

A Survey of Factors Influencing Drug Choice and the Prescribing Attitudes Among Junior Doctors of Two Major Tertiary Care Hospitals in Chittagong City

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Abstract

Background: The magnitude of rational prescribing is well known but the irrationalities and errors in prescriptions are seen worldwide as the training of future doctors is still not up to the mark. This study aimed to find out the factors influencing drug choice and the prescribing attitudes among junior doctors of two major tertiary care hospitals in Chittagong city. **Methods:** A cross-sectional questionnaire survey was conducted among the junior doctors of Chittagong Medical College Hospital (CMCH) and Chattagram Maa -O- Shishu Hospital Medical College (CMOSHMC) to assess the factors influencing drug choice and the prescribing attitudes among junior doctors during August 2016. **Results:** The questionnaires were provided to 220 participants of whom 162 (73.63%) participants provided a complete response to the survey. The response rate was 75.89% in CMOSHMC and 71.29% in CMCH. The majority (87.03%) of junior doctors mentioned that they are highly influenced by their supervising senior doctors' patterns of prescriptions. About 79.01% of them took the cost of drugs into consideration while prescribing. 58.64% of the prescribers reported their confidence while prescribing without supervision. On the other hand, 33.33% doctors mentioned that side effects of the drug changed their patterns of prescriptions. Only one-third (33.95%) of the junior doctors opined that the pharmaceutical promotional offers never influence them. **Conclusion:** Junior doctors decide their drug of choice mainly by copying their supervising senior doctors' prescriptions without knowing how to choose, and they feel less confident while prescribing. Issues of drug cost, adverse drug reactions concerned the majority of the participants, but they do not have the clear ideas on how to deal with these practice behaviours. Moreover, pharmaceutical promotional offers significantly persuaded the junior doctors' prescription patterns. So, there is a need for the continuous medical education programs in hospital settings to train the junior doctors for building capacities and competencies while prescribing.

Key words: Prescription; Drug Choice; Junior Doctors; Medical Education.

INTRODUCTION

Irrational, inappropriate, or sometimes even harmful prescribing behaviour among junior doctors is a growing concern in the present day's health sector¹. This group of physicians has the scarcity of knowledge on therapeutic reasoning unlike the critical diagnostic thinking^{2,3}. Little is known about how this group of clinicians should make the choice of prescription for a particular a drug/drugs². Knowledge regarding the rational prescribing of a drug/drugs is considered as a 'matter of knowing' which evolves over time by following senior fellow physicians and surgeons rather than following an evidence-based approach⁴. Senior doctors often follow a 'mental standard treatment guideline' while prescribing for common ailments^{4,5}. Very often senior doctors are persuaded by their preoccupied mind to make the choice of a certain treatment strategy rather than following a standard international guideline⁶.

There is also a deficiency in training up the junior doctors regarding a standard prescribing behaviour making many graduates under-prepared and less confident even after the graduation⁷. Numerous research is trying to understand the factors affecting the prescribing attitude among junior doctors regarding decision making and critical pharmacological reasoning during practice^{8,9}. The undergraduate and postgraduate education, various social factors, the influence of the supervising senior doctor, etc. are among these potential factors¹⁰⁻¹³.

As the majority of prescriptions in tertiary care hospitals in Bangladesh are done by junior doctors, there is a grave importance of a proper assessment regarding the prescribing attitudes among this fraternity of practising physicians. Taking that into account, we carried out this survey with the aim to investigate the factors impacting the choice of drugs and the prescribing attitudes of junior doctors in Chittagong Medical College Hospital (CMCH) and Chattagram Maa -O- Shishu Hospital Medical College (CMOSHMC) the two largest government and private tertiary care hospitals respectively in Chittagong city of Bangladesh. In the perspective of Bangladesh, junior doctors include the interns, indoor medical officers, assistant registrars, post-graduate trainees like residents and honorary medical officers. On the other hand, senior doctors cover registrars, house physicians and surgeons, assistant to full professors. To the authors' knowledge, no study of this kind has been attempted so far in medical college hospital setting in Bangladesh.

MATERIALS AND METHODS

For this study, a cross-sectional questionnaire survey among the junior doctors of CMCH and CMOSHMC to evaluate the factors influencing drug choice and the prescribing attitudes during July 2016 was carried out. All the completed questionnaires were collected and assessed properly by the Department of Pharmacology & Therapeutics of the respective medical colleges.

RESULTS

Demographic Characteristics

220 junior doctors participated in the study of which 162 (73.64%) participants completed the survey. The response rate was 75.89% in CMOSHMC and 71.29% in CMCH. In CMOSHMC 80% were male, and 20% were female while in CMCH the percentages were 70% and 30%, respectively (Table 1).

Table 1: Demographic characteristics

	All 73.63% n=162/220	CMOSHMC 75.89% n=85/112	CMCH 71.29% n=77/108
Sex			
Male	75.30% 122/162	80% (68/85)	70.12% (54/77)
Female	24.69% 40/162	20% 17/85	29.87% 23/77

Factors Influencing Drug Selection

As indicated in Table 2, 84.56% junior doctors think that their supervising senior physicians and surgeons are cooperative towards their independent prescribing attitude. 87.03% of the junior doctors mentioned that they are highly affected by their supervising physicians' patterns of prescriptions. Only 4.32% junior physician have little influence while prescribing. Almost half of the junior doctor (55.69%) follows senior doctors' prescriptions. About 79.01% of junior doctors take the cost of drugs into serious consideration during their practice. The cost of the drug is not at all critical to 5.55% of junior doctors.

Table 2 : Factors influencing drug selection, rated by junior doctor

Factors	All 73.63% n=162/220	CMOSHMC 75.89% n=85/112	CMCH 71.29% n=77/108
To what extent you find your supervising senior doctors cooperative towards your independent prescription of drugs?			
Cooperative	84.56% 137/162	84.70% 72/85	85.54% 65/77
Less cooperative	10.49% 17/162	9.41% 8/85	11.28% 9/77
Not cooperative	4.93% 8/162	5.88% 5/85	3.18% 3/77
To what degree do your supervising senior doctors' patterns of prescriptions influence you?			
High	87.03% 141/162	87.05% 74/85	87.20% 67/77
Low	8.64% 14/162	9.41% 8/55	7.23% 6/77
Very low	4.32% 7/162	3.52% 3/85	5.57% 4/77
To what percentage you exactly follow your supervising senior doctors' patterns of prescriptions?			
80-100%	38.27% 62/162	37.64% 32/85	39.19% 30/77
50-80%	65.69% 81/162	48.23% 41/85	51.67% 40/77
<50%	16.32% 19/162	14.11% 12/85	9.11% 7/77
To what degree you believe you are influenced by the promotional offers of pharmaceutical companies before prescribing a drug/drugs?			
Never	33.95% 55/162	37.64% 32/85	29.12% 23/77
A little	46.91% 76/162	45.88% 39/85	49.88% 37/77
High	19.13% 31/162	16.46% 14/85	21.96% 17/77
How important is the cost of the drug in your prescription?			
Important	79.01% 128/162	81.17% 69/85	76.35% 59/77
Not very important	15.43% 25/162	14.11% 12/85	16.67% 13/77
Not at all importance	5.55% 9/162	4.70% 4/85	6.98% 5/77

The Prescribing Attitudes of Junior Doctors

Table 3 presents the information regarding the prescribing attitudes among junior doctors. 58.64% of the junior prescribers feel that they are confident while prescribing a drug/drugs without the supervision of the senior doctors while only 14.81% the junior doctors feel that they are less confident without proper supervision. Before prescribing a drug/drugs, only 45.58% junior doctors check the current guidelines. In the questions regarding taking proper drug history of the patient, almost half of the doctors do not take a proper drug history during admission/OPD consultation. Only 41.35% physicians check interactions before prescribing multiple drugs at a time.

Table 3 : Prescribing attitudes of junior doctors

Factors	All 73.63% n=162/220	CMOSHMC 75.89% n=85/112	CMCH 71.29% n=77/108
To what extent you feel confident while prescribing drugs without supervision?			
Very confident	25.92% 42/162	21.17% 18/85	32.25% 24/77
Confident	58.64% 48/162	56.47% 48/85	61.45% 47/77
Less confident	14.81% 24/162	22.34% 19/85	6.98% 5/77
To what extent you check the current guidelines before prescribing drug/drugs?			
Always	45.58% 54/162	37.64% 32/85	28.76% 22/77
When feeling necessary	33.95% 55/162	58.82% 50/85	66.35% 5/77
Never	4.32% 7/162	3.52% 3/85	4.88% 4/77
To what extent you review the current literature regarding different drugs in your daily clinical practice?			
Always	22.83% 37/162	42.35% 36/85	40.14% 31/77
When feeling necessary	47.53% 77/162	47.05% 40/85	48.72% 37/77
Never	11.11% 18/162	10.58% 9/85	11.16% 9/77
To what extent you check for the drug interactions before prescribing multiple drugs at a time?			
Always	41.35% 67/162	45.88% 39/85	36.47% 28/77
When feeling necessary	51.85% 84/162	44.69% 39/85	57.94% 45/77
Never	7.4% 12/162	8.23% 8/85	5.59% 4/77
To what extent you take proper drug history from the patients during admissions/OPD consultations?			
Always	44.44% 72/162	50.58% 44/85	36.24% 28/77
When feeling necessary	42.59% 69/162	37.63% 32/85	48.56% 37/77
Never	12.96% 21/162	10.58% 9/85	15.16% 12/77

Adverse Drug Reactions and Safety

Table 4 presents the information concerning junior doctors' attitudes about the safety of medications. Only 33.33% physicians mentioned that side effects of drugs change their patterns of prescriptions. Alarming, 22.02% doctors mentioned that adverse drug reactions never affect their prescribing decisions. Regarding the counselling of patients on potential side effects of drugs, 65.92% physicians take part in effective counselling. 10.49% junior doctors mentioned that they never counsel the patients on potential side effects of prescribed drug/drugs.

Table 4 : Attitude of junior doctor towards safety

Factors	All 73.63% n=162/220	CMOSHMC 75.89% n=85/112	CMCH 71.29% n=77/108
How much the chance of an Adverse Drug Reaction (ADR) affects your prescribing decision?			
Very much	33.33% 54/162	32.94% 27/85	34.98% 27/77
Only when I am asked by a patient about ADR	50% 81/162	51.52% 44/85	48.72% 37/77
Not at all	22.02% 27/162	15.52% 14/85	16.97% 13/77
To what extent you counsel the patient on potential side effects before prescribing a drug/drugs?			
Always	38.27% 62/162	40.82% 33/85	36.34% 28/77
When feeling necessary	65.92% 82/162	48.22% 40/85	56.41% 43/77
Never	10.49% 17/162	12.76% 11/85	7.25% 6/77

DISCUSSION

Proper and adequate prescribing attitude is the cornerstone of modern clinical practice. Numerous factors govern the reasoning behind every prescription decision of the medicines. Some of these factors are the prescriber's and the patient's situation, professional environment, etc^{14, 15}. The present study aims to evaluate the factors influence drug choice and the prescribing attitudes of junior doctors in two largest government and private tertiary care hospitals of Chittagong city, Bangladesh.

Junior doctors base their choices while prescribing by following their clinical teachers. For this reason, medical curriculum adopted by different universities should emphasise more on therapeutic reasoning¹⁶. Reports from various countries show that junior medical doctors do not feel prepared to prescribe independently^{17,18}. Some surveys show that intern doctors are not even competent enough in writing a prescription^{19, 20}. Many studies revealed that junior doctors mainly copy the drug choices of the senior doctors as they lack experience. This situation

demands that the clinical teachers should explain the reason behind every prescription to their trainee doctors^{21,22}.

A study conducted by Riechert et al revealed that 80% physicians felt the importance of the cost of medicines while prescribing²³. The similar result came out in the present study, as 79.09 % percent of junior doctors took the cost of drugs seriously into consideration. A study among physicians of Greece and Cyprus (2009) found that more than 90% doctors change their prescription patterns from the fear of side effects²⁴. However in the present study, only 33.33% junior doctors mentioned that side effects of the drug change their pattern of prescriptions. According to Rahman pharmaceutical advertisements and literature highly affect the prescribers' attitude during patient management rather than scientific literature²⁵. In our study, only one-third (33.95%) of the junior doctors say that pharmaceutical promotional offer never influenced them. 49.91% mentioned that they had a little influence and pharmaceutical promotions highly influence 19.13% junior doctors. Several studies revealed that the pharmaceutical sales representatives have a significant influence on drug choice^{26,27}. Our study also shows the same result. Practice guidelines became an indispensable tool for patient management in last few decades²⁸. However, the present study revealed that only 45.58% junior doctors' check guidelines before prescribing. The questions regarding taking a proper drug history showed that 42.59% of the junior doctors did not take proper drug history during admission/OPD consultation. This finding is similar to that of a previous survey involving healthcare professionals²³.

After taking the results of the current study into consideration, it is evident that understanding the factors in uencing prescribing behavior in junior doctors is of paramount importance. There is evidence that at the early stages of a medical career, doctors may not be sufficiently competent and confident to prescribe²⁹⁻³¹. As prescribing errors are frequent among junior practitioners, senior doctors' proper supervision play a crucial role in this regard^{15,32}. According to Rahman et al different studies conducted in Bangladesh revealed that prescribing behavior practiced here is irrational³³. To combat this situation,

the junior doctors have to have the proper training of pharmacological reasoning to improve the patient care to reduce the overall mortality and morbidity. To develop these skills among junior physicians, medical schools should implement proper education curricula on the fair therapeutic use of medicines. Over-reliance on promotional efforts and information from the pharmaceutical industries should be discouraged among junior physicians. Supervising physicians should provide the main training regarding rational prescribing attitudes. Senior doctors should follow the current standard guideline so that they can inspire the trainees under them to follow the proper evidence-based medicine approach. They should take feedback from the junior doctors on every prescription which will encourage the juniors to go through current literature more often. Hospital administrations also need to be cautious about their doctors' prescribing attitudes, and there must be well-adopted the rapeutic guidelines considering the medical, social and economic associates.

CONCLUSION

The results of the study match the findings of other published studies regarding the prescribing attitudes adopted by the junior physicians. This study confirmed that junior doctors' prescription patterns are influenced by multiple factors. This group of practitioners bases their choice of drug/drugs mainly by following their supervising senior doctors' prescriptions without knowing the rationale for the selection and feel less confident while prescribing. It is essential that senior doctors should clearly explain to the junior doctors how they arrived at a specific choice of medication. Issues regarding the cost of the drug, adverse drug reactions concerned the majority of physicians, but they do not have the proper training to deal with these matters. Moreover, pharmaceutical promotional offers significantly influenced junior doctors' prescribing behaviour. So, there is a need for continuous medical education programs to train the junior doctors adequately so that they develop proper therapeutic attitudes during the clinical practice.

DISCLOSURE

All the authors declared no competing interest.

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