

Medicine Prescription Trends and Knowledge Related to Prescriptions among Medical Students of Faisalabad

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ABSTRACT

Objectives: To assess the knowledge and attitude of medical students regarding prescription of medicine

Study Design: Cross Sectional study.

Place and Duration of Study: This study was conducted at the Department of Community Medicine, University Medical & Dental College, Faisalabad December 2015 to July 2016

Materials and Methods: It was a cross-sectional study conducted at Department of Community Medicine University Medical & Dental College, Faisalabad, from December 2015 to July 2016. Study participants were approached through simple random sampling and sample size was 384 medical students of medical colleges of Faisalabad. After obtaining consent from institutional review board, a structured questionnaire was used for data collection.

Results: Out of 384 medical students in the study, 83% were male and 69% were from final year. Medicines prescribed by the medical students were for headache (32.8%) followed by generalised pain (31.3%). Most common medicines prescribed were painkillers (32%) and antibiotics (28.9%). A highly significant difference was observed between prescription trends between male and female students, male students (67.5%) were more likely to prescribe medicines as compared to female students ($p=0.000$).

Conclusion: The knowledge about medicine prescription was mainly gained during lectures and from prescription books. Likelihood of prescribing medicines was observed in majority of students and majority felt confident in prescribing medicines. This indicates that practice of giving medicine prescription is highly prevalent in medical students.

Key Words: Prescription, Medicine, Knowledge, Attitude, Medical Students

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INTRODUCTION

The ability to prescribe commonly used medications safely and effectively is a core competency of the newly qualified physician. New graduates are often required to prescribe many times each day on the hospital drug chart and write most of the prescriptions of the hospital. Have the requirements of this task in recent years for several reasons that an expanded national formulation, a greater number of drugs per patient (poly-pharmacy), patient performance, higher, more vulnerable elderly patients, more therapeutic regimens Complex, increased patient demand for information and increased threat of litigation.

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Prescription errors are common in UK hospitals. A study from a London university hospital acknowledged errors 135 per week, a quarter of which was potentially serious, with most third- or fourth-year officers¹. The National Patient Safety Agency database is > 50,000 annual reports of acute and general hospital drug incidents². A report by the Audit Committee has suggested that adverse drug events were responsible for the deaths of 1,100 hospital patients in 2001 in the UK, a five-fold increase over the last 10 years³. There is evidence that inadequate training in such cases often contributes^{4,5}. An analysis of 88 serious medication errors at a British hospital has suggested that skill deficits and "knowledge" a factor in 60% of cases were⁴.

Several studies have suggested that provision of education aimed at improving performance and reducing prescription errors may⁶⁻⁹. It is not surprising that the General Medical Council (GMC), which regulates basic medical training, knowledge and skills identified in connection with the use of medications that are necessary for all UK medical students at the time of graduation¹⁰. However, there was widespread concern that these goals are not met, in part because of recent changes in the medical curriculum, which focuses on traditional scientific disciplines such as pharmacology

and clinical and therapeutic pharmacology (CPT)¹¹⁻¹³ reduced. This position was most often expressed by those who may be perceived to have a conflict of interest, and was challenged by the GMC¹⁴⁻¹⁵.

MATERIALS AND METHODS

It was a cross-sectional study was conducted at Department of Community Medicine University Medical & Dental College, Faisalabad, from December 2015 to July 2016. Data was collected from a sample of 384 medical students through simple random sampling. Sample size was calculated using Open-epi software. Institutional review board approval was obtained before starting data collection.

A structured questionnaire was used as a data collection tool. The questionnaire was divided into 4 main sections namely socio-demographic data, knowledge and attitudes about prescription of medicine. Data analysis was done using SPSS version 20.0. Frequencies and percentages were reported. While a scoring system was used for analysis of knowledge and attitude of the respondents. The scores for knowledge and attitude were categorized based upon the median. Scores that fall below median were categorized as poor and scores above median were categorized as good scores for knowledge and practices.

RESULTS

A total of 384 medical students were included in the study. Eighty three percent of the respondents were males (320/384). And majorities of the participants (69%) were from final year MBBS. Fifty nine percent (228/384) respondents resided in urban areas. Details of demographic data of respondents are given below in Table 1.

Table No.1: Demographic Characteristics

	Variables	Frequency (n)	% age
1	Gender		
	Male	20	83.3
	Female	64	16.7
2	Study Year		
	4 th year	119	31
	Final year	265	69
3	Hometown		
	Rural	156	40.6
	Urban	228	59.4
4	Father's profession		
	Medical	58	15.1
	Non-medical	158	41.1
	No response	168	43.8
5	Mother's profession		
	Medical	25	6.5
	Non-medical	157	40.9
	No response	34	8.9
	Housewife	168	43.7

Out of 384 respondents 255(66.4%) responded that they prescribe medicines to other people. Only a few (7.3%) respondents reported that patients suffered from side

effects because of their prescriptions. A similar proportion of respondents (66.4%) also reported that they treat themselves and 11.7% reported that they suffered from side effects because of self medication. The most common illness for which medicines were prescribed was headache (32.8%), followed by generalized pain (31.3%). Most common medicines prescribed were painkillers (32%), followed by Antibiotics (28.9%). Forty three percent of the respondents (123/384) reported that not knowing the brands was the commonest mistake that was being made while prescribing medicines. Pharmacology course and prescription books were the most frequently used sources of information reported by students. Detailed information on prescription of medicines is reported in Table 2 below.

Table No.2: Prescription of Medicine

	Variables	Frequency (n)	%age
1	Prescribe medicine to others		
	Yes	255	66.4
	No	129	33.6
2	Patients developed side effects		
	Yes	28	7.3
	No	356	92.7
3	Treat own self		
	Yes	255	66.4
	No	129	33.6
4	Developed Side effects		
	Yes	45	11.7
	No	339	88.3
5	Common Health Conditions		
	Fever	95	24.7
	Pain	120	31.3
	Weakness	28	7.3
	Headache	126	32.8
	Other	15	3.9
6	Common Medicines Prescribed		
	Painkillers	123	32
	Antibiotics	111	28.9
	Antipyretics	60	15.6
	Antihypertensive	54	14.1
	Anti diabetics	36	9.4
7	Common error in Prescription		
	Not knowing the brand names	167	43.5
	Not knowing what to prescribe	63	16.4
	Wrong treatment duration	79	20.6
	Not asking patients about allergies	75	19.5
8	Source of Prescription Information		
	Professor	63	16.4
	Pharmacology Course	120	31.3
	Prescription Books	120	31.3
	Classmates	81	21

Majority of respondents (42.2%), agreed to the fact that medicine prescription studied in class is major source of motivation for giving prescriptions. Sixty two percent (239/384) of respondents reported that they felt confident while prescribing medicines. Forty three percent (167/384) respondents disagreed to the fact that overlooking side effects while prescribing medicines is normal. Fifty eight percent respondents (225/384) reported that changing medicine dose during the course is good for achieving better results. Thirty eight percent (147/384) respondents reported that they feel confused because of different names given to the same medicine formula. Only a small percentage of participants (14.1%) agreed to the fact that consulting doctors for minor health issues is a waste of time and money. Majority of students (36.2%) reported that they consult previous prescriptions before prescribing new medicines. Forty nine percent respondents (191/384) reported that prescribing nutritional supplements by students is a normal practice. While only a small percent of students (15.9%) agreed to the fact that they prescribed expensive drugs to patients. Table 3 below shows the detailed results.

Table No.3: Attitude of Medical Students Towards Drug Prescription

Statements	Agree	Neutral	Disagree
1 Prescribe medicines recommended during class	162 (42.2%)	70 (18.2%)	152 (39.6%)
2 Feel confident	239 (62.2%)	66 (17.2%)	79 (20.6%)
3 Over looking side effects	54 (14.1%)	163 (42.4%)	167 (43.5%)
4 Change medicine dose for better results	225 (58.6%)	138 (35.9%)	21 (5.5%)
5 Switch medicines for better results	250 (65.1%)	85 (22.1%)	49 (12.8%)
6 Confused with different names of same medicine	147 (38.3%)	132 (34.4%)	105 (27.3%)
7 Waste of money and time	54 (14.1%)	57 (14.8%)	273 (71.1%)
8 Consult previous prescriptions	139 (36.2%)	127 (33.1%)	118 (30.7%)
9 Prescribe nutritional supplements	191 (49.7%)	117 (30.5%)	76 (19.8%)
10 Prescribe expensive medicines	61 (15.9%)	151 (39.3%)	172 (44.8%)

A chi square test of association was carried out to find out the association between independent variables and dependant variable (likelihood of prescribing medicine). A highly significant difference was observed between the prescription trends between male and female students, male students (67.5%) were more likely to prescribe medicines as compared to female students (p=0.000). Final year students were more likely to prescribe medicines as compared to students of

fourth year (p= 0.003). Students who gained prescription information from pharmacology course were more likely to prescribe medicines as compared to students who gained information from other sources (p=0.026). Detailed results are explained in table 4 below.

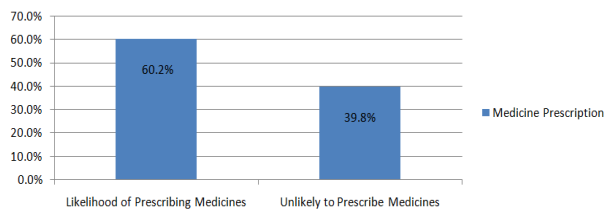


Figure No.1: Medicine Prescription

Table No.4: Association between attitude towards medicine prescription and independent variables

Variable	Unlikely to Prescribe Medicines	Likelihood of Prescribing Medicines	χ^2 Results
1 Gender			$\chi^2 = 43.2$, df= 1, P=0.000
Male	106(33.5%)	206(66.5%)	
Female	49(67.2%)	25(33.8%)	
2 Study Year			$\chi^2 = 64.3$, df= 1, P=0.003
1 st year	83(69.7%)	36(30.3%)	
Final year	70(26.4%)	195(73.6%)	
3 Prescription Information			$\chi^2 = 78.5$, df= 3, P=0.026
Professor	13(20.6%)	50(79.4%)	
Pharmacology Course	42(35%)	78(65%)	
Prescription Books	66(55%)	54(45%)	
Classmates	27(33.3%)	54(66.6%)	

DISCUSSION

A cross sectional study highlighted the common trends and practices of medical students regarding prescription of medicine and side effects related to prescribed medicines. This student also highlighted the common mistakes of medical students during prescription of medicine.

Pharmacology course and prescription books were the most frequently used sources of information reported by the students. Almost half of the students consult previous prescriptions before prescribing new medicines. A similar study conducted and its results found that the students got knowledge about medicines through the brochures 183 (52.3%) followed by previous prescriptions 61 (17.4%) and pharmacist 60 (17.4%)¹⁶.

The most common medicines prescribed by the medical students of the Nigeria were antimalarial (38.24%) and paracetamol (20%) while in our study, the most common medicine prescribed by medical student was painkillers (32%) and antibiotics (28.9%)¹⁷.

In our students, the most common medicines prescribed for the conditions by the medical students were for

headache (32.8%) followed by generalized pain (31.3%) while a study conducted in Mexico regarding medicine prescription and the most common medicines prescribed by the students were for infection (n = 37, 56%), followed by pain (n = 24, 38%)¹⁸.

A study conducted in Brasilia regarding quality of prescription and lack of information about pharmacological treatment, side effects, and administration route were the major deficiencies observed. On another hand in this study, the most common mistake of medical students during prescription did not know the brand name of the medicine¹⁹.

They got knowledge regarding medicine and prescription was from pharmacology course and prescription books. A study conducted in Nepal revealing that the students of both courses acquire prescribing skills to a limited extent during preclinical phase. Prescribing errors were found both in physician and drug related components²⁰.

Thirty eight percent (147/385) respondents reported that they feel confused because of different names given to the same medicine formula and a study conducted by Grissinger and results were the dual trademarks for a single product are particularly problematic when one of the product names is well established before the new product is launched²¹.

CONCLUSION

The present study highlighted the attitude of medical students towards medicine prescription. Majority of students were likely to give prescriptions. The knowledge about medicine prescription was mainly gained during lectures and from prescription books. Likelihood of prescribing medicines was observed in majority of students and majority felt confident in prescribing medicines. This indicates that practice of giving medicine prescription is highly prevalent in medical students. This activity should be constantly looked after so that safe use of medicines and authenticated prescriptions could be provided to patients. Professors and instructors can play a vital role in educating students; students should be encouraged to take part in practical activities but they should not be allowed to prescribe medicines on their own.

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

- Dean B, Schachter M, Vincent C, Barber N. Prescribing errors in hospital inpatients: their incidence and clinical significance. *Qual Saf Health Care* 2002;11(4):340-4.
- National Patient Safety Agency. Quarterly National Reporting and Learning System data summary: Winter 2006/07. Available at <http://www.npsa.nhs.uk/health/resources/NRLSdata> (last accessed: 2 March 2007).
- The Audit Commission. *A Spoonful of Sugar: Medicines Management in NHS Hospitals*. London: The Audit Commission; 2001.
- Dean B, Schachter M, Vincent C, Barber N. Causes of prescribing errors in hospital inpatients: a prospective study. *Lancet* 2002;359:1373-8.
- Leape LL, Bates DW, Cullen DJ, Cooper J, Demonaco HJ, Gallivan T, et al. Systems analysis of adverse drug events. ADE Prevention Study Group. *JAMA* 1995;274:35-43.
- Scobie SD, Lawson M, Cavell G, Taylor K, Jackson SHD, Roberts TE. Meeting the challenge of prescribing and administering medicines safely: structured teaching and assessment for final year medical students. *Med Edu* 2003;37:434-7.
- Garbutt JM, DeFer TM, Highstein G, McNaughton C, Milligan P, Fraser VF. Safe prescribing: an educational intervention for medical students. *Teach Learn Med* 2006;18:244-50.
- Langford NJ, Martin U, Kendall MJ, Ferner RE. Medical errors. Medical schools can teach safe drug prescribing and administration. *Br Med J* 2001; 322(7299):1424.
- Vollebregt JA, Metz JC, de Haan M, Richir MC, Hugtenburg AG, De Vries TP. Curriculum development in pharmacotherapy: testing the ability of preclinical medical students to learn therapeutic problem solving in a randomized controlled trial. *Br J Clin Pharmacol* 2006;61:345-51.
- General Medical Council. *Tomorrow's doctors: recommendations on undergraduate medical education*. London: GMC, February 2003.
- Maxwell S, Walley T, Ferner RE. Using drugs safely. *Br Med J* 2002;324: 930-1.
- Rawlins MD. Making tomorrow's doctors better prescribers. *Br J Clin Pharmacol* 2003;55:495.
- Aronson JK, Henderson G, Webb DJ, Rawlins MD. A prescription for better prescribing. *Br Med J* 2006; 333: 459-60.
- Rubin P. A prescription for better prescribing: medical education is a continuum. *Br Med J* 2006; 333(7568):601.
- Kmietowicz Z. GMC to gather data on prescribing errors after criticism. *Br Med J* 2007; 334: 278-9.
- Kasulkar AA, Gupta M. Self medication practices among medical students of a private institute. *Ind J Pharm Sci* 2015;77(2):178-82.
- Oshikoya KA, Bello JA, Ayorinde EO. Prescribing knowledge and skills of final year medical students in Nigeria. *Ind J Pharm* 2008;40(6):251-5.
- Guzmán-Álvarez R, Medeiros M, Lagunes LR, Campos-Sepúlveda A. Knowledge of drug prescription in dentistry students. *Drug Health Patient Saf* 2012;4:55-9.
- Moura C, Naves J, Coelho E, Lia E. Assessment of quality of prescription by dental students. *J Appl Oral Sci* 2014;22(3):204-208.
- Rauniar G, Roy R, Das B, Bhandari G, Bhattacharya S. Prescription writing skills of pre-clinical medical and dental undergraduate students. *J Nepal Med Assoc* 2017;47(172):197-200.
- Grissinger M. Multiple Brand Names for the Same Generic Drug Can Cause Confusion. *PT* 2013; 38(6):305.