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A COMMUNITY SURVEY ON KNOWLEDGE, ATTITUDE AND PRACTICE OF PHARMACY PRACTICE REGULATIONS AMONG PHARMACISTS IN KERALA, SOUTHERN INDIA

Introduction

Indian pharmacists are currently considered only 'drug dispensers' because they do not provide patient-oriented services recommended by WHO. In the current Indian scenario, public holds doctors in high esteem with little recognition of dispensing pharmacists. This is because they are neither familiar with their duties nor confident that they can play an effective role in health-care delivery. [(1)] Despite multiple options for qualifying as a pharmacist (D Pharm, Pharm D, B Pharm and M Pharm), they are rarely involved in direct-patient care. Consumers expect the medicines dispensed by the pharmacists to be safe, effective and affordable. Pharmacy Practice Regulations 2015 (PPR2015) obligates ADR monitoring, drug interactions, answering drug information queries, offering counseling services, demonstration of pharmaceutical aids and even offering drug, disease and lifestyle-based counseling. However, majority of the community pharmacists have failed to meet these requirements because only the rigorous six year-Pharm D curriculum is patient-oriented. D Pharm students form the bulk of community pharmacists in India. In fact, many of the backward districts in India continue to run their retail outlets without any pharmacist [(2)]. The Diploma in pharmacy curriculum, which offers the training module for community pharmacies in India has not updated its curriculum to train pharmacists in patient-oriented services [(3).] The reasons for their suboptimal performance are also likely to be lack of knowledge, attitude and practice. Other reasons may be undue focus on monetary return, lack of time, lack of interest and possible domination by the other healthcare professionals and the greater trust consumers place on healthcare professionals other than pharmacists.

The Pharmacy Act and the Drugs and Cosmetics Act, introduced several decades ago, continue to regulate pharmacy practice to this day. However, there has been a recent attempt at reform, beginning with the new set of regulations of 2015 (PPR2015), which lay down a uniform code of pharmacy ethics, responsibilities, job requirements, and roles of both community pharmacist and drug information pharmacist, etc. [(4)] However these regulations are poorly implemented.[(5)] In this context we decided to explore the prevailing Knowledge, Attitude and Practice (KAP) of pharmacists towards the newly implemented regulations and the potential for improvement following a CPE.

Methodology

We conducted a cross sectional survey in selected areas of 3 districts of northern Kerala for duration of 10 months. The survey included registered pharmacists who were granted

pharmacist license by Kerala pharmacy council. Pharmacists working as assistants with no degree were not included in the survey. The study design was approved by college Institutional Ethics Committee, National College of pharmacy, Mukkam, Kerala. The study participants were selected based on inclusion and exclusion criteria. Only registered pharmacists of Malappuram, Kozhikode and Trissur who consented to participate were included in the study.

Questionnaire: The survey was done using an expert validated community pharmacy survey questionnaire for this study. The questionnaire included 5 questions for assessing knowledge, 4 questions for attitude and 23 questions for assessing practice. The minimum score given for an answer was 0 and maximum was 4. Some questions have 2 sub questions for more detailed data collection. Prospective data collection was made by direct interview of the practicing pharmacists and entering the data directly in the data entry form.

Data were collected using a well-designed data entry form. The existing KAP scores were captured in the baseline survey, over the period of the first four months. The baseline data were captured on the basis of responses from the participants. This was followed by a brief presentation on the community pharmacists' obligations to a patient under PPR 2015.

Statistics: Data were entered using Epi data version 3.1, and was analyzed by using Statistical Package for Social Science version 16 (SPSS 16). Descriptive statistics were used to summarize demographic details, given as mean ± SD for continuous data or as percentage for frequency. T-test was used to compare the means of qualitative and quantitative variables such as knowledge, attitude and practice scores.

Results

We categorized the registered pharmacists from three districts of northern Kerala (Kozhikode, Thrissur and Malappuram) according to age, gender, educational qualification and years of experience. A total of 450 pharmacists were approached and screened based on registration under Kerala state pharmacy council. The age and gender distribution in each district are shown in Fig.1 and Fig.2 respectively.

Table No 1 shows categorization of study population based on educational qualification. Diploma graduates (76%) were more in Kozhikode than graduates (23%) and post graduates (2%). There was only 1 Pharm D in the whole of Malappuram district. D Pharm graduates 91(60.7%) are higher when compared to other educational qualification like 57 (38%) B Pharm graduates, and 2 (1.3%) M Pharm graduates in Trissur district. There were no Pharm D community pharmacists surveyed in Trissur and Kozhikode district.

Knowledge: Fig.3 shows pharmacist's knowledge based on PPR2015. Baseline and follow up values were 4.5 and 4.8 ($P< 0.0001$) respectively in Kozhikode whereas 4.90 and 4.92($P< 0.0001$) respectively in Malappuram. Base line and follow up value were 4.6 and 4.9 ($P< 0.0001$) respectively in Thrissur. The knowledge among Kozhikode and Thrissur district was significantly incremented by the survey were the more qualified pharmacist were surveyed (B Pharm more than D Pharm). However, D Pharm pharmacists seem to have more knowledge in the baseline survey and slight increment in the follow up.

Attitude: Fig. 4 shows the pharmacist's attitude based on PPR 2015. In Kozhikode district, baseline and follow up values were found to be 4.9 and 5.0 ($P<0.0001$) respectively. In

Malappuram district, baseline and follow up values were 4.3 and 5.0 (P< 0.0001) respectively and 4.3 and 5.0 (P< 0.0001) respectively in Thrissur. Attitude improvement was the most consistent parameter affected among the various components surveyed in all.

Table No. 1. Categorization based on educational qualification

Educational Qualification	Kozhikode Frequency (%)	Malappuram Frequency (%)	Trissur Frequency (%)
D-Pharm	112 (75%)	114 (76%)	91 (61%)
B- Pharm	35 (23%)	33 (22%)	57 (38%)
M-Pharm	3 (2%)	2 (1.3%)	2 (1%)
Pharm – D	0 (0%)	1 (0.7%)	0 0%)

Fig. 1: Age distribution in three districts

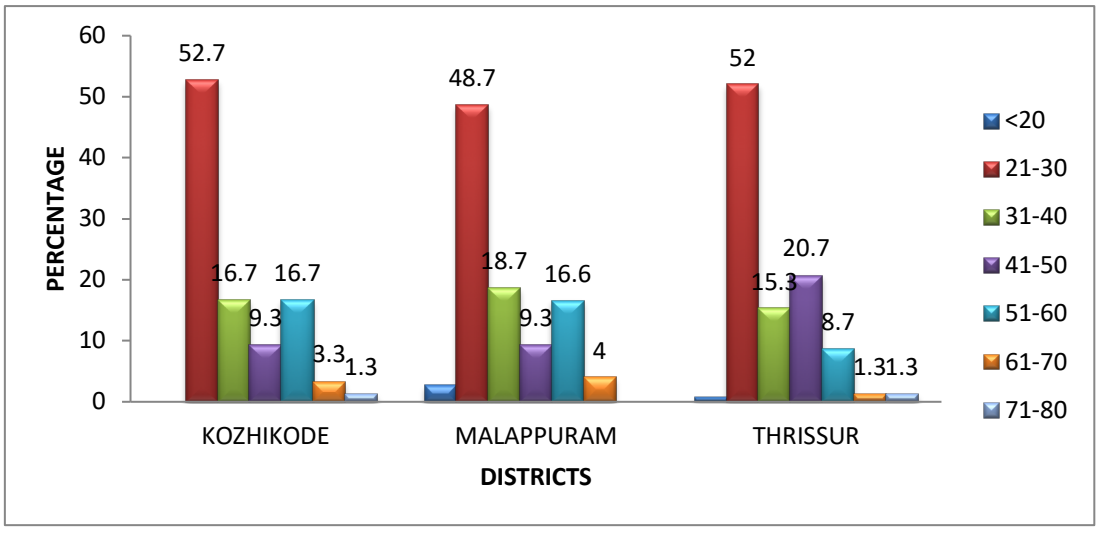


Fig .2 Gender distribution in three districts

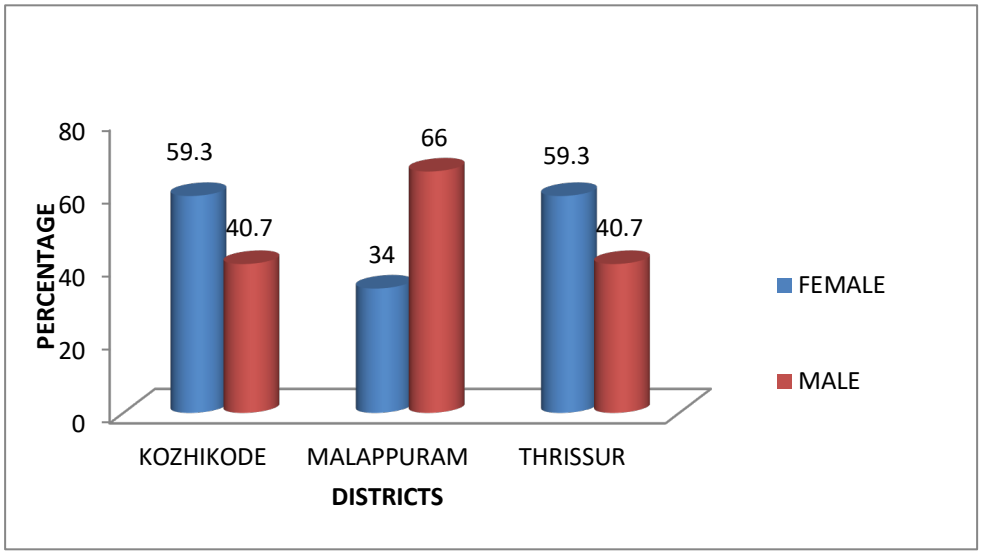


Fig. 3: Pharmacists knowledge based on community pharmacy survey questionnaire

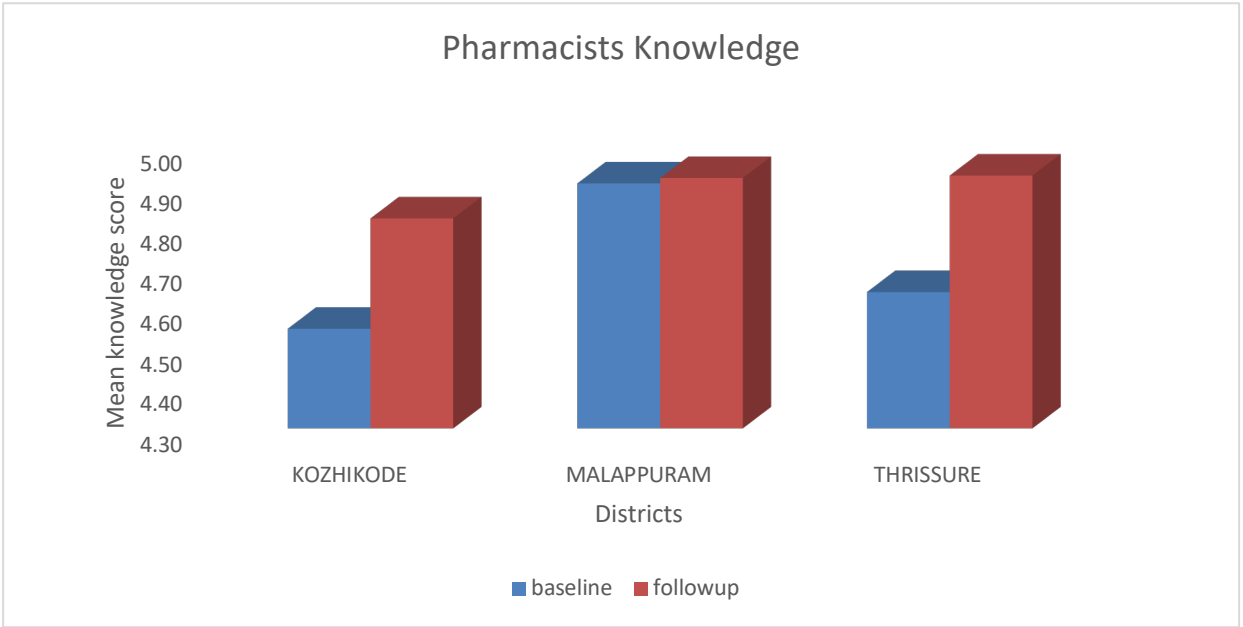


Fig. 4: Pharmacists Attitude based on community pharmacy survey questionnaire

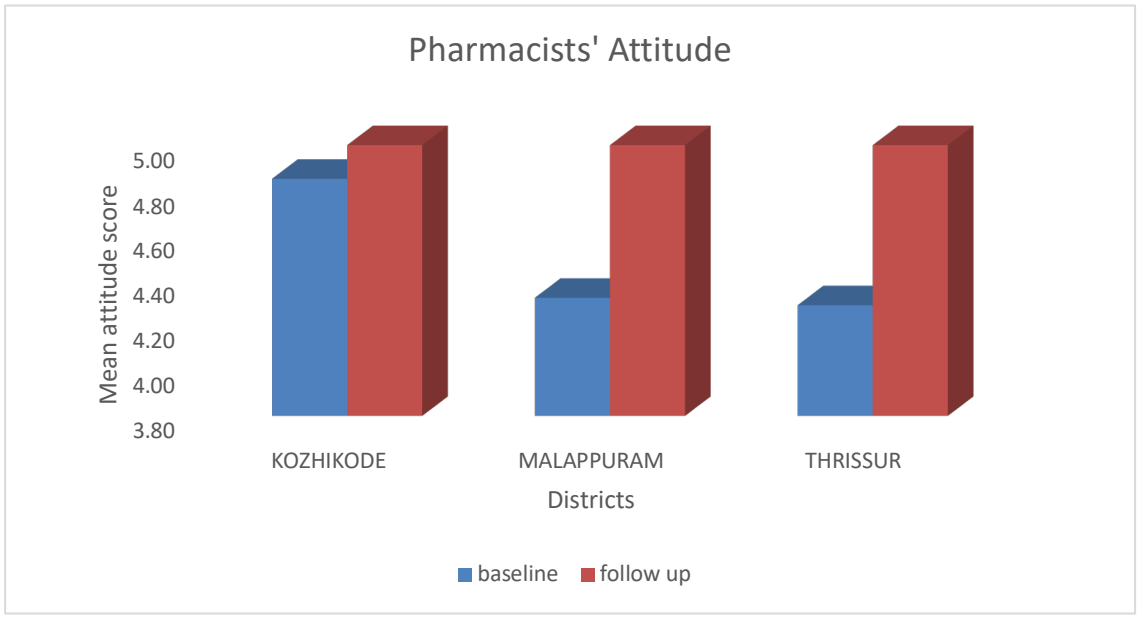
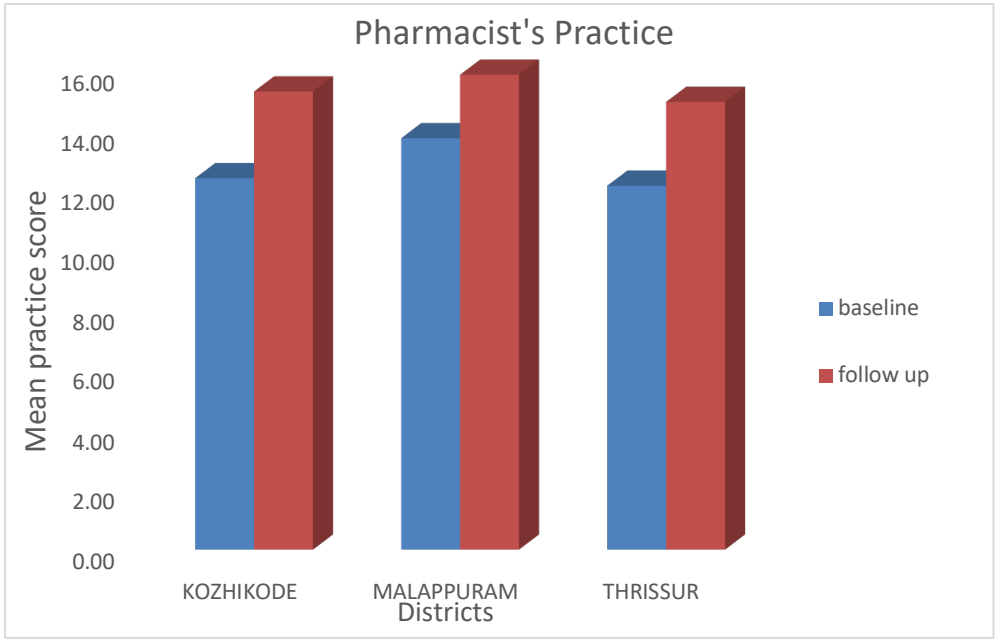


Fig. 5: Pharmacists practice based on community pharmacy survey questionnaire



The three districts showed marked response with similar values, but Kozhikode district had a higher baseline value than the others where more experienced pharmacists were surveyed.

Practice: Fig. 5 showing the pharmacist's Practice based on pharmacy practice regulation 2015. In Kozhikode district baseline and follow up value were 12.4 and 15.3 ($P< 0.0001$) respectively. 13.7 and 15.9 ($P< 0.0001$) respectively were the baseline and follow up value in Malappuram whereas 12.1 and 14.9 ($P< 0.0001$) respectively in Thrissur. Increment in practice was similar among all the three districts in both follow up and baseline surveys done.

Discussion

This study surveyed the KAP among community pharmacists before and after a brief educational intervention about the scope and possibilities of PPR 2015. In this study, most community pharmacists possess D Pharm as the educational qualification in all three districts. This is similar to a previous report by *Basak SC et al.* [2] Upgrading educational level to B Pharm, M Pharm and Pharm D can substantially improve the quality of the services and regulatory enforcement. This is evident because the knowledge among Kozhikode and Thrissur district, which has a greater proportion of pharmacists with a higher degree, showed significantly better improvement during follow up after the presentation on PPR 2015. Graduates and Post graduates are more willing to learn and change their behavior. Hence the survey probably suggests that qualification is a key element for improvement.

The data on knowledge and attitude contrasts heavily with data on practice. This is probably because today's community pharmacists are sensing a threat from future competitors with patient-oriented qualifications. The sense of insecurity was possibly a reason for the inconsistent responses regarding K, A and P. The study showed higher baseline and follow up scores in practice in all three districts. This is the only parameter with consistent results across all districts. The main reason that led to the perfect score is possibly response bias on the part of pharmacists. The urge to appear as a law abiding and knowledgeable healthcare professional probably invoked such a response. The unanimity in their responses regarding questions on practice is probably a sham to suggest that they are discharging their duties efficiently. The PPR 2015 might have also created a stir among the community pharmacists of Kerala. The rising perception of popularity and importance of Pharm D is probably creating a sense of insecurity among the community pharmacists with only the minimum qualification of D Pharm. Kerala being a highly literate state and the people being politically aware of the changing provisions, consumer sentiments probably demand more patient-oriented services, which the community pharmacists have seemingly failed to provide. Added to this sense of underperformance, high levels of trust enjoyed by the doctors and other healthcare professionals, who have greater patient contact than pharmacists, seem to be aggravating the sense of inadequacy among pharmacists in general. The widespread preference for the 'right' answers in the questionnaire was possibly a result of such insecurity prevailing in the times of change brought in by PPR2015. Added to this is lack of interest in educational interventions and their unjustified fear of negative impact on the profession. Long working hours, lack of time, inadequate training in specific skills, poor access to information, lack of economic incentives for good practices and lack of support/ interaction from other health

professionals, are likely to be the major factors that impede the implementation of pharmaceutical care.

Kerala is clearly on top of the healthcare pyramid, with the maximum health care resources such as patient beds per population, doctors and nurses per capita etc. Despite many such advances, the contribution from community pharmacists remains inadequate to meet the needs of patient centered healthcare.

Conclusion

Generally, community pharmacists in India are hardly obliged to offer any patient-oriented services such as counseling, drug information, managing chronic drug intake, providing flu vaccinations, sexual health services, medical aid usages, drug- drug interaction checking, management of food intake etc. by the patients. To increase the KAP of the pharmacists regarding PPR2015, it is necessary to conduct more continuing education programs with more frequent feedback sessions. The current study possibly recorded biased opinions which might be due to lack of a simplified and more specific questionnaire. In retrospect, it appears that the questionnaire employed was not adequately equipped to record the current reality. We therefore failed to recognize any predictable pattern in the results. This is possibly because of the urge to appear duty bound, honest and law abiding in the context of the rising trend in patient-oriented services through courses like Pharm D. This has led to a fear of being replaced, despite the years of experience in community pharmacies. To conclude, the current healthcare setting anticipates the pharmacists to interact with doctors, nurses and other professionals in educating the patients in collaborative care model. The drive of pharmacy practice in developed countries has shifted from product-centered to patient-centered services with modified drug laws favoring patient safety. However, in countries like India, pharmacy practice is yet to receive the status and acceptance.

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