INNOVATIONS in pharmacy

Volume 2 | Number 4 Article 59

2011

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Keywords: Pharmaceutical care services, community pharmacy, Karachi, clinical pharmacist.

Abstract

Provision of pharmaceutical care services in community pharmacies is a new trend in pharmacy practice worldwide. Published literature from developed countries is available showing benefits of pharmaceutical care services provided in community pharmacies. However, relatively little published literature is available from developing countries in which unique market environments are encountered. This study was conducted to assess the acceptability of community pharmacy based pharmaceutical care services in Karachi. Pharmaceutical care services were developed and offered to pharmacy customers for a period of two months. Acceptability was evaluated with respect to enrollment of participants in the program, discontinuation, and complaints registered. The findings provide a better understanding of pharmaceutical care marketing strategies and are discussed within the context of the health care environment in Karachi.

Introduction

Pharmaceutical care is defined as "the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life".[i] Providing pharmaceutical care has become an integral part of pharmacy practice, irrespective of the setting. Community pharmacy plays a vital role in healthcare outcomes. Community pharmacists traditionally were engaged in the dispensing of medicine only. Over time, community pharmacists started offering pharmaceutical care services. A recent report from International Pharmaceutical Federation (FIP) has highlighted the role of pharmacists and community pharmacy for better healthcare services. It has also proposed guidelines for developing pharmacy practices.[ii]

Research has been conducted in developed countries with respect to pharmaceutical care in community pharmacy and have shown the positive impact of pharmaceutical care services in different clinical settings. However, findings with respect to developing countries are still lacking.[iii] No research was found with respect to community pharmacy based pharmaceutical care services in Pakistan. This study aims to assess the acceptability of pharmaceutical care services provided by community pharmacy among the residents of Karachi.

Methods

The study was conducted in an established community pharmacy with the approval of its owner. The pharmacy was located in a semi-developed area of Karachi. There were no other pharmacies within a five kilometer diameter of the study site. The area consists of a mixed population in term of race and education.

A pharmaceutical care service was developed with the help of internet sources and a market survey. A final version of the pharmaceutical care services used in this study was made based upon the advice of experienced pharmacists and administrators. On arrival of a prescription, a trained pharmacist explained the services and its benefit to each pharmacy customer and invited him or her to enroll in the program. Upon accepting the invitation, a baseline form regarding demographic details was completed and then the prescription was prepared.

Our primary objective was to describe enrollment, discontinuation, and complaints registered over a two month period. A complaint card was provided at the time of enrollment. Our secondary objective included a patient medication profile analysis of enrolled participants to describe diagnoses, number of drugs, and types of drugs used by enrollees.

Results

Based on our market survey and advice of experienced pharmacists and administrators, we presented pharmaceutical care services as a bundled group of services. In our grouping strategy, we bundled services such as a discount policy, home delivery, and monitoring tests, which were familiar "value added" services to customers with new services such as medicine management, clinical pharmacist consultancy, and medication cards. In total, we grouped six services together (some familiar and some unfamiliar to customers) in a novel way that was new to this marketplace. The pharmaceutical care services offered during this study included six components: (1) medicine management, (2) customer medication card, (3) discount policy, (4) clinical pharmacist consultancy, (5) monitoring tests, and (6) home delivery.

Table 1: Pharmaceutical Care Services

Medicine management	Record of medications is maintained with regular review by pharmacist
Home delivery	Monthly supply to the address provided free of cost
Medication card	Card containing list of customer's medications
Discount policy	Discount offered on monthly medication supply
Clinical pharmacist consultancy	A free consultancy will be provided to registered customer on regular basis to review their medication
Monitoring Test	Monitoring tests such as blood pressure measuring and glucose testing will be offered on regular basis

The program "pharmaceutical care services" was offered over a two-month period during early 2011. During the study period, 350 customers visited the pharmacy in which 65 customers bought only non-prescription (over-the-counter) drug products. Amongst the 285 customers who purchased a prescription medication, 63 (22%) were enrolled into the services. The majority of those enrolled into the program were male (69%). The majority of these enrollees had multiple co-morbidities in which the most common co-morbidities were dislipidemia (50%), hypertension (39%), and diabetes mellitus (31%).

Table 2: Enrolled participants and their co-morbidities

Enrolled Participants	63	22%
Male	44	69%
Dyslipidemia	32	50%
Hypertension	25	39%
Diabetes Mellitus	20	31%
Depression	7	11%
Ischemic Heart Disease	6	9%
Asthma	5	8%
Thyroid Disorder	2	2%
Benign Prostatic Hyperplasia	2	2%
Rheumatoid Arthritis	1	1%
Epilepsy	1	1%

The total number of drugs prescribed for the 63 enrolled customers was 262 (average = 4.2 per enrollee). At the end of two months, no participants discontinued the program and two complaints were registered. Each of the complaints related to delays that were experienced in receiving medications.

Discussion

The pharmacy profession is in a process of constant change.[iv] It has moved away from its traditional responsibility of supplying medicine towards a clinically-oriented, patient-centered practice. [v] Thus, pharmacists are viewed less as a supplier of pharmaceutical products, and more as a provider of pharmaceutical care service.[vi] Now the pharmacist's task is to ensure that a patient's drug therapy is appropriately indicated, and that the most effective, safe, and convenient ones are used by the patient. Pharmacists can contribute enormously in drug therapy outcome and patient's quality of life by taking direct responsibility for patients' drug related needs.[vii] Over the years, pharmacists have been involved in providing evidence relating the abilities of pharmacists to address the needs of patients through successful integration of enhanced community practice models. The success of demonstrating the benefits of pharmacists has resulted in increased pressure for change and has led to the concept of pharmacists as providers of pharmaceutical care services.[viii] The provision of pharmaceutical care in community pharmacy is still in an evolutionary phase in different parts of world including Europe (Germany, Sweden), Canada and USA.[ix,x,xi,xii,xiii] Such services sometimes are offered with a focus on a particular disease such as hyperlipidemia, coronary heart disease, asthma.[xiv-xv] Economic evaluation of pharmacists involved in disease management in community pharmacy has shown to be beneficial in reducing monthly health costs in patients.[xvi]

The concept of community pharmacy practice is not well developed in Pakistan; rather, a typical kind of practice can be best described as a "medical store".[xvii] Moreover, the proportion of pharmacy technicians or assistants in pharmaceutical selling facilities is quite high compared with the number of pharmacists.[xviii] Often, medical stores are supervised by non-professional and unqualified personnel with limited knowledge of drugs.[xix]

Putting Findings in Context: Pharmacy Practice in Karachi

Karachi is the most populated city of Pakistan and has a competitive market. A market survey of different parts of Karachi revealed that numerous facilities for selling pharmaceutical products are operating in Karachi (see Table 4). These facilities can be broadly classified into following:

***Institutional pharmacies*:** Institutional pharmacies are facilities that are affiliated with medical institutes such as hospitals, clinics, care homes etc. Most of these pharmacies are operated under the supervision of pharmacist and apply environmental and formulary controls. However, most pharmaceutical products disturbed through these pharmacies are for inpatients. Various services are offered by them such clinical pharmacy services and drug information but they are limited to the hospital.

***Community pharmacies*:** Like hospital pharmacies, they are operated under the supervision of a pharmacist and apply environmental controls. Typically, there are no pharmaceutical care services provided by community pharmacies. Instead, they tend to focus on convenient location and price competition.

***Large medical stores*:** A medical store is a place where pharmaceutical products and consumer products are sold by unqualified personnel mostly in unsuitable storage conditions. One of the most frequent offers that all types of medical stores provides is discounts, ranging from the five to ten percent. Convenient location to busy marketplaces also is a competitive strategy.

***Local medical stores*:** Like large medical stores, they offer discounts and convenient location to neighborhoods, but their inventory of pharmaceutical products is relatively low. To differentiate themselves from other stores, they may offer home delivery services.

Table 4 Market review of Karachi

Type of Facility	Services/ Advantages	Differentiation	Limitation
Institutional pharmacy	Clinical pharmacy, Drug information center, Parenteral nutrition preparation	Clinical pharmacy, Drug information center, Parenteral nutrition preparation	Limited to hospital inpatients
Community pharmacy	Pharmacist Discounts (typically 5%) Environmental controls	Availability of Pharmacist	No customer-pharmacist relation due to managerial responsibilities
Large Medical store	5-10% Discounts Assurance of Product availability	Assurance of Product availability	No access to a pharmacist
Local medical store	Near home Home delivery	Home delivery	No access to a pharmacist

In our study, we developed pharmaceutical care services in a competitive market environment. We expected a low enrollment rate for our project since the pharmaceutical care service offered suffered from a lack of awareness and the role of pharmacist as a medication adviser was novel to this market.[xx] However, we propose that the idea of presenting pharmaceutical care as a group of services made the major difference in its acceptability. In our grouping strategy, we offered services such as a discount policy, home delivery, and monitoring tests, which were familiar "value added" services to customers. We then added new services that were new to customers such as medicine management, clinical pharmacist consultancy, and medication cards to the overall group of services. In total, we grouped six services together (some familiar and some unfamiliar to customers) in a novel way that was new to this marketplace.

The findings revealed that the characteristics of enrolled participants tended to be educated, employed, and middle to old aged. Furthermore, it was also observed that most of the enrolled participants were suffering from multiple diseases and were using multiple medications. Of the 63 enrolled customers, none discontinued the service and only two complaints were received over a two month period.

Limitations

This study had several limitations. First, we did not collect information from people who were offered the services, but did not enroll. Thus, there is no way compare those who enrolled with those who did not enroll. Second, the level of service provided in this study depended on the pharmacists working at the study pharmacy. Pharmacist competency may vary from pharmacy to pharmacy. Thus, extrapolation of our findings to other pharmacies is dependent upon pharmacist competency. Finally, we did not develop a business model for continuation of the pharmaceutical care services offered in this study. Our objective was to assess the acceptability of community pharmacy based pharmaceutical care services in Karachi. More work is needed to develop viable business models for these services.

Conclusions

The objective for this study was to assess the acceptability of community pharmacy based pharmaceutical care services in Karachi. The findings showed that 22 percent of pharmacy customers who were purchasing a prescription medication enrolled in the service when they were presented with an offer to enroll. Over a two-month period, none of the enrollees discontinued the service and the only two complaints that were registered, related to delays in receiving medications. The findings provide a better understanding of pharmaceutical care marketing strategies and are discussed within the context of the health care environment in Karachi. Future research is needed to (1) describe clinical improvements in enrolled patients, (2) investigate perceptions of primary care physicians regarding such a program, and (3) develop viable business models for such service offerings in Karachi.

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