Mix-method assessment of perspective of the community pharmacists about practice change and implementation of extended pharmacy services

Abstract

Background: Community pharmacists' role in primary health care and patient-centered services beyond traditional dispensing services is well established in the developed countries, however, this role is not fully recognized in low-middle-income countries such as Pakistan.

Objectives: To explore the perspectives of community pharmacists about the extended pharmacy services and the facilitators, preparedness, and barriers toward the practice change.

Method: Two phased study involving mixed-method sequential design. The first phase involved qualitative semi-structured face-to-face interviews with the community pharmacists, while the second phase constituted a quantitative cross-sectional study.

Results: For the first phase, pharmacists were purposively sampled interviewed. The thematic content analysis yielded four distinct themes; 1) current practices and familiarity with extended pharmacy services 2) practice gap between Pakistan and developed countries 3) facilitators and preparedness and 4) barriers toward the implementation and provision. The second phase was quantitative. The triangulation of qualitative and quantitative data identified barriers such as; shortage of pharmacists, lack of knowledge and skills, poor collaboration with general practitioners, failure of customers to pay for extended services. Facilitators and preparedness for the provision of EPS were found to be access to patient notes, follow-up, separate counseling areas, accreditation of specific services, and sufficient resources.

Conclusion: Removal of barriers and recognition of facilitators and preparedness by community pharmacists for practice change and implementation of extended pharmacy services require attention by the government authorities.

Keywords: Community pharmacy; community pharmacists; extended pharmacy services; barriers; facilitators; preparedness

Introduction

Community pharmacists' role as a primary healthcare provider and services beyond traditional dispensing are well established in the developed countries [1]. The joint statement by World Health Organization (WHO) and International Pharmaceutical Federation (FIP) emphasized developing pharmacy services to meet the requirements for safe, effective, and affordable healthcare provision in community and hospital pharmacy settings [2] [3]. In this context, the role of the pharmacist in primary healthcare (PHC) becomes important therefore, it warrants the provision of patient-centered services through community pharmacies. However, the role of the pharmacist in PHC through the provision of patient-centered services is not fully established in low-income countries such as Pakistan.

The concept of extended roles of community pharmacists as a means of achieving PHC has evolved over a period [4]. The attainment of better health for all is connected with effective PHC. In October 2018, WHO Astana Declaration emphasized on the global commitment to primary healthcare by all member countries around the world [5,6]. According to the declaration, the success of PHC is driven by knowledge and capacity building of human resources for health, technology, and financing. The FIP advocates the primary health care agenda of the Astana Declaration and is determined to consolidate the role of pharmacy in delivering primary healthcare. This includes the fundamentals of strengthening pharmacists' contributions to health promotion, disease prevention and screening, as well as drug expertise in communities and national populations . This also includes ensuring quality use of medicines across the globe as the key component of universal health coverage [7]. It is, therefore, imperative that community pharmacists should take this responsibility providing PHC through extended pharmacy services.

Extended pharmacy services (EPS) include; screening of chronic disease, medication therapy management (MTM), chronic disease management (CDM), home medicine review (HMR), patient education, and communication [8,9]. Extended pharmacy services is not only directed to the specific patient population and but also focuses on taking care of chronic diseases such as; diabetes, asthma, osteoporosis and hypertension[10]. The CPs in developed countries such as; the UK, Australia, Canada, and the US are integrated into primary healthcare activities with consequent improved medication and health outcomes [11].

The concept of EPS in Pakistan is new and not fully understood, CPs are underutilized as they are not considered as healthcare professionals and hence their role is not recognized in the healthcare system of Pakistan [12]. Although a small number of pharmacies offer patient counseling services, however, the overall standard of provision of community pharmacy services is poor in Pakistan [13,14]. Generally, the majority of community pharmacists are unaware of the concept of extended pharmacy services [15]. In general, in Pakistan, there is a lack of awareness in public about the role of community pharmacists as well as the collaboration among the healthcare professionals *viz.* pharmacist-physician interaction is not there to an appreciable extent [16].

In this context, the present study used a mix-method approach that involved the convergent triangulation of qualitative and quantitative methods. This study intends to explore the perspective of community pharmacists about the extended pharmacy services and the facilitators, preparedness, and barriers in the practice change.

Ethical approval

Formal approval was granted by the Humans Ethics Committee, University College of Pharmacy, University of the Punjab, Lahore. (No D/HEC/100/UCP1923).

Method

A Mix-method approach was adopted involving the convergent triangulation of qualitative and quantitative approaches in a sequential manner [17,18]. The study was conducted in Lahore, Pakistan.

The first phase of the study was qualitative exploratory. A semi-structured interview guide was developed based on the literature review and the current community pharmacy practice trend in Lahore, Pakistan. The interview guide constituted an exploration of current practices, knowledge, attitude, and perception of EPS. The guide was validated for reliability using argumentative and cumulative techniques[19-21]. The interview guide was piloted on two community pharmacists and modified accordingly. The consented participants were purposively included until saturation was achieved that determined the sample size. The interviews were conducted in English as the respondents were able to converse in English, being graduates of pharmacy institutes where the medium of instruction was the English language. Face-to-face interviews were audio-recorded, each interview lasted from 25 to 30 minutes. The saturation was achieved at the 15th respondent determining the final sample size (N = 15). All interviews were transcribed verbatim and data was analysed using thematic content analysis (TCA).

The second phase of the study constituted a questionnaire-based cross-sectional survey of CPs working in pharmacies of Lahore. The questionnaire was developed based on the literature review as well as the findings from the qualitative study. The questionnaire comprised of demographic data, barriers, and facilitators as well as preparedness towards EPS. Quantitative, data were analysed using SPSS version 22 and descriptive statistics were used for the continuous variables.

Results

Interviews

For the qualitative study, the majority of the interviewed community pharmacists (80%) were males. More than half pharmacists were 20-30 years old, had work experience of 1-5 years, and serving as a first-level pharmacist (Duty pharmacist). (Table 1)

Insert Table 1 here

Thematic content analysis (TCA)

The TCA identified four themes: 1) current practices and familiarity with extended pharmacy services 2) practice gap between Pakistan and developed countries 3) facilitators and preparedness and 4) barriers toward the implementation and provision (Table 2).

Insert Table 2 here

Theme 1: Current practices and familiarity with extended pharmacy services

The respondents were asked for their knowledge about EPS. There was only one respondent who had a clear concept of EPS. Some of the respondents had little idea about the EPS, however, they emphasized the role to be more patient-focused.

The current prevalent practices in the majority of pharmacies usually offering services such as; blood sugar and blood pressure monitoring. Additionally, they guide patients on the dose timing, and lifestyle modifications (Table 2).

Theme 2: Practice gap between Pakistan and developed countries

The respondents of the study were inquired about the differences in practices between Pakistan and the developed countries. The respondents believed there was a significant difference in practices in Pakistan compared to the developed countries such as; the US, Canada, Australia, and the UK and, other European countries. Particularly in Lahore, the community pharmacy practice

is far from patient-oriented, and the business model is more dominant in Lahore and the rest of Pakistan (Table 2).

Theme 3: Facilitators and preparedness

It was perceived that CPs were confident enough to deal with the patients for their health-related issues (Table 2).

Theme 4: Barriers toward the implementation and provision

Several barriers have been identified by the respondents such as; time constraints, record keeping, under-staffing, lack of awareness of patients about pharmacists' skills, poor remunerations and lack of acknowledgment of CPs' clinical knowledge by physicians were identified as major barriers towards practice change and provision of EPS in Lahore, Pakistan (Table 2)

Quantitative phase

With a population of 3618 community pharmacies and an equal number of working community pharmacists in Lahore city of Punjab province, the minimum sample size calculated by using Raosoft sample size calculator came out to be 348 (58). Out of a total of 348 community pharmacists approached, 242 responded to the survey with a response rate of 69.5%. Out of 242 pharmacists surveyed, only about 18% (43) were females. The mean age of the participants was 27.58 ± 4.55 (SD). A large number of respondents (61.2%) were aged between 18-27 years. More than 86% of the pharmacists registered with the pharmacy council after the year 2010 and about 85% were working as a first-level pharmacist. Only about 9% of participants had the work experience of more than 6 years at community pharmacies (Table 3).

Insert Table 3 here

Barriers toward extended pharmacy services

The respondents reacted differently to the various possible barriers to the provision of extended pharmacy services. About 57% did not agree that the shortage of time for pharmacists is a barrier for implementing EPS while 50% stated that the shortage of pharmacists at the community pharmacies is a barrier for EPS. More than 60% agreed that the customers do not pay for the extra services provided by the pharmacists and 57% were of the view that there is no extra remuneration from the employee for providing EPS. About 39% agreed that the lack of adequate knowledge among the pharmacist community is a hurdle for EPS and 80% agreed that there is a lack of recognition by the general physicians about the pharmacists' role in healthcare services provided to the customers. More than 57% of pharmacists also believed that the active participation of the pharmacists can impact on their relations with the general physicians and other health workers. (Table 4)

Insert Table 4 here

Facilitators toward the provision of EPS

Several factors could assist in setting up of EPS. The access to patient notes (65%), designated closed counseling area (about 67%), the patient follow-up and record system (69%), accreditation for a specific activity (60%) and home medicine reviews (56%) was agreed by the participants to be the facilitators in the provision of EPS (Table 5).

Insert Table 5 here.

Preparedness of community pharmacists for EPS

Around 80% of pharmacists were willing to provide extended services to the customers and approximately 49% believed that they had enough staff and manpower with a sufficient range of products and equipment to provide EPS at their pharmacies. (Table 6).

Insert Table 6 here.

Discussion

The present study evaluated the perspective of CPs on current roles, barriers, facilitators, and preparedness for the provision of EPS. The community pharmacy services have changed with focus shifting from products to patient-focused, thus, CPs can play a pivotal role in the delivery of primary care[22-24]. The study identified that the concept of EPS is new and only a few CPs have a clearer idea. This may be attributed to the personal interest of the CPs in patient-centered activities by keeping themselves updated to the latest developments and trends around the world [25].

The present study identified a significant practice gap in Pakistan and developed countries. In developed countries, pharmacists are more involved in promoting safe and effective use of medicines, and proactively involved in PHC, however, developing countries still have to reach the true potential of the concept of primary care [26]. The difference in practice is dependent upon the country's healthcare system, resources, and infrastructure; these aspects directly or indirectly influence the quality of services provided by community pharmacies and is often been questioned in low-middle-income countries because of lack of standardized services [27]. The findings of our study are consistent with the results of a study conducted in Karachi, Pakistan [28].

For seamless patient care, the presence of round the clock pharmacists in the pharmacies is mandatory. The Government of Punjab had amended existing Drug Sale Rules 1987, as Punjab

Drug Sale Rules 2007 [29]. This law permits the sale of drugs only under the supervision of a registered pharmacist. Practice change not only contributes to benefitting patients but also has economic benefits in terms of better business oppurtunities for pharmacies. The evidence has also shown positive clinical, economic and humanistic benefits of pharmacist-directed patient care services [30]. Therefore, the pharmacy can complete its transformation from a commodity-based mercantile operation into a clinically oriented profession in the community pharmacies [31].

The counseling is a routine practice in the majority of pharmacies in Lahore was perceived as part of EPS. A study conducted in Lahore Pakistan reported that the pharmacists were in the pre-contemplation stage of the idea of EPS and to accept practice change [15]. This may be attributed to the fact that pharmacies are only perceived as retail outlets rather than a place where healthcare issues of people can be sought. In Pakistan, it is, therefore, necessary that CPs be trained on the aspects of pharmaceutical care to provide patient services. Hence, specific training programs to enhance pharmacists' skills and competence are deemed necessary for the provision of EPS [32].

Since the change in practice is inevitable, therefore to be at par with the roles of pharmacists in developed countries, barriers need to be removed or minimized and facilitators be enhanced [33].

Lack of recognition of the roles of CPs by the public as well as healthcare professionals have been perceived as a barrier to practice change. Similar findings were presented by Baker et al in Australia [34]. Patient’s trust is directly related to the confidence in service provider, and the patients hardly know about pharmacist therefore, CPs recognized as healthcare provider in Pakistan. A low level of patient satisfaction has been reported earlier by Aziz and co-workers in the context of community pharmacy services in Pakistan [35]. Consistent with our findings, a study in the UAE reported patient dissatisfaction as one of the important impediments in practice change [36].

The present study identified shortage of pharmacists as a barrier to practice change.

Evidence has shown shortage of the pharmacy workforce as a significant barrier to the transformation from traditional roles to patient-centered activities [33]. The shortage of pharmacists in our study setting can be attributed to increased migration trend of pharmacists to overseas for better career prospects, as well as least interest of pharmacy graduates to opt community pharmacy as a career [37 38]. This lack of interest is due to poor salaries and the absence of job-description, and to a major extent job security issues. The policymakers need to address these issues by providing uniform job description for CPs in line with the NHS Community Pharmacy Contractual Framework [39].

Remuneration considered vital for pharmacists rendering services beyond traditional, and it is variable across the globe [40]. The present study identified that pharmacists thought that they might not be paid for the extra services. The willingness to pay by patients for the extended services is directly related to the access to the health care resources and extent of advice from the physicians [41]. The impediment in willingness to pay for extra services in low-middle-income-countries can be attributed to out-of-pocket healthcare expenditure by the public [42]. Sometimes, the willingness to pay is directly related to the confidence of the patient on pharmacist's skills rendering health-related services [43]. Implementation of an appropriate funding model and defined role of community pharmacists is critical for paving the way for recognition and successful implementation of patient-centered services [44].

Barriers to practice change such as lack of clinical knowledge and skills were identified. Extended services require pertinent clinical knowledge and skills for CPs as medication reviews to improve medication adherence and promoting rational use of drugs. On job training programs to improve knowledge and skills have been found necessary for CPs [15]. Similar findings were reported in a study conducted in community pharmacists in Indonesia [45]. Improvement of skills and knowledge

will consequently help improve the confidence of public on CPs [46]. A study reported that the improved pharmacy manager's skills not only influence the performance indicators in terms of employee satisfaction and financial aspects for community pharmacies but also improve customer satisfaction [47].

Lack of collaboration of local physicians and CPs is reported to be another barrier to the provision of patient care services. The collaboration of physicians and pharmacists is considered to be pivotal for the successful provision of primary care [48]. Physicians do not usually perceive CPs as a part of the primary healthcare team, instead consider them as retailers only [49]. Interaction of CP and GP is often brief, or none at all, hence, perceived as a barrier towards practice change [50].

A study in Pakistan reported that doctors regard CPs as drug information experts only and their expectations fall short on the clinical services that pharmacists could render [51,52]. Improved communication with doctors has been reported to have a positive outcome for pharmacies offering patient-centered services[53,54]. In this context, the role of professional associations, regulatory agencies, and patients can is important for overcoming the barriers among healthcare professionals [55].

Access to patient records by the CPs is regarded as facilitator for the practice change, however, this requires specific training of the pharmacists and other staff, and also guidelines for ethical handling of electronic patient records [56]. Access to record should be within privacy constraints and sensitivity is required in this context to avoid any breach [57]. Evidence has shown that follow-up of patient for medication management has positive outcome in terms of humanistic, economic and clinical outcomes [58]. Therefore, it is deemed necessary to establish such systems in community pharmacies to facilitate public.

Separate areas for patient counseling are vital where pharmacists provide counseling to patients on medicines and health-related conditions. At the moment the pharmacies in Lahore do not have separate areas for consultation within the pharmacies. A study in Australia has also demonstrated the need for separate consultation areas in community pharmacies to discuss health-related issues of patients in privacy [59]. Separate counseling areas are required in the changing dynamics of the practice change and implementation of EPS. Home medication review (HMR) is a service provided to patients residing their homes that requires pharmacists' clinical knowledge and skills to optimize the drug therapy of patients. Therefore, accreditation of such services by the local health authorities can facilitate practice change [60].

Availability of appropriate and adequate resources and increasing the capacity of organization can pave the way to practice change [61] . Community pharmacists (CPs) were found to be prepared for the provision of EPS having sufficient resources in terms of workforce, experience, and wide range of products.

Strengths and limitations

To the best of our knowledge, this is the first study in Pakistan using the mixed method approach and attempted to relate data through triangulation. It was conducted in the second largest metropolitan city of Pakistan with inhabitants of approximately 10 million. A better structure of both chain and independent pharmacies is found here.

Since the study was conducted in only one city therefore, results cannot be generalized to the rest of the country. A relatively low response rate may be taken as an inherent limitation owing to the busy schedule of community pharmacists at the workplace.

Conclusion

The barriers need to be removed for practice change and implementation of EPS while the facilitators and preparedness need attention by the government authorities. Moreover, training programs for knowledge and skill development of pharmacists are also required.

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Tables

Table 1: Demographic characteristics of community pharmacists (N=15)

Characteristics	Frequency (percentage)
Age (years)	
20-30	8 (53.3)
31-40	4 (26.6)
>40	3 (20.0)
Gender	
Male	12 (80.0)
Female	3(20.0)
Educational status	
B. Pharmacy	5 (33.3)
Pharm. D	10 (66.6)
Experience (years)	
1-5	8 (53.3)
6-10	4 (26.6)
> 10	3 (20.0)
Status in Pharmacy	
Duty pharmacist	8 (53.3)
Manager pharmacist	6 (26.6)
Proprietor	1 (6.6)

Table 2: Response of community pharmacists about extended pharmacy services and practice change

No	Themes	Selected quotes from respondents
1.	**Current practices and familiarity with EPS**	*"Yes, like the community pharmacy is practiced in the western world. The role of pharmacists beyond the typical dispensing services is known as the extended pharmacy services and health care services"* ***(CP1)*** *"Not as such but have a slight bit of idea about EPS, in fact we are going towards establishing this in addition to typical purchasing, selling and dispending of the drugs"* ***(CP2)*** *"It is quite new I mean the extended pharmacy services…but we are offering services as blood pressure monitoring, blood sugar monitoring counseling services and some advice but more confined to BP and sugar……for chronically ill patients we are providing services as when to take medicine? How much medicine is required? And we advise some lifestyle changes to them……..interacting with patients help us to further improve the service standard"* ***(CP4)***
2.	**Practice gap between Pakistan and developed countries**	*"Well compared with the developed world there is a huge difference of practice. In my view, the pharmacist competency is very important and there should be some specialization in specialized areas, in developed countries the pharmacist has a well-established and recognized role as a healthcare professional"* ***(CP12)*** "*There is major difference between Pakistan and developed world here I think nobody in community pharmacy has a mind set to promote general health or healthcare activities"* ***(CP9)*** *"In developed world the practice is more patient oriented. Pakistan is place far from that system …but I hope in future there would be betterment* ***(CP6)***
3.	**Facilitators and preparedness in providing EPS to customers**	*"Yes I personally feel confident as a pharmacist dealing with the customers for their health issues and this is based upon the time length of the experience…sometimes it is bothersome in a sense that certain queries to be answered require some up to date information resources as internet etc."* ***(CP2)*** *"Yes I have confidence and pharmacists should have the skills to handle any issue relating to drugs and patient's health"* ***(CP9)***
4.	**Barriers toward the implementation and provision of EPS**	*"Limitations and barriers are the patients, lack of awareness and the physicians"* ***(CP7)*** *"Poor salaries offered to pharmacists is a barrier in my opinion and there is no formal job description for pharmacists working in community pharmacy this leads to insecurities in job for*

		pharmacists….as a result the pharmacists rent their licenses out without their physical presence” ***(CP8)*** *"Economic issues are main barrier because the owners don’t pay handsome salaries to community pharmacists, patients do not know pharmacists and physicians do not know much as well about pharmacists' roles"* ***(CP12)***

Table 3: Demographic characteristics of community pharmacists (CPs) in Lahore (N = 242)

Variables	Frequency (n)	Percentage (%)
Gender		
Male	199	82.2
Female	43	17.8
Age (years) (Mean ± SD) = 27.58 ± 4.55		
18-27	148	61.2
28-37	85	35.1
>37	9	3.7
Registration with council (Mean ± SD) = 2.83 ± 0.47		
1980-1990	2	0.8
1991-2000	4	1.7
2001-2010	27	11.2
>2010	209	86.4
Experience (3.04 ± 3.36)		
1-5	219	90.5
6-10	14	5.8
11-15	5	2.1
>15	4	1.7
Current position		
Manager Pharmacist	37	15.7
Employee Pharmacist	204	84.3
Type of owner		
Non-pharmacist	135	55.8
Pharmacist	107	44.2
Type of pharmacy		
Single / independent	80	33.05
Chain pharmacy	162	66.9

Table 4: Barriers toward the extended pharmacy services

Barriers	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
Shortage of time for pharmacist	31(12.8)	49 (20.2)	57 (23.6)	68 (28.1)	35 (14.5)
Shortage of pharmacists	17 (7)	44 (18.2)	59 (24.4)	63 (26.0)	58 (24.0)
Customers won't pay	19 (7.9)	28 (11.6)	49 (20.2)	77 (31.8)	69 (28.5)
Lack of appropriate knowledge / skills by pharmacists	29 (12.0)	45 (18.6)	74 (30.6)	67 (27.7)	27 (11.2)
It is not felt by pharmacists to be part of their job	33 (13.6)	56 (23.1)	70 (28.9)	61 (25.2)	22 (9.1)
There is no extra remuneration	9 (3.7)	21 (8.7)	74 (30.6)	92 (38.0)	46 (19.0)
Would impair working relationship with local GPs or other health workers	14 (5.8)	26 (10.7)	63 (26.0)	103 (42.6)	36 (14.9)
Lack of opportunity to meet with local GPs or other health workers	10 (4.1)	17 (7.0)	43 (17.8)	95 (39.3)	77 (31.8)
GPs do not recognize pharmacist's skills in extended pharmacy services	12 (5.0)	6 (2.5)	28 (11.6%)	70 (28.9%)	126 (52.1%)

Table 5: Facilitators of provision of EPS

Facilitators	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
Access to patient records	18 (7.4)	22 (9.1)	44 (18.2)	93 (38.6)	64 (26.4)
Designated closed counseling area	16 (6.6)	19 (7.9)	44 (18.2)	83 (34.3)	79 (32.6)
Patient follow-up and record system	18 (7.4)	16 (6.6)	39 (16.1)	80 (33.1)	88 (36.4)
Accreditation for specific activity	11 (4.5)	23 (9.5)	62 (25.6)	77 (31.8)	68 (28.2)
Home medicine reviews	20 (8.3)	15 (6.2)	70 (28.9)	75 (31.0)	61 (25.2)

Table 6: Preparedness towards provision of extended pharmacy services

Preparedness	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
My pharmacy is currently prepared to provide extended health care services	4 (1.7)	31 (12.8)	95 (39.3)	87 (36.0)	25 (10.3)
I think pharmacists in general are willing to provide extended health care services	3 (1.2)	10 (4.1)	36 (14.9)	136 (56.2)	57 (23.6)
I have sufficient resources to provide extended health care services in my daily practice	5 (2.1)	37 (15.3)	70 (28.9)	101 (41.7)	29 (12.0)
I have enough staff and manpower to provide extended health care services	9 (3.7)	45 (18.6)	70 (28.9)	93 (38.4)	25 (10.3)
I have wide range of products and equipment in my pharmacy to provide extended health care services	11 (4.5)	51 (21.1)	59 (24.4)	100 (41.3)	21 (8.7)