

Full Length Research Paper

Service development in community pharmacies in Taiwan

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Facing changes in the medical environment, community pharmacies are seeking new strategies and developing new services in order to survive. In this two-phase study, we explored certain aspects of service development in community pharmacies. The first phase involved collection of qualitative data through interviews. In the second phase, a quantitative study was designed on the basis of the results of interviews conducted in the first phase, and sampling was conducted using a questionnaire. The results of the qualitative study showed that development of community pharmacies could enhance public health services and the pharmacy profession and facilitate a redesign of the service environment. In the quantitative study, over 64% of the respondents agreed that development of community pharmacies would enhance the pharmacy professional environment and provide flexible and diversified services. Another 95% of the respondents were able to accept the concept of self-care management systems that are based on public health services provided by community pharmacies. Regarding the redesign of the service environment of community pharmacies, 42% of the respondents reported that this is 'important', and 53% indicated that this is 'very important'.

Key words: Community pharmacy, pharmacy, healthcare policy, healthcare service, service science.

INTRODUCTION

The role of community pharmacy is focused on dispensing professional health advice and other services provided by community pharmacists and their assistants as they give out prescriptions (Goel et al., 1996). Pharmacies have a long history of serving as effective components of healthcare teams and have served an important function in the entire healthcare system. Pharmacies in both hospitals and communities have become important safeguards for the health and safety of the public (Smith, 2011; Paudyal et al., 2010). Members of the public find pharmacy to be a convenient setting and feel that pharmacists should provide public health

services beyond dispensing medicine. Those that had experienced public health services in a community pharmacy, such as self-management interventions, were largely satisfied with their experience with these services (Bell, 2009).

This study evaluated the service development in community pharmacies in Taiwan. In recent years, the healthcare environment in Taiwan has undergone significant changes, including implementation of a national health insurance policy, delineation of medicine and pharmacy practices, and changes in pharmacy marketing orientation. These changes in the healthcare environment have led pharmacies in Taiwan to progress from traditional drug dispensaries to valued, integrated links in the healthcare industry chain.

Facing the changes in the healthcare environment, community pharmacies have sought new strategies and developed new markets in order to survive (Paudyal et

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al., 2010). Development and invention are the two important concepts of innovation (De Bie et al., 2011). Recent breakthroughs in community pharmacy practices include health enhancement services provided to the customer. These health enhancement services include advice on healthy living and self-care, and involvement in health promotion campaigns (Bell, 2009). The changing requirements that lead pharmacists to provide health-enhancement services should be formalized and integrated into standard practice.

Community pharmacists have the opportunity to improve the healthcare of the population, particularly, for those in disadvantaged sectors of the society (both poor and rural populations) that do not have the resources to visit clinics (Basak et al., 2009). Community pharmacies must utilize the existing internal resource systems, update their knowledge, and enhance their competence to restructure their business models (Basak et al., 2009). In other words, it is imperative to implement the concept of innovation in healthcare services to improve the service quality of pharmaceutical care.

The promotion of healthy lifestyles is one of the core roles of pharmacists. Although, pharmacists have always had some involvement in health improvement; the focus on this aspect has greatly increased over recent years. Community pharmacy has a number of benefits as a setting for public health activities. In recent years, studies in the United Kingdom (McDonald et al., 2010; Silcock et al., 2004; Benson et al., 2009), South Africa (Williams, 2007), and Tanzania (Kamat and Nyato, 2010) emphasized that community pharmacists should improve their role within the larger team of healthcare professionals, moving away from the traditional view that the main role of a community pharmacist is in the sale of drugs. Nevertheless, in Asian countries, there is a lack of research on the development of community pharmacies. This study examined pharmacists in Taiwan in an effort to supplement the existing studies on Asian pharmacy practice.

Aim of the study

The purpose of this study was to explore service development in community pharmacies in Taiwan.

METHODOLOGY

Study subject

The operational format of community pharmacies in Taiwan can be classified into two types. From the perspective of the operator's characteristics, there are either pharmacies run by the pharmacists themselves (self-employed) or chain pharmacies. In Taiwan, a chain pharmacy system is usually operated by a firm that also allows individual pharmacists to join the system as a franchisee and operate a community pharmacy.

The pharmacy in the system can be either a chain operated by the franchiser or a franchised pharmacy operated by the

pharmacist, with the pharmacist paying a franchise fee. From the perspective of the products they handle, there are pharmacies that handle only medicines approved by the Department of Health, Executive Yuan, Taiwan, community pharmacies that handle medicines and maternal and infant products (e.g. diapers, baby formula, etc.), and community pharmacies that handle medicines and cosmetic products (e.g. skin care products). As stipulated in the national health regulations, all pharmacists in Taiwan are professionals with a national license and their services focus on handling medicines approved by the Department of Health and filling doctors' prescriptions.

Research design

This research was divided into two phases. The first phase consisted of a qualitative study, which involved the collection of data through interviews. As a principle, the targeted sampling covered pharmacists from all types of pharmacies found in Taiwan, and their willingness to participate in the survey was considered. The sampling approach used is known as 'snowballing'. Using this approach, researchers first found a participating community pharmacist, and through his recommendations, obtained a list of other community pharmacists as potential study participants. The subjects, including two pharmacists employed by chain pharmacies, one self-employed pharmacist from a community pharmacy, a pharmacist employed at a community pharmacy, a pharmacy director from a medical centre, and a pharmacy director from a regional hospital, were interviewed in an effort to understand the opinions of pharmacists regarding service development in community pharmacies. The interviews were conducted from October 15 to October 23, 2009. Each interview lasted one to two hours and the interview questions included: 'What kind of problems do you think community pharmacy operations currently face?', 'What innovative services do you think community pharmacies can develop?', 'What other professional services do you think community pharmacists can provide other than filling prescriptions?', and 'How can community pharmacies integrate themselves with healthcare service'?

In the second phase, a quantitative study was designed based on the results of the interviews conducted in the previous phase, and data were obtained using a structured questionnaire (Appendix). The questionnaire content was reviewed by two scholars from the Department of Health Service Administration and two community pharmacists. Questionnaires were distributed to the customers of the two community pharmacies described in the aforementioned qualitative survey. Thus, the goal was to understand public opinion of service development in community pharmacies from the viewpoint of pharmaceutical service recipients. The survey lasted from October 27, to December 9, 2009. Two hundred and sixty questionnaires were distributed, and 240 valid questionnaires were returned. The respondents were all residents of Taiwan visiting the case community pharmacies in this study, and participated in the survey voluntarily. In the process of conducting the survey, the respondents were first advised that the information they provided was to be used strictly for academic purposes, the research data would remain confidential, and it would be anonymized. Then, the respondents were asked if they would voluntarily take the survey and whether they had reached legal age. If they were willing to volunteer and had reached legal age, the questionnaire was distributed. A research assistant was available on site should the respondent have any questions about the survey.

Data analysis

Content analysis was employed for qualitative data analysis. With the consent of the interviewees, the interviews were recorded and \

the recordings were converted into verbatim transcripts. Content analysis was subsequently conducted on these verbatim transcripts. The first step was to identify and confirm specific keywords from among the following words: the service development and service innovation in community pharmacies. Then, three regularly paid research assistants from the Graduate Program of the Department of Health Service Administration, who were well trained in qualitative data analysis, coded the data on the basis of the verbatim transcript. Next, the coding results were compared, discussed, and modified for discrepancies. The coding process is complete only after the results received unanimous approval.

In the second phase, quantitative data were analysed using Statistical Package for Social Sciences (SPSS) 17.0, with descriptive statistics indicating the demographics of the sample. The items of the quantitative questionnaire included the following: 'I agree that the "self-care management" system is helpful in personal health management'; 'I agree to pay for the "self-care management" system'; 'the willingness to support hospital healthcare services referred by the community pharmacy'; and 'the design of the service venue' (Appendix). Likert-type five-point scales were used (1 = not very important and 5 = very important), and the Cronbach's α value of the design of the service venue scale was 0.821.

Ethical considerations

This survey was performed after obtaining agreement of the volunteering respondents. All responses were anonymous, and the respondents were not acquainted with the researchers. The researchers invited the respondents to participate in this research when distributing the questionnaires. They were also informed that all information was to be provided on a voluntary basis and would be used for research purposes only. Because names were not required on the data collection forms, privacy and anonymity were ensured. To guarantee the privacy of the respondents, the questionnaires were sealed after they were retrieved to keep their contents secure and anonymous.

RESULTS

Phase 1: Interview used in the qualitative study

The comprehensive study of community pharmacies through qualitative data analysis can lead to opportunities for service development. The development of community pharmacies can begin with an emphasis on professional service, enhanced public health services, a redesign of the service environment, and enhanced management of their relationship with the public.

Enhancement of professional services offered by pharmacies

Emphasis on the professional consulting services offered by pharmacists: In the traditional public view, the main role of a community pharmacist is to sell drugs. However, the professional image of the pharmacist has not typically been emphasized. Farris and Schopflocher (1999) proposed that pharmaceutical care should be based upon reviewing information in medication profiles and patient counselling. The future development of

pharmacies should involve further enhancement of the professionalism of pharmacists, as indicated by a pharmacist who resigned from a community pharmacy (Pharmacist A) who said the following:

'To build the image of a professional pharmacy, we hope to put more effort in the field of medicines. We have not handled many cosmetics as we are not familiar with them'.

Provide convenient and flexible services to the public: Modern community pharmacies should provide the public with more convenient access to services, focusing on the variety of products offered. For example, community pharmacies should provide a chronic prescription medicine blending service and deliver medicine to customers in need via courier to eliminate the need for customers to travel. The service should be integrated to provide convenient methods for customers to pick up and receive products. A pharmacist in a chain pharmacy system (Pharmacist C) said the following:

'Our pharmacy is quite flexible, and we can even deliver the medicines to the public one week earlier'.

Enhancement of public health services

Cooperate with other healthcare professionals to promote public health and home care services: To implement the concept of community, and to comply with the public health policies of the National Health Department, community pharmacies can cooperate with other healthcare professionals (like public health nurses and family doctors) to promote home care services. For example, a community pharmacist can assist home care patients when they self-medicate, that is, when the patients have a question about the medication, they can consult the community pharmacist nearby. A pharmacist from a chain pharmacy (Pharmacist B) said the following:

'The government requires pharmacists to practice in hospitals; so pharmacists and students in pharmaceutical science will come to our community pharmacy for practical training every semester. Therefore, with this extra temporary manpower, I can provide a two-month home care service to the public in the community, and the students can learn while I conduct pharmaceutical consulting and instruction'.

Cooperate with other sectors to provide diversified services: Community pharmacists in the United Kingdom work in both professional and commercial settings. Their professional role involves dispensing prescribed medicines as well as advice about medicines to the public. The commercial role of pharmacists revolves around the sale of over-the-counter medicines and other

Table 1. Respondents' demographics.

Variable	Number	%
Gender (n = 240)		
Female	135	56.3
Male	104	43.3
Missing data	1	0.4
Occupation (n = 240)		
Self-employment	31	12.9
Agriculture	2	0.8
Commerce	45	18.8
Industry	22	9.2
Public servant	6	2.5
Academia	3	1.3
Student	72	30.0
Homemaker	19	7.9
Others	34	14.2
Missing data	6	2.5
Age (years, n = 240)		
18 - 20	14	5.8
21 - 30	134	55.8
31 - 40	48	20.0
41 - 50	32	13.3
51 - 60	8	3.3
>61	4	1.7

non-medical, but often health-related merchandise (Anderson, 2000). Just like the community pharmacists in the United Kingdom, some community pharmacists in Taiwan, in addition to providing consultation for the use of medicines, also provide additional services, such as beauty services. A pharmacist from a chain pharmacy (Pharmacist B) said the following:

'We have in-house beauticians to provide beauty services, which is one of our secondary services.'

Redesign of the service venue

Open shelf design to alleviate shopping pressure on the customers: A pharmacist believes that open shelves facilitate buying convenience for the customers, and that these open shelves can alleviate consumer pressure and make customers feel more at ease during over-the-counter (OTC) medicine shopping. The manager of a chain pharmacy (Pharmacist C) said the following:

'The open shelves in pharmacies will lessen pressure as the public can freely choose the products they need.'

Emphasis on window dressing and colour choices in the shop: Similar to department stores, the window dressing of a community pharmacy will influence the public's first impression of the pharmacy. A pharmacist of community pharmacy (Pharmacist A) said the following:

'A large shop window can attract more attention. The shopping windows of many pharmacies are filled with various advertisements, which appear quite messy. The window dressing of my pharmacy is an important part of my business strategy.'

Phase 2 (Quantitative study): Questionnaire investigation

Based on the qualitative data obtained from the interviews conducted in the first phase, we designed a quantitative study. Once the content of the questionnaire was determined, we invited pharmacists from the community pharmacies that were interviewed during the first phase to review the questionnaire. Table 1 shows the distribution of the respondents' demographics.

Enhancement of professional services

Williams (2007) proposed that pharmacies could benefit from a service-based philosophy, rather than the current product-based approach, which has a fee-for-product focus. This study found that besides having their prescriptions filled, there are 3 reasons for people to seek help from community pharmacies: nutrition consultation, health education, and simple health examinations. From investigation and analysis of the results of our questionnaire, and the qualitative data generated in the first phase of our study, we found that the subjects generally recognized that the development of community pharmacies should move towards professional consulting services, while the traditional service image that is limited to the sale of drugs should be phased out. Moreover, the service development should provide more flexible and diversified services, such as integration with public healthcare services in providing self-care management.

Enhancement of public health service

In the qualitative analysis of the data obtained in the first phase, we found that the subjects believed that the community pharmacy services can be developed, such as those related to public health (e.g. self-care management systems), by working in cooperation with other healthcare professionals, such as public health nurses or family doctors. For example, a community pharmacy could develop a 'Self-care Management Card', which includes a customer's health condition and medication records for the eyes, nose, oral cavity, ears,

Table 2. The frequency of agreement to the “self-care management” system.

Items/Number (%)	Yes	No	Missing data
I agree that the “self-care management” system is helpful in personal health management.	228 (95.0)	11 (4.6)	1(0.4)
I am interested in the “self-care management” system.	208 (86.7)	30 (12.5)	2(0.8)
I would recommend the “self-care management” system to my family.	210 (87.5)	28 (11.7)	2(0.8)

and skin. It would also be linked to a customer’s family medication history, preference in medicine, and purchase record of health products. When a community pharmacist accesses this system, it can provide the pharmacist a comprehensive record of the customer’s personal and family health record, which is accessible from other domestic community pharmacies or community pharmacies abroad.

In the quantitative study performed in the second phase, we investigated the opinions of the respondents on the combination of community pharmacies and public health to expand the concept of a self-care management system. In general, the respondents accepted the concept of self-care management systems proposed by community pharmacies. Among the respondents, 95.0% believed that this system would be helpful in personal health management, 86.7% were interested in this system, and 87.5% said that they would recommend this system to their family (Table 2).

Since Taiwan’s state health insurance program does not cover the expenses associated with self-care management, this study examined the willingness of the respondents to bear the expenses of implementing a self-care management system. We found that, while 54.6% of the respondents were willing to pay for this system, 45.0% were unwilling. Furthermore, 52.5% of the respondents were willing to pay for it if the cost would be less than 1,000 NT dollars/month, while only 4.6% were willing to pay for it if the cost was between 1,001 to 1,500 NT dollars/month. In terms of the method of payment, 36.3% of the respondents agreed to make a one-time lump sum payment, 8.8% agreed to make a monthly payment, and 12.5% of the respondents agreed to make an annual payment (Table 3).

We asked the respondents regarding their support for hospital healthcare services referred by community pharmacies, and 87.9% of them were willing to avail from such services. In addition, we further investigated the customer’s opinions on the medical care referral proposals provided by pharmacists from community pharmacies, and 84.6% of the respondents replied that they would accept these recommendations. These findings suggest that the respondents clearly trust the healthcare advice of pharmacists working in community pharmacies. In addition, we also asked respondents regarding a free hospital online registry service provided by community pharmacies, and 81.7% replied that they would accept such a service (Table 4). The free hospital

online registry service allows community pharmacists to make appointments for their customers with hospital physicians through the internet, based on the respective conditions of their customers.

The aforementioned findings indicate the respondents’ high rate of acceptance of supporting health care services provided by community pharmacies. Therefore, community pharmacies and hospitals should cooperate with each other in the future to become primary referral providers for health care services.

Redesign of the service venue

We also examined the respondent’s opinions regarding eight features related to the design of services provided by community pharmacies. A rating of 5 indicated that a feature was very important to the respondent, and a rating of 1 indicated that it was not very important. The Cronbach’s α value for this part of the questionnaire was 0.814. A Cronbach’s α value higher than 0.6 is accepted as credible (Onwuegbuzie and Leech, 2009).

The respondents’ opinions of the redesign of the service venue of community pharmacies showed that 53% of the respondents believed that this is very important, while 42% believed that this is important. With regard to the professional image of pharmacists (including wearing of pharmacist uniforms and badges), 48% of the respondents agreed that this is very important, and 41% agreed that this is important.

With regard to an independent consulting area for pharmacists, 45% of the respondents agreed that this is very important, and 43% agreed that this is important. Regarding a special medication record for individual customers in the community pharmacy, 46% of the respondents agreed that this is very important, and 41% agreed that it is important. With regard to the notion that a pharmacist should sit instead of stand during a consultation, 31% of the respondents agreed that this is very important, and 34% agreed that it is important.

When asked whether the consulting desk of the pharmacist should have a computer to allow rapid searching for medical information, 39% of the respondents agreed that this is very important, and 50% agreed that it is important. With regard to the notion that the lighting in the pharmacy should be appropriate, 32% of the respondents agreed that this is very important, and 44% agreed that this is important (Table 5).

Table 3. The payment willingness for the “self-care management system”.

Item	Number (%)
I agree to pay for the “self-care management” system.	
Yes	131 (54.6)
No	108 (45.0)
Missing data	1 (0.4)
How much are you willing to pay for the “self-care management system”?	
<1000 NT dollars/month	126 (52.5)
1001 - 1500 NT dollars/month	11 (4.6)
1501 - 2000 NT dollars/month	0 (0.0)
>2000 NT dollars/month	0 (0.0)
Others	3 (1.3)
Missing data	100 (41.7)
How to pay for it?	
One lump sum payment	87 (36.3)
Once a month	21 (8.8)
Once a year	30 (12.5)
Missing data	102 (42.5)

Table 4. The willingness to support hospital health care services referred by the community pharmacy.

Item/Number (%)	Yes	No	Missing data
I would use hospital health care services referred by community pharmacies.	211 (87.9)	28 (11.7)	1 (0.4)
I would follow the referring suggestions by community pharmacies.	203 (84.6)	35 (14.6)	2 (0.8)
I wish there were a free hospital online registry service provided by community pharmacies.	196 (81.7)	44 (18.3)	0 (0)

According to the results of our study of the design of the service venue, the pharmaceutical service provider and the pharmaceutical service recipient had the same point of view, in that they both accepted that the medicines should be displayed on open-style shelves and that the lighting in the sales area should be appropriate to create a comfortable shopping environment. The attire of the pharmacist should exhibit a professional image, and the pharmacist should have a computer during consulting services to quickly obtain relevant medical information and the medication data of the customer.

DISCUSSION

As Taiwan's economy has grown rapidly over the past 30 years, its healthcare system has also shown an enormous transition from a centralized state-controlled system to a more market-based system (Ho and Gostin, 2009). To avoid the high cost of healthcare, many people, especially the uninsured, chose self-medication as their first option when they encounter a need for health care (Zhao et al., 2008; Peng et al., 2010). The principles of self-care, which can be applied to prevent and manage

illness, are known to have arisen from a number of theoretical models such as the theory of self-regulation. Self-regulation models emphasize the importance of self-efficacy, which relates to an individual's belief in their ability to learn and perform specific behaviours, and self-management (Lorig and Holman, 2003), which relates to the practical adoption of such behaviours.

This study found that 95% of respondents agreed that future community pharmacies could link with public health practices and provide healthcare services like a 'self-care management' system. Silcock et al. (2004) proposed that community pharmacists mainly provide prescription-dispensing services and give OTC healthcare advice, thereby, becoming the primary channel of public access to medication. A community pharmacy is not only the frontline for the community to access public health care services, but is also the final perimeter for medication safety and quality, which prevents the incorrect use and misuse of drugs and prevents other medication hazards. The community pharmacy offers the general public access to healthcare professionals and medicines without appointment, and thus, it is a key focus area for promoting self-care of minor ailments (Paudyal et al., 2010). Bell (2009) suggested that the community

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pharmacist must also provide healthcare services (Brahm et al., 2003) in addition to performing the professional duties of a pharmacist. He believed that future development for community pharmacies should focus on (1) public hygiene and health, and (2) the promotion of a community self-healthcare system. Bush et al. (2009) proposed the following examples of public health roles for community pharmacists: providing advice on self-care, supporting customers with chronic illness, maintaining customer medication records, promoting public medication awareness, and providing after-hours services, etc.

Although, there is a clear potential for pharmacies to contribute in a unique way to public health; changes in the behaviour of both pharmacists and the public are likely to be required for innovative services to be successful. Community pharmacists must accept their role in public health and make the necessary behavioural changes to carry out the service more effectively. Similarly, the general public must accept pharmacists as providers of public health services and be willing to seek advice on some health issues from pharmacists rather than other sources (Eades et al., 2011). Even though consumers are generally satisfied with the health advice given by pharmacists, they primarily use pharmacies for dispensing prescriptions and buying OTC medication. As a consequence, to facilitate the necessary behavioural changes among consumers, pharmacists need to continuously enhance their professional knowledge through further education and training. Training has been found to positively affect pharmacists' attitudes and behaviours in relation to health promotion (Eades et al., 2011). For example, some studies reported that pharmacists felt that lack of training or lack of knowledge and skills was a barrier to their ability to provide smoking cessation services (Hudmon et al., 2006). Similarly, over 70% of pharmacists who responded to a survey in Scotland reported that they would like to receive further training on drug misuse (Iversen et al., 2001). Over half of the pharmacists in another study conducted in Scotland reported that attaining additional pharmaceutical knowledge in public health was a priority for their practice now, and two-thirds thought it would be a priority in the future (Pfleger et al., 2008). To facilitate the public's identification and reliance on the health services provided by community pharmacists, it is imperative to strengthen community pharmacists' knowledge and training in public health issues.

This study found that 84.6% of the respondents agreed that community pharmacists should develop a consulting service that provides public healthcare-related knowledge. Pharmacy, like other healthcare professions, is both a knowledge-based and a value-based profession (Benson et al., 2009). Pharmacists can contribute their therapeutic knowledge and medication process expertise to create collaborative and innovative solutions to address medication use and safety problems (Smith, 2011). The healthcare team in a hospital is comparatively more comprehensive than that in a community pharmacy. A community pharmacist does not enjoy the education and training opportunities provided by the hospital to its healthcare teams. To ensure that community pharmacists maintain adequate and sufficient professional knowledge, it is recommended that the FDA, Taiwan Pharmacists Group, or Taiwan Pharmacists Society should provide pharmacists' healthcare knowledge.

Another finding of this study was the fact that 87.9% of respondents were willing to make use of the integrated healthcare services provided by hospitals and community pharmacies. Sultan (2009) believed that the success of community pharmacies in England is due to the following reasons: (1) community pharmacies were integrated into the community care team; (2) community pharmacies maintained their core advantages while providing other services and healthcare assistance; (3) community pharmacies provided customer-oriented services; (4) community pharmacies were willing to take on new challenges; and (5) the promotion of the role of community pharmacies in primary health care enabled them to become healthy living centres in communities, which allowed the residents in communities to learn correct and proper self-healthcare practices. Both the public and scholars from Taiwan and the United Kingdom agreed that community pharmacists could provide healthcare consultation services. We can infer then that the professionalism of community pharmacists with regard to healthcare advice and consultation is recognized by the public.

In our study, 81.7% of respondents believed that community pharmacists could assist the public by providing online hospital registration. This service can help the public make hospital appointments more efficiently, and thus, reduce the waiting time at the hospital. A few small-scale studies have demonstrated cost savings resulting from the health care-related services provided by pharmacists. These economic

Table 5. Design of the service venue.

Item/Number (%)	Very important	Important	General	Not very important	Not important	Missing data
The product display location in community pharmacies should be simple and clean.	126 (53)	100 (42)	13 (5)	1 (0)	0 (0)	0 (0)
The professional image of the pharmacist (including pharmacist uniforms and badges).	114 (48)	99 (41)	23 (10)	3 (1)	1 (0)	0 (0)
There is an independent consulting area for the pharmacist.	109 (45)	102 (43)	26 (11)	1 (0)	1 (0)	1 (0)
There is a special medication record for public.	111 (46)	98 (41)	29 (12)	1 (0)	1 (0)	0 (0)
A pharmacist should sit instead of stand during the consulting service.	74 (31)	81 (34)	67 (28)	15 (6)	3 (1)	0 (0)
The consulting desk of the pharmacist should have a computer to allow the pharmacist to quickly search for medical information.	94 (39)	121 (50)	23 (10)	2 (1)	0 (0)	0 (0)
The lighting in the pharmacy should be appropriate.	76 (32)	106 (44)	48 (20)	10 (4)	0 (0)	0 (0)

Cronbach's

savings largely result from the lower operating cost of pharmacies as opposed to general practitioner (GP) consultations (Bojke et al., 2004; Sewak, 2010). In addition, such services have also shown to be effective in reducing GP workload, especially in treating minor ailments (Bojke et al., 2004). However, overall GP workload was shown to be unaffected, mainly due to the reallocation of GP time from minor ailments to other illnesses (Bojke et al., 2004). Pharmacy management would reduce patient waiting time at the GP's office and increase patient access to their services.

Conclusion

Whether considering the perspectives of service providers or those of consumers of different countries or cultures, the future service development in community pharmacies should undoubtedly focus not just on strengthening professional medical care services, but also on integration with hospitals in promoting public healthcare. In addition to committing to strengthening the professional image of

community pharmacists, community health wellness should be integrated with public healthcare to increase pharmacists' service value to the public (Benson et al., 2009). Appropriate training and support is needed in order to increase pharmacists' confidence in providing public health services. Future research should explore the effectiveness of strategies that increase pharmacists' confidence and enhance their public health practice.

This study's objective was to determine the positions of both pharmaceutical service providers and consumers in Taiwan, and to understand their views regarding service development in community pharmacies. Our results were identical to those obtained in the United Kingdom and South Africa, with the conclusion that future developments for community pharmacists should focus on strengthening their professional pharmacy services.

Furthermore, they should also play a role in promoting community health and wellness. In other words, community pharmacies' promotion of health and wellness must be integrated with the public health system. In order to continue to improve the public health service provided in

community pharmacies, up-to-date information regarding the beliefs and attitudes of pharmacists and consumers towards pharmaceutical public health is needed. Community pharmacists opportunities for continuous education or training to enrich and update community.

LIMITATIONS AND SUGGESTIONS FOR FUTURE STUDIES

For qualitative data collection in this study, we employed a snowballing sampling method. The researchers first located a pharmacist in a community pharmacy, and through his recommendations, obtained a list of potential pharmacists for participation in the survey. Though, the surveyors selected community pharmacists from various types of operations to obtain more extensive perspectives, only six pharmacists were interviewed. As a consequence, the extrapolation of the research results may be limited. In the quantitative data collection, the survey subjects were the customers of the two community pharmacies mentioned in the qualitative study. The total number of valid

samples was only 240, which also limits the extrapolation of the results. Considering the interviewees' willingness in participating in the survey, the questionnaire was designed to be very concise and did not pursue in-depth questions like the public's need for innovation in community pharmacy service. It is suggested that in future studies, besides improving sampling design, the depth of the questionnaire content should be increased. This study found that both the public and community pharmacists agreed that the future development of a pharmacy could be integrated with public health systems. Thus, it is suggested that future studies look into the linking of these two issues.

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APPENDIX

1. Imagine that your community pharmacy develops a 'Self-care Management Card', which includes your records of your health condition and medication for eyes, nose, oral cavity, ears, and skin. It also links to your family medication history, preference in medicine, and purchase record of health products. The database provides your community pharmacist access to a comprehensive record of you and your family's health, which is accessible from other domestic community pharmacies or overseas community pharmacies. Please answer the following questions:

(a) Do you agree that the 'self-care management' system is helpful for personal health management?

Yes No

(b) Are you interested in the 'self-care management' system?

Yes No

(c) Would you recommend the 'self-care management' system to your family?

Yes No

2. Would you pay for the 'self-care management' system?

No Yes (If yes, go to item 3.)

3. How much are you willing to pay for the 'self-care management'?

<1000 NT dollars/month 1001–1500 NT dollars/month
 1501–2000 NT dollars/month >2000 NT dollars/month

4. How would you pay for it?

Lump sum payment Once a month Once a year

5. The following questions pertain to your willingness to support hospital health care services referred by the community pharmacy:

(a) Would you use the hospital health care services referred by community pharmacies?

Yes No

(b) Would you follow the referral suggestions given by community pharmacies?

Yes No

(c) Should community pharmacies provide a free hospital online registry service?

Yes No

6. The following statements pertain to the design of the service venue. Please rank their importance.

(a) The product display locations in community pharmacies should be simple and clean.

Very important Important General Not very important Not important

(b) Pharmacists' attire should portray a professional image (i.e. pharmacist uniforms, badges, etc.).

Very important Important General Not very important Not important

(c) There should be an independent consulting area for

the pharmacist.

Very important Important General Not very important Not important

(d) There should be special medication records for all customers.

Very important Important General Not very important Not important

(e) The pharmacist should be sitting instead of standing during a consultation.

Very important Important General Not very important Not important

(f) The consulting desk of the pharmacist should have a computer to allow the pharmacist to quickly search for medical information.

Very important Important General Not very important Not important

(g) The lighting in the pharmacy should be appropriate.

Very important Important General Not very important Not important

Demographics

1. Gender: Female Male

2. Occupation: Self-employment Agriculture

Commerce Industry

Public servant Academia Student Homemaker

Others

3. Age: 18–20 years 21–30 years 31–40 years

41–50 years 51–60 years >61 years