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KNOWLEDGE, ATTITUDE AND PERCEPTION OF HEALTH CARE PROVIDERS (HCPS) AT INTERNAL MEDICINE WARD OF A TERTIARY CARE HOSPITAL TOWARDS PHARMACEUTICAL CARE

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ABSTRACT: Introduction: Pharmaceutical care entails the work of addressing patient's medication related needs and problems. The involvement of the pharmacist in India in this regard has been somewhat restricted, contrary to trends in developed countries. **Materials and methods:** Questionnaire-based explorative, semi-quantitative study involving Doctors, Pharmacists and Nurses of the study department in the following sequence; Design of questionnaire, Pre-testing/validation, Administration, Collection, Evaluation & Interpretation. **Results:** Out of total 90 questionnaires distributed among health care providers the response rate was measured as 63.3% and less than 40% of the Health Care Providers could answer correctly to the first section of questionnaire intended to assess the knowledge regarding pharmaceutical care. In the perception part 73.3% of doctors agreed and 20% strongly agreed that pharmaceutical services provided by clinical pharmacist can improve the quality of patient care in hospital settings. 66.6% agreed and 26.6% strongly agreed that clinical pharmacist as a part of medical team will minimize medication errors. 73.3% agreed and 20% disagreed that doctors can allow pharmacists to be available with them during ward rounds. In third section of the questionnaire which was for assessment of attitude in doctors 65% of doctors agreed and 20% disagreed that pharmacists are reliable source of drug information, pharmacists can inform doctors if patient has experienced some problems with his medications. **Conclusion:** The findings of the present study conclude that, clinical pharmacy and pharmaceutical care is still in its infancy as there is lack of knowledge and awareness among health care providers towards pharmaceutical care.

INTRODUCTION: Pharmaceutical care entails the work of addressing a patient's medication related needs. The involvement of a clinical pharmacist in India in this regard has been sparse and restricted, contrary to the trends in developed countries. Within the team of healthcare professionals, trained clinical pharmacists would have the suitable knowledge and adequate skills to prevent, detect, monitor, and resolve medicine related problems.

As the public demands more information on medicines and their effects, to make more informed decisions, pharmacists will have to take on a more pro-active role in patient counseling.¹

Hepler and Strand² defined Pharmaceutical care in 1990 as the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life. Pharmaceutical Care involves four major functions by a pharmacy practitioner on behalf of the patient viz., identifying potential and actual drug-related problems; addressing needs and resolving actual drug related problems; preventing potential drug-related problems and optimizing patient therapy outcomes. Of late Cipolle and his colleagues³ have redefined Pharmaceutical Care as "a practice in which the

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pharmacy practitioner takes responsibility for a patient's drug-related needs and is held accountable for this commitment". Most of the pharmacy related organizations in developed countries e.g., the American Pharmaceutical Association (AphA) ⁴ and the American Society of Health-System Pharmacists ⁵ have since adopted the pharmaceutical care philosophy.

More recently, in the year 2009, International Pharmaceutical Federation (FIP) published good pharmacy practice guidelines in association with World Health Organization ⁶ and defined Pharmaceutical Care as, "the responsible provision of pharmacotherapy for the purpose of achieving definite outcomes that improve or maintain a patient's quality of life. Pharmaceutical Care management is a modern approach towards providing seamless and integrated health care through collaboration with pharmacy practitioners. Pharmaceutical care became one of the minimum requirements of practice outlined in policy and professional document ⁷. Collaboration among the various healthcare professionals with their respective expertise can lead to significant improvement in patient care. ⁸

Methods: The study was conducted over a period of 3 months. Research instrument used in this study consisted of a pre-tested ⁹ survey questionnaire, designed on the basis of healthcare setting, feasibility and literature review. ^{10, 11, 12, 13} It was an explorative, semi-quantitative study involving doctors, pharmacists and nurses of the study unit to assess their knowledge, perception and attitudes towards pharmaceutical care services and was carried out in the following sequence:

- Design of questionnaire
- Pre-testing/validation of questionnaire
- Distribution of questionnaire
- Collection of feedback
- Evaluation of data
- Interpretation of data

A **pre-tested, self-administered:** questionnaire was designed to have three parts – first part containing 13 questions, second part having 17 statements and third part with 8 statements. It included various aspects regarding history of pharmaceutical care, services of pharmaceutical care, requirements of

pharmaceutical care, need of clinical pharmacist, services provided by clinical pharmacist etc.

First part of the questionnaire had multiple choice response options and was distributed among doctors, nurses and pharmacists with an intention to assess their knowledge towards pharmaceutical care. Second and third part of the questionnaire was distributed only among doctors with an intention to assess their perception and attitude towards pharmaceutical care services and had four close ended response options of: strongly agree, agree, disagree and strongly disagree.

Elements of questionnaire were selected on the basis of literature review and outcome measures. Its pre-testing/validation was done by seeking feedback from working pharmacists and pharmacy students on its clarity, comprehensibility, lucidity and un-ambiguity. Main outcome measures of the study viz., knowledge, attitude and perception were assessed by the degree of interest in, agreement to and expectations from the pharmaceutical care services.

RESULTS: A total of 90 healthcare providers including doctors, nurses and pharmacists from the study unit were included in the study, out of whom 73 (81.1%) were males and 17(18.8%) were females. Majority of the participants 47(52.22%) were doctors, followed by pharmacists 28 (31.11%) and nurses 15 (16.66%). Among doctors who participated in this study, 34 (72.34%) were post-graduate interns, 9 (19.14%) were MD and 1 (2.12%) MBBS qualified doctors. Among nurses who participated in this study 8 (53.33 %) were possessing diploma in nursing, 4 (26.66%) were bachelor's degree holders and 2 (13.33 %) were nursing students. Among 28 pharmacists included in the study, 4 (14.28 %) participants were possessing D. Pharm., 6 (21.42%) were B. Pharm. and 2 (7.14 %) participants were possessing M. Pharm. Rest of the 16 (57.14 %) participants working as pharmacists at the study hospital were not possessing any diploma or degree in pharmacy as shown in **Table 1**.

Fig. 1 shows that out of 90 questionnaires that were distributed among doctors, pharmacists and nurses of the study unit, 30 (63.8%) doctors, 18 (64.2 %) pharmacists and 9 (60%) nurses returned back duly

filled questionnaires. Among these respondents 38.8% of doctors 24.3% of nurses and 32.8% of pharmacists answered correctly to the first section of the questionnaire intended to assess the knowledge regarding pharmaceutical care. The responses of doctors, nurses and pharmacists to

various questions asked in the first section of the questionnaire is shown in **Table 2**, whereas their responses to questions pertaining to the perception and attitude sections are shown in **Table 3** and **Fig. 2**.

TABLE 1: RESPONDENT DEMOGRAPHICS

Category	Study Group Demographics						Respondents
	MBBS	MD	PG Students	Others	Total		
Doctors	Male	01	24	17	03	45	28
	Female	0	02	0	0	02	02
	Total	01	26	17	03	47	30
Nurses	Diploma (Nursing)	Bsc (Nursing)	Nursing Students	Others			
	Male	01	01	0	01	03	02
	Female	07	03	02	0	12	07
	Total	08	04	02	01	15	09
Pharmacists	D. Pharm	B.Pharm	M.Pharm	Others			
	Male	03	05	01	16	25	15
	Female	01	01	01	0	03	03
	Total	04	06	02	16	28	18
					90	57	
					(100%)	(63.3%)	

TABLE 2: KNOWLEDGE OF HCPs REGARDING PHARMACEUTICAL CARE (PERCENTAGE OF CORRECT ANSWERS SHOWN)

S.no		Doctors (n=30)	Nurses (n=9)	Pharmacists (n=18)
1.	Pharmaceutical Care is mainly concerned with achieving drug therapy outcomes to improve a patient's quality of life	14 (46.0%)	3 (33.3%)	10 (55.5%)
2.	Main focus of attention of the Pharmaceutical Care is The patient	14 (46.6%)	7 (77.7%)	9 (50.0%)
3.	Pharmacy practitioner is mainly responsible for providing Pharmaceutical Care Services to patients	12 (40.0%)	1 (11.1%)	10 (55.5%)
4.	Pharmaceutical Care does not Allow pharmacists to prescribe drugs	19 (63.3%)	3 (33.3%)	5 (27.7%)
5.	A pharmaceutical care practitioner can assist A physician in identifying drug related problems	15 (50.0%)	1 (11.1%)	11 (61.1%)
6.	Clinical Pharmacistis concerned with providing pharmaceutical care services to patients in a hospital	11 (36.6)	6 (66.6%)	4 (22.2%)
7.	Pharmaceutical Care does not include Prescribing of drugs to patients	16 (53.3%)	3 (33.3%)	6 (33.3%)
8.	Pharmaceutical Care Service does not Curtail authority of physicians in drug therapy decisions	19 (63.3%)	5 (55.5%)	8 (44.4%)
9.	Pharmaceutical Care Accords additional responsibility to pharmacists on drug therapy	8 (26.6%)	2 (22.2%)	5 (27.7%)
10.	Pharmaceutical Care Emerged globally in Nineties	11 (36.6%)	3 (33.3%)	4 (22.2%)
11.	PC Practitioner should also have knowledge dispensing and distribution of drugs in wards	10 (33.3%)	0 (0)	3 (16.6%)
12.	Pharmaceutical care can be applied in all types of patients and all types of diseases	7 (23.3%)	4 (44.4%)	6 (33.3%)
13.	The Pharmaceutical Care process is used to provide direct care to patients	7 (23.3%)	4 (44.4%)	4 (22.2%)

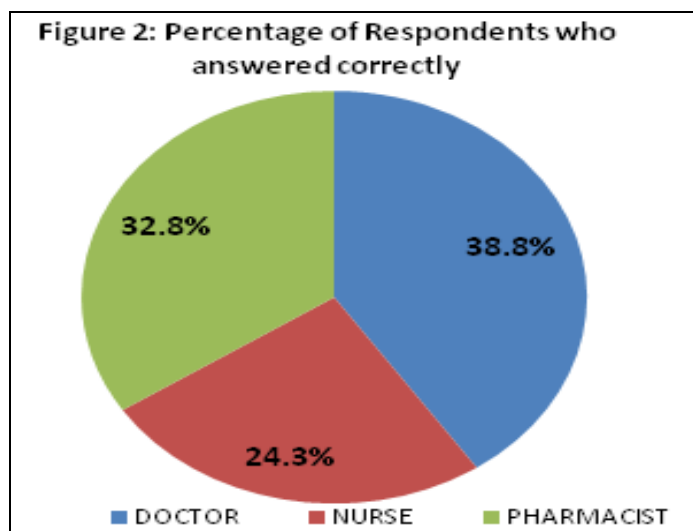


FIG. 1: PERCENTAGE OF HEALTH CARE PROVIDERS WHO ANSWERED CORRECTLY IN KNOWLEDGE SECTION.

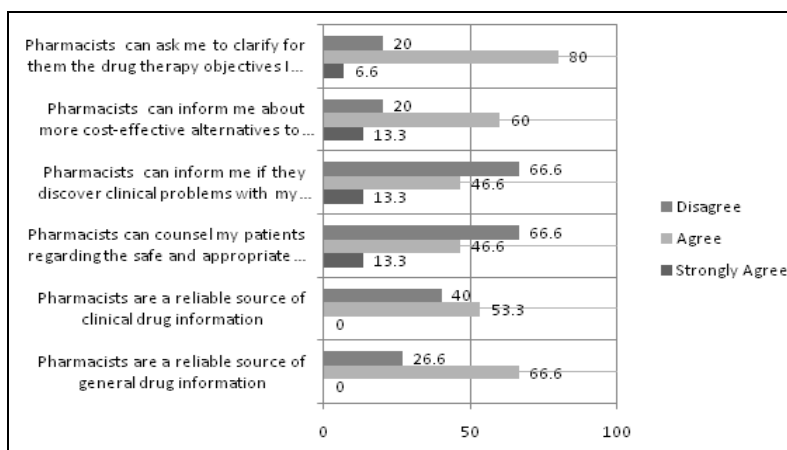


FIG. 2: ATTITUDE OF DOCTORS TOWARDS PHARMACEUTICAL CARE. (N=30)

TABLE 3: PERCEPTION OF DOCTORS TOWARDS PHARMACEUTICAL CARE (N=30)

S. No	Service Name	Strongly agree %	Agree %	Disagree %
1.	The clinical pharmacist is an important and integral part of the medical team	20.0	73.3	6.6
2.	The clinical pharmacist can improve the quality of patient care in a hospital setting	20.0	73.3	6.6
3.	The clinical pharmacist can perform patient counseling	13.3	80.0	6.6
4.	Clinical pharmacists as part of medical team will improve patient therapeutic outcomes	26.6	66.6	6.6
5.	Clinical pharmacists as part of medical teams will minimize medication errors	20.0	73.3	6.6
6.	Doctors and other healthcare staff will accept the involvement of clinical pharmacists in drug and disease management of patients	20.0	33.3	46.6
7.	There is increasing interest in clinical pharmacy as a profession in India	13.3	60.0	26.6
8.	Clinical pharmacy representation in clinical ward rounds is desirable	06.6	53.3	40.0
9.	The clinical pharmacist has a role in patient education and counseling	20.0	20.0	60.0
10.	Clinical Pharmacists can take personal responsibility for resolving any drug-related problems they discover involving patients	13.3	53.3	33.3
11.	Clinical Pharmacists are knowledgeable drug therapy experts	13.3	60.0	26.6

12.	Clinical Pharmacists can assist in designing drug therapy treatment plans for my patients	0.0	73.3	26.6
13.	Clinical Pharmacists can educate my patients about the safe and appropriate use of drugs	20.0	66.6	13.3
14.	Clinical Pharmacists can monitor my patients' response to drug therapy and let me know if a patient encounters any drug-related problem	06.6	73.3	20.0
15.	I expect pharmacists to know the specific indication of each drug I prescribe.	16.0	50.0	33.3
16.	I can allow pharmacists to be available to me for consultation when I see patients	6.6	73.3	20.0
17	Pharmacists can assist my patients in selecting appropriate non-prescription medications	0.0	66.6	33.3

DISCUSSION: Pharmacy practice in developing countries varies significantly from one country to another and within India too it varies drastically from one state to the other. Clinical Pharmacy Practice is still in its infancy in the Indian state of Jammu and Kashmir with some professional activities being undertaken by the present research group in the local hospitals of the state. Clinical Pharmacy as such is neither practiced in the govt. sector nor in the private sector of the state either in part or in full. Therefore this study was undertaken with a view to assess the knowledge, attitude and perceptions of healthcare workers towards pharmaceutical care and clinical pharmacy services so that policy makers could accordingly address the lacunae and devise policies in tune with local needs. Present study was the first of its kind in the state of Jammu and Kashmir. Our study revealed that there was general lack of knowledge among health care workers regarding the concept of pharmaceutical care and the services offered by clinical pharmacists since less than 40% of doctors, nurses and pharmacists could correctly answer questions related to the same.

However general perception of doctors regarding pharmaceutical care services was found to be quite favorable as more than 60% of doctors agreed that pharmaceutical care services provided by clinical pharmacists can improve the quality of patient care in hospital settings, can minimize medication errors, can educate patients about their safe and appropriate medication use, can monitor patients' response to drug therapy and therefore can allow pharmacists to be available with them during ward rounds. However 30.0% of doctors disagreed that doctors and other healthcare workers will accept the involvement of clinical pharmacists in drug and disease management of patients, that clinical

pharmacists can take personal responsibility for resolving any drug-related problems they discover in patients and that the clinical pharmacists can assist patients in selecting appropriate non-prescription medications.

The possible reasons which could be attributed to reluctance of healthcare providers towards acceptance of pharmaceutical care services and clinical pharmacists as an integral part of healthcare system is the limited role and involvement of pharmacists and the communication gap between pharmacists and other healthcare providers in local healthcare settings. Several published studies have reported the existence of a communication gap between pharmacists and doctors, including the factors responsible.^{14, 15} In these studies, physicians were reported to be receptive to pharmacists providing several clinical services. Acceptance of pharmacists providing these services is dependent on physicians' perception of pharmacist's competence¹⁶ Medical practitioners expect pharmacists to perform patient counseling, but the latter are not performing this service optimally.¹⁷ The most common complaints of medical practitioners against pharmacists in this regard were provision of inappropriate drug information, dispensing of unauthorized refills, and making inappropriate statements to patients.¹⁸

The philosophy of pharmaceutical care is now accepted worldwide as a primary mission of pharmacy.¹⁹ The concept of pharmaceutical care can only be achieved if pharmacists and doctors agree on each other's role, as different perceptions by pharmacists and doctors regarding the pharmacist's role could reduce the level of their cooperation.²⁰

Clinical pharmacists are a primary source of scientifically valid information and advice regarding the safe, appropriate, and cost-effective use of medications.^{21, 22, 23} Therefore there is need to create greater awareness about the need for these services and the benefits they can bring to the patients in terms of their health related quality of life and to the healthcare system on the whole in terms of costs and improvement in services.

The attitude of doctors towards Pharmaceutical Care services and the role of clinical pharmacists was not found to be completely favorable. There was a mixed response to accepting and accommodating clinical pharmacists in clinical settings. More than 60% of the doctors had a view that pharmacists are a reliable source of general drug information, trained clinical pharmacists can inform doctors about more cost-effective alternatives to the drugs they prescribe, trained clinical pharmacists can ask doctors to clarify for them the drug therapy objectives doctors have in mind for their patients, trained clinical pharmacists can let them know that their patients have experienced some problems with their medications.

However more than 60% of the doctors disagreed that trained clinical pharmacists can counsel their patients regarding the safe and appropriate use of their medications; can inform them if they discover clinical problems with their prescriptions; can take personal responsibility for resolving any drug-related problems they discover. The possible reasons that could be attributed towards such a mixed response could be because of limited role, involvement and services offered by hospital pharmacists. The level of interaction between physicians and pharmacists in the developed world is high, resulting in safer, more effective, and less costly drug therapy.²² Many studies have shown that physicians are receptive to several clinical services provided by pharmacists if these services were provided in the form of consultation or in a supportive role.²⁴

Pharmaceutical care is a much needed service; therefore, it is high time to realize the need and importance to implement such services on ground. Keeping in mind the present scenario of heavy patient load of doctors, lack of drug information, education and counseling services, alarming rise in

consumption & abuse of drugs in the state of Jammu and Kashmir, pharmacist has a greater role to play and one such means is by offering pharmaceutical care services both at clinical and community level.

CONCLUSION: Findings of the present study revealed that, clinical pharmacy is still in its infancy in the state of Jammu and Kashmir as there is lack of knowledge and awareness among health care providers towards pharmaceutical care services and about the role that clinical pharmacists can play in promoting patient care. There was a mixed response from doctors and nurses towards accepting trained clinical pharmacists as an integral part of healthcare team and seeking their suggestions in optimizing therapeutic regimens for the patients with nearly half of them showing positive attitudes and nurturing favourable perceptions in this regard. Pharmacists need to raise their professional standards, skills and competencies so that the significance of their professional services gets realized and they are readily accepted and accommodated by other healthcare providers as an integral part of the healthcare team in offering patient care.

CONFLICTS OF INTEREST: None.

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