

Perceptions Of Interns And Faculty Regarding Undergraduate Clinical Pharmacology Teaching On Rationale Prescription Of Drugs

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Abstracts: Background: Interns being the most junior doctors involved in prescription of drugs in hospitals, there is a unmet need to obtain perceptions regarding undergraduate clinical pharmacology teaching on rationale prescription of drugs and level of retention of knowledge on clinical pharmacology .Hence this study was planned to assess the perceptions of Interns and faculty regarding undergraduate clinical pharmacology teaching on rationale prescription of drugs. Methodology: 58 interneers and 52 faculties of JN medical college were administered with a structured questionnaire. The questionnaire sought information about demographics, undergraduate clinical pharmacology teaching, confidence in rationale drug prescription and experiences of adverse drug reactions. Results: Among 58 interneers recruited, 26(44.8%) disagreed that training in clinical pharmacology has equipped them to prescribe rationally and 30(51.7%) Interneers expressed lack of confidence while prescribing rationally. Out of 52 faculties recruited, it was observed that 20(38.5%) faculty disagreed that undergraduate training in clinical pharmacology has equipped interns to prescribe rationally and 29(55.8%) of faculty agrees that interns are not confident enough to prescribe rationally. Conclusion: The present study showed that interns are not adequately equipped to prescribe rationally and confidently based on undergraduate clinical pharmacology teaching. Hence there is a need of vigorous training in clinical pharmacology during their graduation. [Rekha NMR. NJIRM 2015; 6(4):72-77]

Key Words: Interns; Faculty; clinical pharmacology teaching; rationale prescribing..

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Introduction: Rationale prescription of drugs means “prescribing right drug, in adequate dose for the sufficient duration & appropriate to the clinical needs of the patient at lowest cost, which promote health care and safety of patients¹. There is an evidence of poor prescribing by interns as junior doctors in hospitals leading to many adverse medication events². Globally, prescription-related errors are common and have resulted in a significant patient morbidity and mortality³. An intern can become efficient doctor by practicing rational prescription of drugs⁴. This can be possible only if an intern’s clinical pharmacology knowledge is adequate. Many concerns have been raised about the adequacy of undergraduate education in preparing new doctors for the complex task of rational and safe prescribing^{5,6}. Currently, rationale prescription of drugs will be taught in pharmacology subject of phase II MBBS and the knowledge of clinical pharmacology on rationale prescribing is not emphasized in 3rd and 4th phase of MBBS. Application of the knowledge of pharmacology gained during their earlier years is quite essential for patient care especially for rational drug use and prescription⁷. A gap in application of the theoretical knowledge is considered to be one of the reasons for occurrence

of adverse drug reaction (ADR) among patients. Patient health care can be improved only by enhancing knowledge of doctors with respect to rational drug prescribing. Enhancement of knowledge would be possible and meaningful if there is prior evidence of the existing level and extent of knowledge of the interneers with respect to clinical pharmacology. This will help us to plan and define the educational content, levels of knowledge enhancement and test the efficacy of educational interventions. Hence this study was planned to assess the perception of interneers and faculty regarding undergraduate clinical pharmacology teaching on rationale prescription of drugs.

Material and Methods: The study was conducted at Jawaharlal Nehru Medical College, Belgavi between October 2014 to March 2015, involving 58 interneers who completed 11 months internship and 52 faculties including both clinicians and pharmacologist of JN medical college. This study was conducted after obtaining permission from institutional ethics committee. All interneers and faculties willingly filled informed consent and pre-validated structured questionnaire.

A pre-validated structured questionnaire⁵ was designed with the help of subject expert and developed to collect information with respect to demographics, undergraduate CP teaching on rationale prescription of drugs, experiences of adverse drug reactions, confidence in drug prescription & suggestions for improvising clinical pharmacology teaching.

Self-reported retention of knowledge levels by interns and faculty perceptions w.r.t to clinical pharmacology was assessed. Eight questions for interns and seven questions for faculty were related to clinical pharmacology training and scored from 1 to 5 (Likert scale) for each item. Six questions for interns and four questions for faculty were related to ADR and scored (“1” for yes, “2” for no and “0” for didn’t know) for each item and two questions for both interns and faculty were related to the need of improvement in UG clinical pharmacology training.

All the subjects were explained regarding the study purpose and instructions for completing the questionnaire. After obtaining the consent from the study subjects, duly filled questionnaire were collected within 1 Hour. Qualitative data like

pharmacology teaching (CPT), knowledge regarding Clinical Pharmacology, attitude towards safe prescribing and safety of a drug were expressed in percentages of response to the questions. Data was analyzed using SPSS Version 20.

Results:

Table 1: Self-reported knowledge level by interneers regarding clinical pharmacology

Grading of knowledge	Frequency	Percent
Very Poor	6	10.3
Poor	9	15.5
Average	36	62.1
Good	6	10.3
Excellent	1	1.7
Total	58	100.0

1) Perception of interneers: Among the 58 subjects recruited in this study, males were 35 (60.3%) and females 22 (37.9%). Majority of them were in the age group of 22-25 (80.8%). All the interneers were graduated from Jawaharlal Nehru Medical College, Belagavi and Response rate was 100%.

It was interesting to observe from table 1 that nearly 62.1% of the interneers reported that they possessed average knowledge levels with regards

Table 2: Interns perceptions about the undergraduate clinical pharmacology teaching on rationale prescription of drugs using a questionnaire

Sl. No.	Item(n=58)	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Undergraduate training in clinical pharmacology has equipped me to prescribe	3(5.2%)	26(44.8%)	25(43.1%)	4(6.9%)	-
2	Undergraduate training in clinical pharmacology has equipped me to prescribe safely	3(5.2%)	25(43.1%)	24(41.4%)	6(10.3%)	-
3	Undergraduate training in clinical pharmacology has equipped me to prescribe rationally	3(5.2%)	18(31%)	11(19%)	26(44.8%)	-
4	I feel confidence affects my ability to prescribe	5(8.6%)	30(51.7%)	14(24.1%)	9(15.5%)	-
5	I feel experience affects my ability to prescribe	4(6.9%)	44(75.9%)	9(15.5%)	1(1.7%)	-
6	Safety is most important criteria of prescribing drugs	17(29.3%)	33(56.9%)	8(13.8%)	-	-
7	Efficacy is most important criteria of prescribing drugs	18(31%)	26(44.8%)	14(24.1%)	-	-
8	Cost effectiveness is most important criteria of prescribing drugs	13(22.4%)	26(44.6%)	16(27.6%)	2(3.4%)	1 (1.7%)

gender, educational status and clinical to clinical pharmacology.

Table 3. Internees perceptions about ADR

Sl. No.	Item(n=58)	Yes	No	Don't know/Did not answer
1	Witnessed ADR during internship	29(50%)	27(46.6%)	2(3.4%)
2	A good knowledge of UG CP training would prevent prescription errors and ADRs	46(79.3%)	10(17.2%)	2(3.4%)
3	Felt that ADR was avoidable	30(51.7%)	16(27%)	12(20.7%)
4	Felt that Improved training could have prevented ADR	37(63.8%)	13(22.4%)	8(13.8%)
5	Have been taught how to avoid ADR in UG	25(43.1%)	26(44.8%)	7(12.1%)
6	Have been taught how to avoid ADR in Internship	21(36.2%)	35(60.3%)	2(3.4%)
7	I feel UG CPT should be improved	29(50%)	26(44.8%)	3(5.2%)
8	I feel there is need of integrated teaching in clinical pharmacology from phase 2 to final year of MBBS	48(82.8%)	9(15.5%)	1(1.7%)

The attitude of interneers towards UG CP training in prescribing rationally as shown in [table 2](#) indicates that 26(44.8%) of interns disagreed with the fact that undergraduate training had equipped them to prescribe rationally. The other factors which affected their ability to prescribe was lack of confidence 30(51.7%), lack of experience 44(75.9%). Safety and efficacy was considered as important criteria for prescribing drugs in 33(56.9%) and 26(44.8%) respectively. Cost effectiveness was also considered as important criteria in rationale prescribing by 26(44.6%) interneers.

The attitude of interneers towards ADR as shown In [table 3](#), indicates that 29 (50%) of the subjects witnessed ADR during their internship. It was observed that 30(51.7%) felt that ADR was avoidable and most important is 46(79.3%) felt that a good knowledge of UG CP training would prevent prescription errors and ADRs.

Table 4: Faculty perception on retention of intern's knowledge levels regarding clinical pharmacology.

Grading of knowledge	Frequency	Percent
Very Poor	-	-
Poor	-	-
Average	12	23.1
Good	36	69.2
Excellent	4	7.7
Total	52	100.0

2) Perception of faculty: Among the 52 subjects recruited in this study, males were 24 (46.2%) and females 28 (53.8%). All the faculties were from KLE hospital and Jawaharlal Nehru Medical College, Belagavi and Response rate was 100%.

It was observed from [table 4](#) that nearly 36(69.2%) of faculties felt that interneers possessed good knowledge levels with regards to clinical pharmacology and around 12(23.1%) reported average knowledge.

The attitude of faculty towards UG CP training in prescribing rationally as shown in [table 5](#) indicates that 20(38.5%) faculty disagreed the fact that undergraduate clinical pharmacology training had equipped interns to prescribe rationally. 29 (55.8%) of faculty showed that there is lack of confidence among interns to prescribe rationally, 36(69.2%) faculty agreed that lack of experience affect interns ability to prescribe. Around 21(40.3%) of faculty agreed that interns are prescribing considering safety and efficacy as important criteria of rationale prescription and 25(48.1%) faculty agreed that interns are not considering cost effectiveness while prescribing drugs.

The attitude of faculty towards ADR as shown In [table 6](#), indicates that 28 (53.8%) of the subjects felt that Interns can report ADR during internship. Nearly 46(88.55%) of faculty agreed that a good knowledge of CP among interns obtained from

UG CP training would prevent prescription errors and ADRs.

Table 5: Faculty perceptions about the undergraduate clinical pharmacology teaching on rationale prescription of drugs using a questionnaire.

Sl. No.	Item(n=52)	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Undergraduate training in clinical pharmacology has equipped INTERNS to prescribe.	1(1.9%)	17(32.7%)	17(32.7%)	14(26.9%)	3(5.8%)
2	Undergraduate training in clinical pharmacology has equipped INTERNS to prescribe safely	1(1.9%)	12(23.1%)	15(28.8%)	22(42.3%)	2(3.8%)
3	Undergraduate training in clinical pharmacology has equipped INTERNS to prescribe rationally	2(3.8%)	14(26.9%)	15(28.8%)	20(38.5%)	1(1.9%)
4	INTERNS are confident enough to prescribe rationally	-	13(25%)	10(19.2%)	29(55.8%)	-
5	Experience of INTERNS improves their ability to prescribe	4(7.7%)	36(69.2%)	6(11.5%)	4(7.7%)	-
6	INTERNS prescribe the drugs considering Safety and efficacy as important criteria of rationale prescription	1 (1.9%)	21(40.3%)	13(25%)	16(30.8%)	1(1.9%)
7	INTERNS prescribe the drugs considering Cost effectiveness as important criteria of rationale prescription	2(3.8%)	9(17.3%)	15(28.8%)	25(48.1%)	1(1.9%)

Table 6: Faculty perceptions about ADR

Sl. No.	Item(n=58)	Yes	No	Don't know/ Did not answer
1	Interns can report ADR during internship	28(53.8%)	23(44.2%)	-
2	A good knowledge of CP among interns obtained from UG CP training would prevent prescription errors and ADRs	46(88.5%)	6(11.5%)	-
3	INTERNS have been taught how to avoid ADR in UG	33(63.5%)	19(36.5%)	-
4	INTERNS have been taught how to avoid ADR in internship	31(59.6%)	21(40.4%)	-
5	There is a need of improvement in undergraduate clinical pharmacology teaching	47(90.4%)	5(9.6%)	-
6	There is a need of integrated teaching in clinical pharmacology from phase 2 to final year of MBBS	52(100%)	-	-

Discussion: The present cross sectional study was conducted to assess the perceptions of interns and faculty regarding undergraduate clinical pharmacology teaching on rationale prescription of drugs.

Out of 58 interns and 52 faculty recruited for the study, 26(44.8%) interns and 20(38.5%) faculty expressed that interns are not adequately equipped to prescribe rationally based on undergraduate clinical pharmacology teaching. And

also 29(55.8%) faculty , 30(51.7%) interneers felt that there is lack of confidence while prescribing rationally.

Both study groups felt that Undergraduate teaching of interns has not adequately equipped them to prescribe rationally and safely which is similar to another study conducted among first year post graduate students in India⁸.This indicates that there is need of improvement in undergraduate teaching of rational prescription

of drugs to interns and this can be achieved by incorporating integrated clinical pharmacology teaching starting from 2nd phase to final phase of MBBS, Case base learning or Problem based learning ,prescription writing especially in special population, supervision of prescription writing in OSCE and OSPE, Focus group discussion, MCQs, extended questions etc.

Many interneers opined for the need of a crash course in clinical pharmacology just before starting their internship training⁹. Clinical pharmacologist play a crucial role in the development of prescribing skills by teaching clinical pharmacology to medical students making them more competent. It is also important that what the interneer does when he is independent of clinical practice. This can be improved by inclusion of bed side clinics during under graduate curriculum⁹.

Although significant number of interneers were aware of the need to report ADR but they lacked the knowledge of how to avoid ADR during under graduation or internship which is similar to other study¹⁰. CP teaching is not just preparing a medical graduate to become a good doctor but also to train them in improving patient safety. This can be done by integrated clinical programs, teaching rational and irrational combination of drug-drug interactions etc¹¹.

As faculties play major role in preparing a medical student into a good doctor, they should be trained thoroughly in clinical pharmacology before conducting any programs. Theoretical and practical CPT teaching coupled with frequent assessment of the knowledge and skills acquired by the students, would likely improve their rational drug use as interns.

Limitation: This study was limited in its design by the facts that,small sample size of students and faculty given their perceptions.The results can be confirmed by involving large number of interneers and faculty.

Conclusion: The result of present study showed that there is need of improvement in undergraduate clinical pharmacology teaching in order to prepare efficient doctors who promote healthcare and patient safety .

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