion, implementation of dispensing separation will optimize patient medication safety.	14 (1.4)	96 (9.6)	539 (53.9)	351 (35.1)
I will support future implementation of dispensing separation in Malaysia.	23 (2.3)	101 (10.1)	534 (53.4)	342 (3.2)

[Ɣ]*SD=strongly disagree, D=disagree, A=agree, SA=strongly agree*
**Missing values in sequence (2, 2, 1, 1, 1)*

Table 2: Public's perception on implementation of dispensing separation in Malaysia.

Items in questionnaire	P-value*				
	Age	Gender	Ethnicity	Education	Income
Implementation of dispensing separation will help to reduce medication error.	< 0.001	0.590	0.473	< 0.001	0.024
Implementation of dispensing separation cause consumer's inconvenience in getting medicine.	< 0.001	0.001	< 0.001	0.047	0.005
Community pharmacist will provide better advice on the use of medicine than the staff in private general practitioner's clinic.	< 0.001	0.498	0.462	0.001	< 0.001
Private clinics often overcharge patient by giving unnecessary medicine.	0.125	0.343	0.113	0.381	0.769
Implementation of dispensing separation will help to reduce the cost of medication.	0.335	0.341	0.003	0.210	0.027
I feel safer if my prescription prescribed by my doctor is screened through and double checked by a community pharmacist.	0.146	0.075	0.002	0.001	0.994
In my opinion, pharmacists are better position in dispense medication rather than a general practitioner.	< 0.001	0.045	0.074	0.029	0.001
In my opinion, implementation of dispensing separation will optimize patient medication safety.	< 0.001	0.124	0.001	< 0.001	< 0.001
I will support future implementation of dispensing separation in Malaysia.	< 0.001	0.010	0.001	0.018	< 0.001

**Chi square test*

Table 3: Association between demographic variables and public's perceptions on implementation of dispensing separation in Penang.

The respondents trusted the pharmacist as a medicine advisor, prescription handler, and therefore perceived pharmacist in a better position to dispense a medicine when compared with physicians. Age, gender and income were again significantly associated with the statements with week positive connotations ($p < 0.05$, $\varphi c < 0.30$).

Additionally, the relationship between dispensing separation being the cause of inconvenience in getting medications was also significantly associated with all demographic variables ($p < 0.05$). However, the association was week and negligible to cause an effect on the model. No associations were reported among other study variables as shown in Table 3.

Discussion

The current study was aimed to assess public perceptions towards dispensing separation in the state of Penang, Malaysia. For the explanation of the study findings, the results are discussed under the following sub-sections.

Dispensing separation and medication cost

Participants of the current study were in agreement that private clinics overcharge patients by prescribing unnecessary medications. The association between over-prescribing for profit generation is frequently discussed in literature. Kaiser and Schmid concluded that physicians dispensing increases drug expenditures to 30% per patient. Additionally, total non-drug expenditures also increase to 20% per patient. Collectively, over-prescribing raised consultation costs through an increase in the total time of treatment. Therefore, the authors concluded that dispensing by physicians clearly affects health care expenditures hence placing an additional burden on the patients and healthcare system [2]. In line to what is reported earlier, Beck et al. by using the canton-level data reported that physician dispensing considerably increases drug expenditures [15]. Furthermore, a study conducted in United Kingdom concluded that dispensing physicians generate more drug-related expenses [16]. Similar findings were presented by a study from two Swiss constituencies whereby the authors reported high cost of treatment through dispensing physicians [17].

On the other hand, Chou and colleagues investigated the impact of the dispensing ban in Taiwan and reported significant decrease in the drug expenditures per visit [18]. Moreover, dispensing separation in Japan effectively reduced medicine costs and based on the medical economic efficiency, the authors urged that separation should be expanded to countries in which the system is underdeveloped [19]. Within this context, private household out-of-pocket spending was reported as the largest component of the private health care expenditure in Malaysia. Out-of-pocket spending increased to 57.09% (RM 10.8 billion) which is inexplicably high when compared with the highly subsidized public sector [20]. Therefore, people complaints of higher healthcare cost in Malaysia are coherent and need immediate attention. Among such solutions, an imperative decision is separation of roles in the healthcare system. As separation is already proven as cost-effective, a reduction of 15-20% of the medication cost will save a heavy finance which can be utilized for other unattended sectors of healthcare system in Malaysia.

Dispensing separation and role of pharmacist

Respondents of the current study revealed their trust in the

capabilities of the pharmacist. Therefore, we can conclude that the Malaysian society accepts pharmacists as a medicine expert and foresee pharmacists in a better position in dispensing medications. Our assumption is supported by the findings from Shafie and Hassali who reported that Malaysian population valued pharmacist dispensing services and 67% of the population were willing to pay for the pharmacists dispensing services [21]. Furthermore, a cost-benefit analysis on dispensing separation from Malaysian societal perspective revealed a net monetary benefit of 157 million Malaysian Ringgit if the law of dispensing separation is approved in the country [22]. Consequently, it is recommended that based on the public perception, dispensing separation must be approved and positioned in the healthcare system of Malaysia. The reasons of recommending dispensing separation are multi factorial. Pharmacists support the best outcomes for patients through validating prescriptions and ensuring they follow best practice guidelines; and by providing adherence support. Furthermore, it also makes good sense to use available human resources and the investment already made by the Malaysian government in educating the pharmacists. A classical model of work description can be adopted in Malaysia, whereby a dedicated workforce of pharmacists can provide health-related support and services. With over 2500 pharmacies in Malaysia, community pharmacists can provide local populations with access to medicines and can help to decrease the burden that minor self-treatable ailments place on the healthcare system. A study conducted in British Columbia reported that if minor ailments are moved to pharmacies instead of physicians, it could result in a $32 million savings to the system annually [23]. Similarly, a recent study in Ontario estimated 0.9 million hours of physician time could be shifted to pharmacies for a net savings of approximately $12 million over 5 years [24]. Thus, dispensing separation will save physicians' time which can be utilized in treating major and serious complaints at the healthcare centres.

Another factor supporting dispensing separation is patient convenience. Community pharmacists have better provision of medicines and are more accessible to patients. Due to the shortage of physicians worldwide, many patients face difficulties accessing their physicians, so this makes no sense that physicians spend more time focusing on dispensing rather than on their core role of diagnosis, especially when pharmacists are competent healthcare professionals to undertake the role of dispensing and to follow-up with patients.

Dispensing separation and policy implications

Without dispensing separation, the financial interest of physicians and pharmacists are not in the best interest of patients. A check and balance system is missing in the medication management cycle hence resulting in the possibility of misuse of medicines. Furthermore, patients do not have access to prescription information. Therefore, by separating the prescribing and dispensing of medicines, it is believed that the process will reduce the overuse and misuse of medicines, improve the quality of the consumption of prescription drugs, and enhance the patients right to know about medications.

However, based on the previous experiences in Malaysia, implementation of a dispensing separation regulation is not going to be an easy task for the policy makers. We have to realize that most healthcare reforms have unavoidable conflicts with various stakeholders. In fact, the Korean and Taiwanese resistance to dispensing separation are vibrant examples in literature [18,25]. However, the same examples can be taken as a blue print in developing the dispensing separation policy in Malaysia. We have to remember that dispensing separation in Malaysia will be a fundamental and comprehensive policy that will change the pattern of healthcare delivery and utilization in the country. Most above all, the policy will directly challenge an economic stake of physicians by eliminating an important source of their income. Although the total benefits of the separation policy will be greater than the total cost, this cost will circulate around the physicians and a strong opposition is expected. For that reason, if policy makers in Malaysia skip attentions to details, healthcare providers can easily defeat the attempt of dispensing separation.

One way to reduce resistance from prescribers is an upsurge of consultation fee. Furthermore, dispensing services fee can be offered for the pharmacists to assume their new role in the healthcare system. Nonetheless, the Malaysian policymakers have to weigh the benefits of the separation policy against the need to increase consultation and dispensing fees to assist the channel of the policy implementation. The counter-balancing effects of reduced drug expenditures and increased cost of consultation should be clearly defined and circulated among all stakeholders of the healthcare system. In addition, the pharmaceutical reform will introduce a change in the pattern of medicine consumption and inconvenience in access to medicines can lead to complains about the new policy. The policy makers will have to put additional resources in educating public about the new system and to persuade them to tolerate the short-term inconveniences for the long-term benefits.

Conclusion

Dispensing separation reduces medical cost, improves population health, and increases the quality of health care. Results of the current study presented a strong evidence of public support and benefits of dispensing separation in Malaysia. These findings are of high relevance to the policy makers as it provides an over view of public choice of implementing dispensing separation. However, the impact of any reform policy is highly dependent on the details of its design. Therefore, policy makers in Malaysia have to take into the consideration of all stakeholders before designing a policy related to separation of roles in the country.

Disclosure

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