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EVALUATION OF DRUG DISPENSING PRACTICES BY PHARMACEUTICAL DRUG RETAILERS IN PAKISTAN

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ABSTRACT

Objective: To investigate the dispensing practices of pharmaceutical retailers in Pakistan and compare them with their qualification and workload. **Methods:** A quantitative cross sectional survey was carried out for 4 months which targeted the pharmaceutical retailers. The target population consisted of pharmaceutical retailers involved in pharmaceutical drug retail sales in Pakistan. The survey questionnaire was sent to 2021 pharmaceutical retailers all over Pakistan. Cross tabulation and chi square X^2 test for association was used. The data was analyzed using SPSS v 20 (Statistical Package for social sciences version 20). **Results:** The majority of the pharmacy retailers belonged to the age group between 26 years to 35 years (N = 540, 34.4%) and almost half were graduates (N = 920, 58.6%). Most of them had experience of more than 10 years in the field (N = 480, 30.6%). Majority observed dispensed a prescription in between average 1 to 5 minutes (N = 1220, 77.7%) and bulk of pharmacy retailers employed persons with pharmacy certificate course or a non pharmacy qualification as pharmacists (N = 1380, 87.9%). **Conclusion:** The work experience of drug retailers is associated with increasing tendency of many drug dispensing practices but the community pharmacy sector necessitates serious measures to be taken to ensure the steady improvement by implementing the policies and regulations where drug retailing practices may be monitored by a pharmacist only instead of non qualified personnel in every community pharmacy.

KEYWORDS: Knowledge; Drug; Dispensing; Pharmaceutical; Retailers; Pakistan.

1. INTRODUCTION

The increased awareness and knowledge about the medicines is beneficial to the patient care in nearly every setting. This knowledge helps to improve pharmaceutical care which inculcates the understanding of the role of drugs in the respective treatment, their potential adverse effects and monitoring of the therapy in disease specific way.[1] A pharmacist, in this regard is the right person who optimizes the pharmacological treatment of the diseases and can give vital information to the patients about their treatment. This is often very true especially in the community health care settings where the patient's trust on their pharmacists gives them confidence and helps them in judgment about the therapy.[1-3]

In Pakistan, pharmacy practice is largely unsatisfactory owing to the limited number of pharmacists produced in the society, which, along with less attracting salaries leads to scarcity of community pharmacists and ultimately to dysregulated infrastructure.[1,4] To fill in this vacuum at community scale, salesmen with no formal pharmacy education and training are present at a high and alarming proportion.[1,5] They have neither any adequate knowledge about the drug storage, their indications and contraindications, nor do they seek any knowledge to provide counseling to the patients.[1,6] This is one of the major factors that contribute to the widespread prevalence of self medication practices in the country where even in the urban areas mothers often give OTC and unknown medications to their children without prescription at improper and quite often at higher doses.[1,7] The other factors being; lack of proper awareness about medicines, convenience for the patients, efficacy of medicines in their last experience and avoiding the fee of medical practitioners.[4] This irresponsible practice not only harms the individuals themselves, rather it also facilitates the emergence of resistant pathogens and an overall economic burden at the international level, as seen in the cases of self medication of antibiotics. Ironically, there has been an increased availability of OTC drugs to the general public in the recent years especially due to new FDA policies in the last decade, which in turn requires a great deal of efforts from the community pharmacists, especially in the case where the public largely perceives OTC medications as un harmful or cannot identify the active ingredient.[9,10]

In this study we have tried to compare the knowledge and dispensing practices of the drug retailers on the basis of their qualification and experience in community setting.

The study was carried out using a questionnaire designed specifically with the intent of understanding of basic dispensing practices anticipated from qualified pharmacists, keeping in mind the countries' local pharmacy practice. The questionnaire consisted of three major sections, dealing with the qualification and knowledge, experience and workload at pharmacy and the dispensing practices including patient counseling.

2. Methodology

A quantitative cross sectional survey was carried out which targeted the pharmaceutical retailers in Pakistan.

2.1 Duration of the study

The study was conducted for 4 months i.e. October 2013 to January 2014.

2.2 Research instrument

The research instrument consisted of a structured questionnaire in English and Urdu language.

2.3 Piloting and validation

The questionnaire was piloted on a number of respondents and was validated by a team of experts.

2.4 Target population and sampling

The target population consisted of pharmaceutical retailers involved in pharmaceutical drug retail sales in Pakistan. Probability sampling technique was applied.

2.5 Inclusion and exclusion criteria

The inclusion and exclusion criteria were set as all retailers who were involved in the pharmaceutical drug sales were included and those retailers associated with sales other than pharmaceutical drugs were excluded from the study. All incompletely filled questionnaires were also excluded from the study.

2.6 Statistical Analysis

Cross tabulation and chi square X^2 test for association was used. The data was analyzed using SPSS v 20 (Statistical Package for social sciences version 20). The data expressed as *P* values. Statistical significance was accepted at *P values <0.05*.

2.7 Approval of the study and statement of consent

The study was approved by the institutional review board of Clifton Hospital, Karachi, Pakistan. Before the initiation of the survey, an informed, written consent was obtained from the respondents.

3. RESULTS

A questionnaire was sent to 2021 drug retailers out of which 1830 responded, 260 questionnaires were excluded due to incorrect and/or incomplete filling leaving behind 1570 questionnaires to document giving a response rate of 77.6%. The results of the study are explained in the following sections.

3.1 Demographics

A quarter of the target group did not disclose their age (N = 390, 24.8%). The majority of the pharmacy retailers belonged to the age group between 26 years to 35 years (N = 540, 34.4%) followed by those between 36 years to 45 years (N = 280, 17.8%). Some appeared to be above the age of 45 years (N = 210, 13.4%). Very few were below 25 years of age (N = 150, 9.6%).

In terms of their qualification, majority were graduates (N = 920, 58.6%) followed by slightly less than a quarter of those who had completed their intermediate or high secondary school (N = 360, 22.9%). Almost a third of the target group had experience of more than 10 years in the field (N = 480, 30.6%) and those between 5 to 10 years just tailing behind them (N = 440, 28%). Slightly more than a quarter of the target segment were observed to have an experience of between 3 to 5 years (N = 410, 26.1%). Table 1 tabulates the summary of demographics.

Table 1: Summary of demographics

S. No	Variable	Sample (N)	Percentage (%)
1	**Age**		
1.1	Below 25 years	150	9.6%
1.2	Between 26 years to 35 years	540	34.4%
1.3	Between 36 years to 45 years	280	17.8%
1.4	Above 45 years	210	13.4%
1.5	No disclosure	390	24.8%
1.6	**Total**	1570	100%
2	**Qualification**		
2.1	Matriculation	80	5.1%
2.2	Intermediate	360	22.9%
2.3	Graduate	920	58.6%
2.4	Post graduate	120	7.6%

2.5	No disclosure	90	5.7%
2.6	**Total**	1570	100%
3	**Work experience**		
3.1	Less than 3 years	240	15.3%
3.2	Between 3 years to 5 years	410	26.1%
3.3	Between 5 years to 10 years	440	28%
3.4	More than 10 years	480	30.6%
3.5	**Total**	1570	100%

3.2 Characteristics of pharmacy retailing

Majority of pharmacy retailers were observed dispensing a prescription in between average 1 to 5 minutes (N = 1220, 77.7%), however few of them took an average 5 to 10 minutes to do so (N = 200, 12.7%). Very few dispensed average prescription in less than 1 minute (N = 140, 8.9%). In case of pharmacists employed, bulk of retail pharmacies employed a single or no pharmacist at all (N = 1300, 82.8%). Less than a fifth of the target group employed pharmacists between 2 to 5 in number (N = 230, 14.6%). Majority of pharmacy retailers employed persons with pharmacy certificate course or a non pharmacy qualification as pharmacists in the retail (N = 1380, 87.9%) followed by persons with a Bachelor of Pharmacy (B.Pharm) qualification (N = 120, 7.6%) and Doctor of Pharmacy (Pharm.D) qualification (N = 50, 3.2%). Table 2 provides a summary of retail characteristics of pharmacies.

Table 2: Summary of retail characteristics of pharmacies

S. No	Variable	Sample (N)	Percentage (%)
1	**Average prescription dispensing time**		
1.1	Less than 1 minute	140	8.9%
1.2	Between 1 to 5 minutes	1220	77.7%
1.3	Between 5 to 10 minutes	200	12.7%
1.4	More than 10 minutes	10	0.6%
1.5	**Total**	**1570**	**100%**
2	**Number of employed pharmacists**		
2.1	Between 0 to 1 pharmacist	1300	82.8%
2.2	Between 2 to 5 pharmacists	230	14.6%
2.3	Between 5 to 10 pharmacists	30	1.9%
2.4	More than 10 pharmacists	10	0.6%
2.5	**Total**	**1570**	**100%**
3	**Level of qualifications of employed personals as pharmacists**		
3.1	Doctor of Pharmacy (Pharm.D)	50	3.2%
3.2	Bachelor of Pharmacy (B.Pharm)	120	7.6%
3.3	Master in Pharmacy (M.Pharm)	20	1.3%
3.4	Pharmacy certificate course/ Non pharmacy	1380	87.9%
3.5	**Total**	**1570**	**100%**

3.3 Association of variables with work experience

The working experience of the drug retailers were found to be associated with the number of patients visiting them each day *(P value <0.01)* and as the work experience increased the number of patients visiting them increased. Prescription interventions were also observed to be associated as it increased with work experience *(P value <0.01)*. Pharmaceutical interventions also increased with incrementing work experience of the pharmacy retailers *(P value <0.05).* It was also observed that the work experience of retailers was associated with their tendency to sell prescription drugs without a prescription (*P value <0.01).* As the work experience of the pharmacy retailers increase, their tendency to indulge in such practice was also observed to increase. In case of patient counseling, it was observed that the work experience of retailers was related to their knowledge which augmented with their work experience *(P value <0.01).* A hesitation to counsel patients was seen in retailers who had little work experience *(P value <0.05).* Table 3 provides a summary of associations.

Table 3: Summary of associations with work experience

S. No	Associated variables with work experience	*P value*
1	Number of patients visiting them each day	<0.01
2	Prescription interventions	<0.01
3	Pharmaceutical interventions	<0.01
4	Tendency to sell prescription drugs without a prescription	<0.05
5	Knowledge about patient counseling	<0.01
6	Hesitation to counsel patients	<0.01
7	Perception of public respect	<0.05

4. DISCUSSION

As this study primarily investigates various drug dispensing practices associated with the work experience of the retailers beside their knowledge. It was observed that the work experience of the pharmaceutical retailers was associated with the number of patients who visit them each day (*P value <0.01*). The reason could be attributed to the fact considering the overall health care environment of Pakistan, the level of recognition a pharmacist has at present, these drugs retailers with their experience are perceived by the patients to be a pharmacist and a chemist. Moreover, due to the dysregulated drugs sales in Pakistan they are perceived by the patients as the ones to be consulted in absence of the doctors with almost no health cost.[4] This is one of the major factors in countries like Pakistan where patients have to pay direct medical costs.[11]

Our findings revealed that the work experience of pharmaceutical retailers were also associated with prescription intervention usually done by pharmacists (*P value <0.01*). It was observed that as the experience of pharmaceutical retailers grows, the more they are seen indulged in prescription intervention. It reiterates the aforementioned fact of pharmaceutical retailers being viewed as the ones to be consulted in absence of physicians and a sense of professional threat and/or job security they might feel keeping in view the development of pharmacy profession during the last decade.

It was also observed that the work experience was related to selling the drug without prescription (*P value <0.01*). Although the inexperienced pharmaceutical sellers are cautious but as their experience increase they become acquainted to the norm of the health care system of Pakistan and understand the loop hole the present system has.[8,12] Another possible explanation to this theory could be the fact that the pharmaceutical sales is not a public health driven business but is more of a profit driven business. This might be a dominant reason to sell the drugs regardless of their prescribing indications to increase the sales. The reason could be the fact that the health care environment of the country wears an awful look as there is no check and balance mechanisms of prescription drugs sales and no vigilance is practiced by the responsible authorities.[4,12]

It was also observed that as the experience grows the pharmaceutical retailers find themselves in a better position to guide patients about the drug devices usage techniques which is understandable considering their experience in the line (*P value <0.05*). This indicates that the drug retailers with passage of time carry out pharmaceutical interventions on patients usually considered as a pharmacist's domain in the developed countries.

In case of patient counseling, it was observed that the work experience of retailers was related to their knowledge about the term (*P value <0.01*). Surprisingly, the inexperienced retailers appeared confident about the understanding of the term. However, none but only the experienced drug retailers indicated their understanding about patient counseling. The inexperience of the drug retailers rendered them being overconfident regarding the understanding however the experienced retailers were cautious in their response. The trend was the same when the experience of retailers and their hesitation in patient counseling was tested (*P value <0.05*).

Finally, there work experience and their perception of public respect they usually get was tested and it was observed that the majority indicated their affirmation however, it was observed that the inexperienced retailers did complain of not getting public respect and this complaining trend went on decline as their experience grew (*P value <0.05*). It could be again restated that as their experience grows they are perceived as a chemist or a pharmacist by the patients.

5. CONCLUSION

The dispensing practices of pharmaceutical retailers tend to improve with the experience; however, they also tend to practice the activities which are critical for the patient care, for e.g. tendency to sell prescription drugs without a prescription and patient counselling without having qualification especially when the patients go easy way out directly to the drug retailer for medicines.

The pharmaceutical retail sector demands serious regulations to be implemented and policies must be implemented to warrant a qualified pharmacist to monitor drug retailing practices at every pharmacy in the country.

6. CONFLICT OF INTERESTS AND FUNDING

The authors declare no conflict of interests exists and no funding was obtained.

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