Research Article

Legibility and accuracy assessment of prescriptions in Internal Medicine Department of a tertiary care teaching Hospital of Eastern India

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ABSTRACT

Properly written prescription is the key to rational use of medicines. Present study aims to assess the legibility and accuracy of prescriptions in Bed Head Tickets (BHTs) in an Internal Medicine department of a tertiary care teaching Hospital. In this cross-sectional observational study, BHTs were scanned over a period of two months (June 2015 and July 2015) and prescriptions assessed using the following parameters: i. legibility (a four point scoring method); ii. Name / formulations / strength / dose of drugs (correct / incorrect); iii. Capital letter / archaic terminology / leading zero (used/ not used). A total of 420 prescriptions were assessed of which legible prescriptions (score 4) were 63.58%. In the rest, some words were difficult to be read though could be understood by a clinician (Score 3). Spelling of names of medicines was correct in 98.1% of cases. Formulations and strength of drugs were not mentioned in 1.9% cases. Capital letter was used in 10.23%, archaic terminology was used in 85% and leading zero was not used in 19% cases. Results of this study indicate that even in a tertiary care teaching hospital, a significant number of prescriptions in BHTs lack adequate legibility and accuracy. The quality of indoor prescriptions may be improved by generating awareness among prescribers and taking simple measures like using capital letters, avoiding the use of archaic terminology and writing the correct name, formulations, strength and dose of medicines. Use of computers in prescription writing would also benefit the aspects of legibility of prescriptions.

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INTRODUCTION:
Drug therapy is one of the most commonly used therapeutic option; the other therapeutic approaches are surgery, physical therapy, radiation, psychotherapy, health education, counseling and no therapy. Treatment with medicine and other therapeutic modalities require in writing or issuing a prescription- which is “the prescriber’s order to prepare or dispense a specific treatment- usually medication- for a specific patient.”[1] The prescription represents a mechanism through which a treatment modality is provided to a patient also it is an important therapeutic transaction between physician and patient.[2,3] Usually an average of one prescription is written on every outdoor visit, but at times more than one prescription may be generated at a single visit. For treatment of indoor admitted patients in hospitals, medicines are prescribed on a particular page of the patients’ hospital chart which is called the physician’s order sheet or chart order or bed head ticket. The patient’s name, age, sex, date etc. are usually written in the BHT, where in-charge of the particular unit issues a prescription also. Thus the elements of the BHT are equivalent to the central element of the prescription of the out-patient department.[1]

In India, Consumer Protection Act (CPA-1986) was introduced in health sector to protect the patients from deliberate negligence caused by health care providers. Since then all forms of written documents/prescriptions have become important legal documents. The inherent legal and ethical duty of a prescriber is to write the prescription or patient order legibly, clearly and accurately.[4] Though E-prescribing is practiced in many countries and selected health set-ups in India, in govt. set-ups, hand written prescriptions and patient orders are still the primary means of dispensing medicines to patients. In hand written prescriptions, the prescriber usually understands his writing but the dispenser and others may not always understand an improper handwriting which leads to misinterpretation and medication errors. Dispensing wrong and inappropriate medications due to this may result in serious adverse events and even death.[5]

In India and Worldwide, a very few studies have reported on aspects of legibility and accuracy of prescriptions. It has been well studied that ambiguity or confusion in prescriptions may be avoided by following some principles while writing a prescription. Some of them are: hand writing – must be clear, spelling of name of medicines- must be correct, formulations and strength of medicines- should be quoted clearly, abbreviations of medicine names and archaic terminologies (Q.D., O.D. etc)- should be avoided, leading zero (where applicable) and capital letter- should always be used.[1,3,5] Keeping this background in view, the present study was undertaken to assess the legibility and accuracy of prescriptions in Bed Head Tickets (BHTs) in an internal medicine department of a tertiary care Medical College and Hospital.

MATERIALS AND METHODS:
Study Setting and Duration:
This unicentric, cross-sectional, observational study was carried out by Department of Pharmacology, Medical college, Kolkata during a period of two months (June 2015 and July 2015) after obtaining due approval of Institutional Ethics Committee. Duly signed informed consent form was taken from the patients’ in their vernacular before obtaining the scanned copy of all the Indoor Bed Head Tickets (BHTs) generated from Medicine department. A study specific data record form was prepared to collect the data. One independent researcher (a non medical person), who was not involved in the admissions or recording of BHTs was allocated to collect and evaluate the data. The person was trained adequately about the data collection procedure and analysis. Prescriptions obtained thereof was assessed using the following parameters:

A. Legibility (a four point scoring method as used by others)[6,7] as mentioned below:
1. Illegible (most or all words impossible to identify)
2. Most words illegible; meaning of the whole unclear
3. Some words illegible, but report can be understood by a clinician
4. Legible (all words clear)

B. Name / formulations / strength / dose of drugs (correct / incorrect)

C. Capital letter / archaic terminology / leading zero (used/ not used).

Statistical Analysis:
Collected data was evaluated using Microsoft Word Excel 2007. The data were analyzed for determining descriptive statistics such as frequency and percentage.

RESULTS:
A total of 420 prescriptions were assessed of which legible prescriptions (score 4) were 63.58%. In the rest, some words were difficult to be read though could be understood by a clinician (Score 3) [Table 1].
Spelling of names of medicines was correct in 98.1% of cases. Formulations and strength of drugs were not mentioned in 1.9% cases [Table2]. Capital letter was used in 10.23%, archaic terminology was used in 85% and leading zero was not used in 19% cases [Table3].

Table 1: Assessment of Legibility of prescriptions under review (four point scoring)

<table>
<thead>
<tr>
<th>Score</th>
<th>No. Of Prescriptions (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Illegible( Most/ All words impossible to identify)</td>
<td>0</td>
</tr>
<tr>
<td>2.(Most words illegible; meaning of the whole unclear)</td>
<td>0</td>
</tr>
<tr>
<td>3. Some words illegible, but report can be understood by a clinician</td>
<td>153 (36.4%)</td>
</tr>
<tr>
<td>4. (all words clear)</td>
<td>267 (63.6%)</td>
</tr>
</tbody>
</table>

Table 2: Assessment of Name / formulations / strength / dose of drugs identified in prescriptions

<table>
<thead>
<tr>
<th>Parameters assessed</th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spelling of name of medicines</td>
<td>412 (98.1%)</td>
<td>8 (1.9%)</td>
</tr>
<tr>
<td>Formulations mentioned</td>
<td>Mentioned in 412 (98.1%)</td>
<td>Not mentioned in 8 (1.9%)</td>
</tr>
<tr>
<td>Strength of drugs</td>
<td>Mentioned in 412 (98.1%)</td>
<td>Not mentioned in 8 (1.9%)</td>
</tr>
<tr>
<td>Dose of drug</td>
<td>Not used in 63 (15%)</td>
<td>Used in 357 (85%)</td>
</tr>
</tbody>
</table>

Table 3: Assessment of Name / formulations / strength / dose of drugs identified in prescriptions

<table>
<thead>
<tr>
<th>Parameters assessed</th>
<th>used</th>
<th>Not used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archaic terminologies</td>
<td>Not used in 63 (15%)</td>
<td>Used in 357 (85%)</td>
</tr>
<tr>
<td>Leading zero</td>
<td>Used in 21 (81%)</td>
<td>Not used in 5 (19%)</td>
</tr>
<tr>
<td>Capital letter</td>
<td>Used in 43 (10.2%)</td>
<td>Not used in 377 (89.8%)</td>
</tr>
</tbody>
</table>

DISCUSSION:

Illegible prescriptions are one of the most important reasons for inefficient or faulty communications, medication errors and patient harm. Thus it creates legal issues. Though studies have revealed that hand-writing of doctors was not less legible than other professionals, Lyons R et al 1998 found that hand-writing of doctors when compared to other healthcare professionals and administrators and was found to be the worst of all. Bed Head Ticket (BHT) is taken to be any document written by a clinician that included the patients name, age, sex, medical condition and reason for admission. In this BHT in-charge of the particular unit issues a prescription for the particular patient which is equivalent to the prescription of the out-patient department.

In this study, the BHTs of patients admitted in Medicine ward of a tertiary care teaching hospital was evaluated and results were compared with other studies where hand-written medication orders and prescriptions/case-notes of indoor and outdoor patients were evaluated. It was found that in 36.4% of prescriptions, some words were illegible and scored 3. In two other studies where medication orders of indoor patients (n=176) and case notes (n=117) were evaluated, respectively 20% and 15% were illegible and scored 1 or 2. In studies, where out-patient progress notes (n=50) and out-patient prescriptions (n=120) were assessed respectively 6% and 6.6% of prescriptions were found to be illegible and scored 1 or 2. In another study, where both inpatient orders and outpatient prescriptions were evaluated, revealed that 10% of inpatient orders and 15% of outpatient orders were illegible. In this study, spellings of name of medicines were correct in 98.1% of prescriptions which was comparable to the study where out-patient prescriptions were assessed and spellings of name of medicines were found to be correct in all prescriptions. In this study, dosage form and formulations were not mentioned in 1.9% of cases. Other studies revealed that formulations and strength of drugs were not mentioned in 4.2% and 5% of cases and prescribers used wrong drug name and dosage form in 11.4% cases. Two important factors which affect the accuracy of prescriptions and causes confusion and misinterpretation of prescriptions are: use of archaic terminologies, omission of leading zero. Use of capital letter also reduces confusion, improves legibility and eliminates misinterpretation of prescriptions. In this study, archaic terminology was used in 85% of BHTs, capital
letter was used in 10.2% of BHTs and leading zero was not used in 19% of cases. In one study where out-patient prescriptions were assessed, revealed that 60% prescribers used archaic terminology, capital letter was used in 6.6% of prescriptions and leading zero was not used in 15.4% of prescriptions.[12]

CONCLUSION:
Properly written prescription is the key to rational use of medicines. The results of this study indicate that even in a tertiary care teaching hospital, a significant number of prescriptions in BHTs lack adequate features of legibility and accuracy. The quality of indoor prescriptions may be improved by generating awareness among prescribers and taking simple measures like using capital letters, avoiding the use of archaic terminology and writing the correct name, formulations, strength and dose of medicines. Use of computers in prescription writing would also benefit the aspects of legibility of prescriptions.

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REFERENCES: