

## ORIGINAL RESEARCH

# Assessment of case management of dyspepsia at community pharmacies in two cities of Pakistan

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## ABSTRACT

This study aimed to document the management of dyspepsia by community pharmacies in two major cities of Pakistan; Islamabad (national capital) and Rawalpindi (twin city).

A comparative, cross-sectional study was designed to document the management of dyspepsia including history taking and provision of advice at 238 randomly selected pharmacies through simulated patient visits in twin cities of Pakistan. Kruskal-Wallis test and Man-Whitney test ( $p \leq 0.05$ ) were used to compare management of dyspepsia by the dispensers working at community pharmacies handled by different provider types in the two cities.

The simulated patients were dealt by a pharmacy salesperson in 75.6% ( $n = 180$ ) of visits. Medication was dispensed in 73.5% ( $n = 175$ ) of the visits, while in 10.9% ( $n = 26$ ) of the cases the customer was referred directly to a physician. No significant difference at ( $p \leq 0.05$ ) was observed among history taking and advice provision in treatment of dyspepsia by the dispensers working at community pharmacies handled by different provider types and situated at different settings in the two cities.

This study highlighted poor case management and dispensing practices of dyspepsia at community pharmacies in Pakistan. Absence of qualified people, lack of provision of advice and lack of professionalism by the dispensers are the main reasons for the poor quality of services at community pharmacies.

**KEYWORDS:** Community pharmacies, dyspepsia, dispensers, history taking, provision of advice, Pakistan.

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## INTRODUCTION

Dyspepsia is usually defined as the discomfort and pain sited in the center of upper GIT. Indigestion and heart burn are the common characteristics (1). Dyspepsia is a common complaint by the patients in daily clinical practice; therefore, its management should be based on the best evidence. Predominant epigastric pain or dis-

comfort helps to distinguish dyspepsia from GERD; in the latter the dominant complaint is typically heartburn or acid regurgitation but there might be a distinct epigastric component that is confusing (2). Frequent reflux symptoms (twice a week or more) probably impair quality of life and are generally considered to identify GERD until proven otherwise (3). Alcohol con-

sumption, smoking, carbonated drinks and over use of NSAIDs especially aspirin and ibuprofen are the main factors causing dyspepsia (4). The treatment strategies for the dyspepsia include antacids initially and then H2 receptor antagonist or PPI (5).

Community pharmacies are used as a first line health care source around the globe (6). They act as the initial as well as the last point of health care for majority of the population in the developing countries (7). Inappropriate distribution of medicines through community pharmacies is extensively documented as a problem in developing countries (8). Most of the patients presenting with dyspepsia at community pharmacies usually have other co morbidities hence inappropriate case management at pharmacies may result in increase in cost of therapy and health risks (9).

Community pharmacies are looked upon for their potential in disease management, which requires knowledge and skills of the dispensers in the treatment of common ailments and their understanding of patient referral. This can be achieved through effective history taking and **counseling of the patients regarding their disease and drug therapy (10)**. Community pharmacies refer some of the patients to the doctor and some with the remedy according to the patient replies, **dispensing of prescription medication** is a common practice in treating dyspepsia (11). Majority of the population usually visit community pharmacies for the relief of **post- prandial** aggravation in Pakistan (12,13). Community pharmacies are considered as a chief source of drugs but little has been reported on actual scenario at these pharmacies, especially from the perspective of case management of common ailments such as dyspepsia. However, information about the current practices for dyspepsia at these pharmacies in Pakistan must be explored. This study aims to document and compare the case management and referral practices of dyspepsia at community pharmacies in twin cities of Pakistan.

## METHOD

A cross sectional survey was conducted between February and April 2012. Standard visits to community pharmacies were performed in order to collect information on case management of dyspepsia such as patient history taking and provision of advice. The study was approved by District Health Officer and relevant drug inspectors. Chapter of druggist and chemist association was also informed regarding the study.

### **Sampling of pharmacies and respondents**

The study population was all community pharmacy outlets selling allopathic medicines, or homeopathic or herbal medicines if sold alongside allopathic medicines. Any shop meeting this definition constituted the sampling unit; the sampling element included the dispenser working at these pharmacies. Simple random sampling technique was used to draw the sample of pharmacies from the list of community pharmacies obtained from respective district health offices by using lottery method. The total population of community pharmacies in Islamabad and Rawalpindi were 169 and 170 respectively. Sample size of community pharmacies in Islamabad (n= 118) and in Rawalpindi (n= 120) was calculated by using the raosoft at 95% confidence interval. Visits to request treatment advice for a patient were made to a total of 238 pharmacies.

### **Data collection tool**

The data collection tool was adopted from the World Health Organization manual "How to investigate drug use in health facilities" and modified according to the objectives of the study (14). Focus group discussions were carried out with clinicians, drug inspectors, pharmacists from academia and community to discuss the content of the tool. Face and content validity were built through a panel of experts including clinicians, pharmacy research experts, community pharmacists, statisticians and by pilot testing. Cronbach alpha, applied to assess the reliability and internal consistency of the data, was 0.68 (15).

The observation form included 24 items covering: demographic characteristics of the pharmacies, history of the illness, history of medication use, general medical history, outcome of the visit (medication dispensed or referral to physician) and advice regarding the dose, frequency, duration, use and side effects of any medication dispensed.

Case management was assessed with 2 subscales. The first scored the pharmacy outlet's compliance with 5 items about history taking: patient's age, patient's weight, history of illness, history of medication use and other medical history. The second checklist scored the outlet's compliance with 5 items concerning provision of information about the medication dispensed in terms of: dose, frequency of doses, duration of use, effect of the drug and side-effects/precautions in use. In both scales the scores were computed on the basis of 1 = yes and 2 = no, so the total score was between 5-10 with lower scores indicating better management. The 2 subscales were considered as the minimum standard of history taking and provision of medication information. The form included additional information such as provider type, setting, outcome of the visit (medication dispensed or referral to physician), suggestions of remedy and advice given by the dispenser.

### **Data collection**

Data was collected by trained data collectors after obtaining permission from the relevant district health officer and drug inspectors. Local leaders of chemist and druggist associations were also contacted and informed about the study. The data collectors were local students in their final year of the Doctor of Pharmacy program and were trained by the group of experts including the principal investigator who visited all 238 pharmacies.

The data collectors were both male and females. The data collector presented him/ herself to pharmacy with complaints of heartburn, bloating, abdominal pain and stated that he/she wanted to buy drugs for medical treatment. Other than the standard complaint/symptoms no information was presented unless asked for by the dispenser. One visit was made to each selected pharmacy and the data collectors recorded the management of the encounter at the end of each visit using the structured observation form. They documented any questions that the pharmacy attendant/dispenser asked before making a recommendation, including any discussion on the need for medication and on alternative therapy/ advice, any explanation given about the product recommended; and any advice, such as how to treat the condition or when to see a doctor. Any product that was finally recommended was purchased in the quantities suggested. The principal investigator ensured that

the observation forms of each pharmacy were compiled and labeled with the name of the pharmacy. The observation forms were brought back to the principal investigator on the following day.

### Data analysis

The data were sorted for any missing data and coded and entered in SPSS, version 16. Kruskal-Wallis and Mann-Whitney tests ( $p \leq 0.05$ ) were performed to compare case management of dyspepsia by community pharmacies with reference to independent variables such city, setting (rural/ urban) and type of dispenser (salesperson, diploma holder or pharmacist).

## RESULTS

### Demographics

Of the 238 community pharmacies visited, 49.5% ( $n=118$ ) were located in Islamabad and 50.5% ( $n=120$ ) in Rawalpindi. Overall 63.9% ( $n=152$ ) were located in urban areas and 36.1% ( $n=86$ ) in rural areas. The simulated patients were dealt by a pharmacy salesperson in 75.6% ( $n=180$ ) of visits, by a pharmacist in 5.5% ( $n=13$ ) and diploma holders in 18.9% ( $n=45$ ).

### Management and history taking

The scores on the history taking observation checklist showed that patient's age was enquired about in 4.2% ( $n=10$ ) of visits to pharmacies and history of current illness in 18.9% ( $n=45$ ) of visits. On the other hand the pharmacy personnel asked about history of medication use in 8.4% ( $n=20$ ), medical history in 20.1% ( $n=48$ ) and weight of the patient in only 0% ( $n=0$ ) of the cases. Medication was dispensed in 73.5% ( $n=175$ ) of the

visits, while in 10.9% ( $n=26$ ) of the cases the customer was referred directly to a physician; in 2.5% ( $n=6$ ) of the cases the patient was referred but a remedy was also suggested (Table 1).

### Provision of advice and type of medicines dispensed

Of the visits where drugs were dispensed 23.2% ( $n=50$ ) were proton pump inhibitors, 46.5% ( $n=100$ ) were antacids and 23.2% ( $n=50$ ) were H2 blockers. Of the total items prescribed 53.5% ( $n=115$ ) were prescription medicines (according to Pakistan's drug sale rules) and 46.5% ( $n=100$ ) were "over-the-counter drugs (eg antacids).

The scores on the medication information checklist showed that the appropriate dose of medicine for the treatment of dyspepsia was communicated to the customer in 46.5% ( $n=100$ ) of cases, frequency of treatment in 46.5% ( $n=100$ ), duration of regimen in 10.0% ( $n=24$ ) and use in 10.0% ( $n=24$ ). While possible side effects of drugs were communicated in 0% ( $n=0$ ) of the cases (Table 2).

### Management by type of pharmacy

Man-Whitney test was used to compare disease management of dyspepsia by community pharmacies situated in different settings in the two cities. No significant difference ( $p \leq 0.05$ ) was seen in history taking and provision of medication information at community pharmacies situated in different settings in the two cities (Table 3).

Kruskal-Wallis test ( $p \leq 0.05$ ) was used to compare disease management performed by different types of dispensers at community pharmacies. On the other hand, no significant dif-

**TABLE 1.** Management and history taking of dyspepsia by dispensers working at community pharmacies in the two cities

Indicator	Islamabad n = 118	Rawalpindi n = 120	Composite n = 238
	n (%)	n (%)	n (%)
Age of patient was asked	5 (4.23)	5 (4.16)	10 (4.20)
Weight of patient was asked	0 (0.00)	0 (0.00)	0 (0.00)
Hx of illness was asked	36 (30.50)	9 (7.50)	45 (18.90)
Hx of medication was asked	16 (13.55)	4 (3.33)	20 (8.40)
Medical Hx was asked	8 (6.77)	40 (33.33)	48 (20.16)
Medication dispensed	95 (80.50)	80 (66.66)	175 (73.52)
Patient referred directly to physician	10 (8.47)	16 (13.33)	26 (10.92)
Patient referred but remedy also suggested	3 (2.54)	3 (2.50)	6 (2.52)
Patient not referred and no remedy suggested	0 (0.00)	1 (0.83)	1 (0.42)

**TABLE 2.** Provision of advice and type of medicines dispensed for dyspepsia at community pharmacies in the two cities

Type of medications dispensed	Islamabad n = 110	Rawalpindi n = 105	Composite n = 215
	n (%)	n (%)	n (%)
Antacids	45 (40.90)	55 (52.38)	100 (46.51)
Proton pump inhibitors	25 (22.72)	25 (23.80)	50 (23.25)
H2 blocker	30 (27.27)	20 (19.04)	50 (23.25)
PPI & Antacids	10 (9.09)	5 (4.76)	15 (6.30)
Total	110 (100)	105 (100)	215(100)
Advice given on medication dispensed			
Dose	44 (40.00)	56 (53.33)	100 (46.51)
Frequency	44 (40.00)	56 (53.33)	100 (46.51)
Duration	20 (18.18)	4 (3.80)	24 (10.08)
Use	24 (21.81)	0 (0.00)	24 (10.08)
Side effects/cautions	0 (0.00)	0 (0.00)	0 (0.00)

**TABLE 3.** Case management of dyspepsia at community pharmacies located in the two cities.

Variable	History taking				Provision of advice			
	No of pharmacies visited	Median scale score	U	P value	No of pharmacies visited	Median scale score	U	P value
Cities								
Islamabad	118	9	52.71	0.07	118	10	55.99	0.179
Rawalpindi	120	9			120	10		
Settings								
Rural	86	10	126.00	0.08	10	10	131.00	0.028
Urban	152	10			10	10		

Mann-Whitney test  $p \leq 0.05$

**TABLE 4.** Case management of dyspepsia by different provider type at community pharmacies situated at different locations.

Variables	History taking				Provision of advice			
	No of pharmacies visited	Median scale score	H	P value	No of pharmacies visited	Median scale score	H	P value
Type of providers								
Pharmacist	13	9	10.22	0.060	13	10	1.30	0.520
Diploma holder	45	9			45	10		
Salesman	180	9			180	10		

Kruskal-Wallis test  $p \leq 0.05$

ference ( $p \leq 0.05$ ) was seen in history taking and provision of medication information given by pharmacies handled by different types of dispensers (Table 4).

## DISCUSSION

The present study documents the case management of dispensers for the treatment of dyspepsia at community pharmacies in Pakistan. The results showed that **the management of requests of advice for simulated patients with dyspepsia at community pharmacies in Pakistan was unsatisfactory. Similar results were reported by other studies showing inappropriate prescribing of drugs without any counseling by the dispensers to their customers (16-18).**

History taking is one of the essential factors for patient better perceptive and disease management. The results of the present study revealed that history taking was not performed frequently by the community pharmacies. Thus, diagnosis was made on just signs and symptoms told by the patient without further probing and nearly remedy was suggested by all the pharmacies for the treatment of dyspepsia. Similar, practices were reported by various studies in developing countries including Pakistan (10,19). However, the process of history taking can help in differential diagnosis which can facilitate appropriate treatment protocols for the community health workers for their subjected disease and can result in better patient outcomes (20).

Counseling is an important part of the dispensing practices. It increases the patient compliance and adherence towards the

medication and results in better patient-provider relationship and understanding (21). The results of the present study revealed no significant difference regarding case management of dyspepsia at community pharmacies in different cities. The presence of different provider types at community pharmacies did not significantly affect the dispensing practices and dyspepsia management in different cities. This might be due to lack of qualified and trained personnel and poor system of accountability.

Similar results of low counseling at community pharmacies were reported by other studies (19,22,23). *However, several studies have highlighted that availability of pharmacist and provision of counseling to the patients can increase patient compliance with the therapy (23,24).*

## CONCLUSION

This study highlighted poor case management and dispensing practices of dyspepsia at community pharmacies in Pakistan. Absence of qualified people, lack of provision of advice and lack of professionalism by the dispensers are the main reasons for the poor quality of services offered at community pharmacies. Patients were being treated by dispensers at community pharmacies without any understanding of referral. Strict implementation of laws to ensure the availability of qualified person and training of currently available personnel through collaborative efforts of all the stakeholders can improve the current case management of dyspepsia at community pharmacies in Pakistan.

## Pakistan'ın iki şehrindeki serbest eczanelerde dispepsi olgularına yaklaşım

Bu çalışmada, Pakistan'ın iki büyük şehrindeki (İslamabad [başkent] ve Rawalpindi [ikiz şehir]), serbest eczanelerde reçete karşılayan kişilerin dispepsi olgularına yaklaşımlarının değerlendirilmesi amaçlanmaktadır.

Karşılaştırmalı, kesitsel bu çalışmada, eczanelerin hasta öyküsü alması ve danışmanlık hizmetleri dahil dispepsi tedavi yaklaşımlarını değerlendirilmek için Pakistan'ın iki şehirlerinde yer alan randomize olarak seçilmiş toplam 238 eczaneye simüle hasta ziyaretleri tasarlanmıştır. İki şehirdeki farklı tip serbest eczanelerde reçete karşılayanların dispepsi tedavi yaklaşımlarının karşılaştırılmasında Kruskal-Wallis testi ve Mann-Whitney U testi ( $p \leq 0.05$ ) kullanılmıştır. Simüle hastalar eczanelerin %75.6'sında ( $n=180$ ) eczacı veya eczacı teknisyeni olmayan satış elemanları tarafından karşılanmıştır. Ziyaretlerin %73.5'inde ilaç verilirken; olguların %10.9'u ( $n=26$ ) doktora yönlendirilmiştir. İki şehirdeki farklı tip serbest eczanelerde reçete karşılayanların dispepsi tedavi yaklaşımlarındaki hasta öyküsü alma ve danışmanlık hizmetleri arasında istatistiksel olarak anlamlı fark gözlenmemiştir ( $p > 0.05$ ). Bu çalışma, Pakistan'daki serbest eczanelerde dispepsinin olgu yaklaşımı ve ilaç sağlama hizmetlerinin kötü olduğuna dikkati çekmektedir. Serbest eczanelerdeki eğitilmiş personel eksikliği, reçete karşılanma sürecinde özellikle hasta danışmanlığı gibi hizmetlerin kalitesinde yetersizliğe neden olmaktadır.

**ANAHTAR SÖZCÜKLER:** eczane, eczacı, dispepsi, hasta öyküsü, hasta danışmanlığı

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