

A questionnaire Based Study involving health care stakeholders to assess the competence and skills of a professional pharmacist

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Original Research Article

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Article History

Received: 10.06.2018

Accepted: 13.06.2018

Published: 30.06.2018

DOI:

10.21276/sajp.2018.7.6.1



Abstract: A pharmacist is a professional who is dispensed medicine, counsel patient and advice health care stakeholders on the rational use of medicines. However, there are only few who approach him for counsel or advice. This could be due to ignorance or doubts in the mind of the people about the professional competencies, knowledge and skills of the pharmacists. The study is therefore an attempt to determine the awareness about pharmacy profession amongst stakeholders. A questionnaire was developed on four parameters which broadly covers the spectrum of clinical pharmacy services which a pharmacist is expected to render namely: utilization or underutilization of drug in the prescription, therapeutic duplication in the prescription, incorrect drug dosage, and drug-drug interactions. An evaluation of the responses of nurses, clinicians, pharmacist, patient and public were analysed. The results indicate that nurses, clinicians, patient and public did not agree that a pharmacist could perform the above tasks. The strongest disagreement was from the clinicians on all aspects. A comparison in between categories reveals that nurse has lower knowledge and perception as compared to clinician, public and patient.

Keywords: Pharmacy Profession, Therapeutic duplication, Drug utilization, Healthcare professional.

INTRODUCTION

Pharmacists comprise the third largest healthcare professionals in the world. The pharmacy profession is evolving steadily with the pharmacist having to take on himself greater responsibility towards improving patient care. In India the pharmacy profession is not much developed [1]. Pharmacists are regarded as medication experts who are responsible for achieving desirable medication treatment outcome in a cost effective and a safe manner [2-4]. They are responsible for advising the medical professionals on proper dose, availability, side effects and for monitoring treatment outcomes. Pharmacists are a bridge between doctors and patients who counsels and helps to promote rational use of medicines. They educate the patient on use of medication and warn of possible interaction with food, herbal remedies and over the counter drugs.

While the above duties are consider normal for the pharmacist to perform in the west, the scenario in India is still in the development stage. The situation is further confounded by the general observation that other health care workers are unaware of the training,

competence and skills of the pharmacist to conduct task assign to him by virtue of his profession. Therefore this study is planned to gather information from various stakeholders on some aspects of the professional competence, training and subject knowledge of the pharmacist.

This study is important as it could help to device educational and professional practice intervention aimed at improving the status and competence of pharmacist.

MATERIALS AND METHODS

This study has been planned to check the awareness among clinician, pharmacist, nurse, public and patient on competence and skills of a professional Pharmacist. For this a questionnaire was designed covering some aspects of the work responsibility of pharmacist. The consent of clinician, pharmacist, nurse, public and patient was obtained. Thereafter all the subjects were requested to complete the questionnaire.

All stakeholders were randomly approached to fill up the questionnaire. For the validation the questionnaire was sent to faculty of pharmacy, medical and nursing colleges in Jaipur as well as patient and public and was asked to give their opinion on the questions with respect to their profession, relevance and language. The questionnaire was modified on the basis of their response. A final questionnaire was thus designed for all the stakeholders in the vernacular language (Hindi) and English. The finalized questionnaire was then provided to various stakeholder (clinician, pharmacist, nurse, public and patient) on a random basis. Questionnaire included a set of statements in which the respondents were asked to indicate their level of agreement on a 5 point Likert scale.

The responses of each group was computed, categorized and subjected to statistical analyzed by chi square test. The study protocol was approved by the institutional research ethics committee. This study was done for the period of 1 year from October 2016 to October 2017 in a state capital in India.

RESULTS AND DISCUSSION

Above 92% (514) stakeholders out of 558, to whom the questionnaire was given, participated in the study. These comprise of Nurses (100), Clinician (103), Pharmacist (102,) Patient (103), Public (106). The parameters on which the responses were elicited are

- Pharmacist can review Over utilization or under utilization of Drug in the prescription
- Pharmacist can review Therapeutic duplication in the prescription
- Pharmacist can review drug-drug interactions in the prescription
- Pharmacist can review Incorrect drug dosage in the prescription

The stakeholder were requested to categorized their response as Don't know, Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree. Results are presented as Table 1, Table 2, Table 3 and Table 4 respectively. Tables 1 to 4 indicate the level of agreement of patient /public/nurse/pharmacist and clinician on the above parameters. Table 1 shows that public (12.5%, n=64) and pharmacist agreed that pharmacist can review over or under utilization of drug in the prescription whereas patients, nurses and clinicians were in disagreement. Table 2 shows that patient (8.9%, n=46), nurse and pharmacist agreed that pharmacist can review therapeutic duplication in the prescription whereas clinician and public disagreed with the statement. Table 3 demonstrates that patient and pharmacist agreed that pharmacist can review drug-drug interaction but nurse, clinician and public disagreed, at the same time many nurses reported that they did not know much about this aspect of pharmacist working (6.6%, n=34). It was found in table 4 that only pharmacist agreed towards the statement that

he is competent in all the parameters (8.0%, n=41) and can review incorrect drug dosage in the prescription whereas clinician, public and patient disagreed and many nurses reported disagreement as well as don't know for this aspect of pharmacist working (Table 4). Table 1 to 4 shows a significant association ($p < 0.05$) between the above statements and subject categories.

It was not surprising that only pharmacist agreed that he is competent in all the above parameters. However clinicians disagreed that a pharmacist was competent in all aspects. Whereas Nurses agreed only on one aspect that pharmacist can review therapeutic duplication in the prescription. Surprisingly despite being the important health workers nurses (22% to 34%) were ignorant of the professional competence of the pharmacist. A surprising aspect of this study is that few pharmacists (21 % to 38 %) did not consider themselves competent for some aspects of this study. This suggests serious lack of education, training and practical exposure to the pharmacist. Above study provides useful insights on how the various stakeholders look to pharmacist as a professional to conduct the task on which the responses were obtained. This suggests that there is lack of coordination between healthcare workers. It is imperative that adequate exposure of the professional competence of healthcare workers be provided in the curriculum of nurses, pharmacist and clinicians. The pharmacist has also to demonstrate its abilities, knowledge and skills to other health workers. Providing medical care is cannot be seen in isolation as a responsibility of doctors and the nurses. The other health care team should work in coordinated manner to improve health outcome. This can be only possible if there is knowledge and confidence of each towards the other person knowledge, confidence and skills. Hence in the light of this study suitable interventions should be design to improve patient outcome.

Few researchers from different countries have also studied public and healthcare stakeholder's regarding pharmacist's roles and responsibilities. In a study conducted in Pakistan it was observed that while the patient was aware of community pharmacy as a profession they were unaware of the services that a pharmacist could provide [5]. A study done in Macau shows discrepancies of physician and pharmacist in experience and expectation of the roles of pharmacist in hospital setting for the development of physician-pharmacist collaborative working relationship (CWR) [6]. In a study conducted in Qatar it was reveal while the physician considered pharmacist expert in drug therapy as educator of rational use of drug. Similar observations are also made in a study conducted Kuwait and south west Ethiopia [2-4].

In a pilot study, El Haji *et al.* found that the public was aware of the different roles and responsibilities of the community pharmacist, with the

exception of two pharmaceutical care key elements: monitoring patient drug therapy and performing health

screening [8]. Similar observations are also made in a study conducted on general public in Pakistan [9].

Table-1: Pharmacist can review over utilization or underutilization of Drug in the prescription

Subject Category		Don't know	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Nurse	Count	22	31	23	9	14	1	100
	% of total	4.3%	6.0%	4.5%	1.8%	2.7%	0.2%	19.5%
Pharmacist	Count	0	9	12	2	55	24	102
	% of total	0.0%	1.8%	2.3%	0.4%	10.7%	4.7%	19.8%
Clinician	Count	0	40	31	14	17	1	103
	% of total	0.0%	7.8%	6.0%	2.7%	3.3%	0.2%	20.0%
Patient	Count	2	25	30	4	38	4	103
	% of total	0.4%	4.9%	5.8%	0.8%	7.4%	.8%	20.0%
Public	Count	14	1	26	1	64	0	106
	% of total	2.7%	0.2%	5.1%	0.2%	12.5%	.0%	20.6%
Total	Count	38	106	122	30	188	30	514
	% of total	7.4%	20.6%	23.7%	5.8%	36.6%	5.8%	100.0%
Chi-Square Test								
Pearson chi-Square		value	df		Asymp.Sig.(2-sided)			
		251.293 ^a	20		0.000			

Table-2: Pharmacist can review Therapeutic duplication in the prescription

Subject Category		Don't know	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Nurse	Count	22	13	21	6	31	7	100
	% of total	4.3%	2.5%	4.1%	1.2%	6.0%	1.4%	19.5%
Pharmacist	Count	0	8	28	3	42	21	102
	% of total	0.0%	1.6%	5.4%	0.6%	8.2%	4.1%	19.8%
Clinician	Count	0	37	30	15	19	2	103
	% of total	0.0%	7.2%	5.8%	2.9%	3.7%	0.4%	20.0%
Patient	Count	0	16	22	8	46	11	103
	% of total	.0%	3.1%	4.3%	1.6%	8.9%	2.1%	20.0%
Public	Count	9	37	24	3	12	21	106
	% of total	1.8%	7.2%	4.7%	.6%	2.3%	4.1%	20.6%
Total	Count	31	111	125	35	150	62	514
	% of total	6.0%	21.6%	24.3%	6.8%	29.2%	12.1%	100.0%
Chi-Square Test								
Pearson chi-Square		value	df		Asymp.Sig.(2-sided)			
		162.595 ^a	20		0.000			

Table-3: Pharmacist can review drug-drug interactions in the prescription

Subject Category		Don't know	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Nurse	Count	33	24	19	16	8	0	100
	% of total	6.4%	4.7%	3.7%	3.1%	1.6%	0.0%	19.5%
Pharmacist	Count	0	13	15	2	45	27	102
	% of total	0.0%	2.5%	2.9%	0.4%	8.8%	5.3%	19.8%
Clinician	Count	0	44	36	5	14	4	103
	% of total	0.0%	8.6%	7.0%	1.0%	2.7%	0.8%	20.0%
Patient	Count	19	10	24	11	30	9	103
	% of total	3.7%	1.9%	4.7%	2.1%	5.8%	1.8%	20.0%
Public	Count	11	39	21	4	11	20	106
	% of total	2.1%	7.6%	4.1%	.8%	2.1%	3.9%	20.6%
Total	Count	63	130	115	38	108	60	514
	% of total	12.3%	25.3%	22.4%	7.4%	21.0%	11.7%	100.0%
Chi-Square Test								
Pearson chi-Square		value	df		Asymp.Sig.(2-sided)			
		214.395 ^a	20		0.000			

Table-4: Pharmacist can review incorrect drug dosage in the prescription

Subject Category		Don't know	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Nurse	Count	34	19	24	17	6	0	100
	% of total	6.6%	3.7%	4.7%	3.3%	1.2%	0.0%	19.5%
Pharmacist	Count	0	8	30	0	41	23	102
	% of total	0.0%	1.6%	5.8%	0.0%	8.0%	4.5%	19.8%
Clinician	Count	0	40	37	10	13	3	103
	% of total	0.0%	7.8%	7.2%	1.9%	2.5%	0.6%	20.0%
Patient	Count	23	10	26	11	27	6	103
	% of total	4.5%	1.9%	5.1%	2.1%	5.3%	1.2%	20.0%
Public	Count	11	39	20	2	13	21	106
	% of total	2.1%	7.6%	3.9%	.4%	2.5%	4.1%	20.6%
Total	Count	68	116	137	40	100	53	514
	% of total	13.2%	22.6%	26.7%	7.8%	19.5%	10.3%	100.0%
Chi-Square Test								
Pearson chi-Square		value		df		Asymp.Sig.(2-sided)		
		219.326 ^a		20		0.000		

CONCLUSION

The responses of different stakeholders reveal that they had differing views on the abilities and expertise of the pharmacist. Many were not aware of the skills and expertise of the pharmacists. Since the pharmacist is one of the integral components of healthcare team and considered as a drug specialist (at least in the west). It is integral as to why attempts have not been made to utilize his knowledge, skills and expertise to improve health care delivery. It is suggested that interventions may be devised and given to all healthcare stakeholders regarding their professional skills, knowledge, abilities and capabilities so that these professionals can work in a coordinated manner to improve patient care. Likewise public and patient should also be aware of the benefits and advice they can receive from their services.

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