RISKS IN MEDICATION RECONCILIATION DURING HOSPITAL ADMISSION

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PS-003

INTRODUCTION

Medication reconciliation may be defined as "the formal process of checking the full, accurate list of a patient's previous medication and comparing it with the medication prescriptions after a transition of care." ¹ After undergoing medication reconciliation, the amount of errors decreases and hence there would be better management of resources due to less readmission of patients to hospital. ² Since medications usually change on admission, medication reconciliation and pharmacist intervention are relevant criteria to reduce medication errors. ³ Risk assessment plays an important role in prioritising the attention patients require according to the severity of consequences a possible risk might bring.

AIMS

- To observe the intervention of the pharmacist in patient history-taking and whether the pharmacist is better suited to take medication history than other healthcare professionals.
- To carry out medication reconciliation between the medication history obtained by the pharmacist and by the other healthcare professional to identify any changes in the medications patients take.
- To analyse clinical significance of discrepancies using risk matrices in order to determine the severity of consequences the patient could have undergone.

METHOD

The Setting

- Two institutions were chosen for the study.
- Institution 1: Four consultant physicians were chosen (two medical and two surgical)
- Institution 2: One consultant physician was chosen (medical).
- Twenty patients from each consultant were interviewed.

Data Collection Forms

 A form was developed to collect detailed information about the health status of the patients and the medications they take.

 A second form was designed to document discrepancies between medication histories and to classify them according to omissions, incorrect dose, therapeutic duplication, and more.

Ethics Approval

- Signed consent was obtained from the consultant physicians where the studies took place.
- Inclusion criteria required that the patient is over 18 years of age and admitted in the past 24-48 hours.
- Patients were excluded if they had cognitive or verbal impairment.
- Ethics approval was granted.

Patient Recruitment

- Patients were asked for written consent and then the researcher obtained the Best Possible Medication History (BPMH) in the form of an interview.
- The researcher used other sources to obtain the medication history, for example, talking to the patient's relatives, as necessary.

Medication Reconciliation

The BPMH obtained by the pharmacist researcher was compared with the medication history obtained by the healthcare professional on admission.

 The discrepancies noted were grouped into similar types and given to the consultant physician using the form developed to document interventions, where necessary.

Risk Assessment

- Risk analysis was conducted using risk matrices which helped to analyse the severity of consequence and likelihood of the discrepancies.
- Risk analysis was carried out by an expert panel consisting of pharmacists and physicians.
- The risk score obtained from the risk matrices helped categorise risks into low, medium or high. A risk obtaining a high score would require immediate attention.

RESULTS

• 100 patients had their medication histories taken, 66 patients were male and 34 were female, having a mean age of 62 years. The average duration of the interview for medication history-taking was 14 minutes. Figure 1: Number of Medications identified by the Pharmacist and by the

Non– Pharmacist (n=100)



- Total number of medications identified was 649 medications (average 6.5 medications per patient). Patients make use of chronic medications the most, which had a leading frequency of 408 medications. This was followed by the 'other medications' group, with 87 medications. This group incorporates medications which do not have an oral route of administration, for example, injections, eye drops, creams.
- The pharmacist identified more medications than the non-pharmacist from each medication group (17% more overall). (Figure 1)
- With regards to discrepancies between medication histories, 124 discrepancies were found in 100 patients. The most common discrepancy was omission, making up 90% of all discrepancies (Figure 2).
- A statistically significant correlation was found between the number of medications patients take and the number of discrepancies found in each patient (p-value = 0.043).
- Out of 100 patients, 15 patients were chosen in order to rate their discrepancies, this amounting to 55 risk matrices. A Shapiro-Wilk test was carried out on each risk factor obtained from risk matrices, followed by an independent t-test or a Mann-Whitney test as appropriate. Pharmacists and physicians making up the expert panel agreed on all risk matrices except for 3, with regards to severity of outcomes. When taking the average of all risk scores obtained from all the 9 experts for the 55 risk matrices, none of the risk scores had an average that obtained a high risk score, that is, requiring immediate attention.





CONCLUSION

The BPMH was achieved by consulting more than one source to obtain medication history in 57% of patients. Discrepancies between the two medication histories amounted to 124 in 100 medication histories compared, which is reflected in other studies.^{4,5} More detailed medication histories together with discrepancies identified and more identification of medications taken by each patient leads to the fact that the pharmacist is the best healthcare professional to take medication histories, having invested more time during interviews and to double-check data. Risk matrices are a relatively new concept in healthcare, however they have been a useful tool in analysing the relative risk of each discrepancy. The risk score obtained from each discrepancy indicates the severity of the discrepancy. The fact that the physicians and pharmacists agreed with regards to severity indicates that a multidisciplinary team approach could be implemented with acceptable results since the same patients can be prioritised. Subjectivity was the most significant drawback of using risk matrices, since the specific consequences of the discrepancy were not suggested, meaning that the rating could have been given with different consequences in mind.

In conclusion, pharmacists are better suited to obtain the best possible medication history, since the pharmacist identified 17% more medications than the other healthcare professionals. Whilst assessing the risk of the discrepancies found, some were rated by the experts as requiring immediate attention or further investigations. Therefore, even though somewhat novel to the medical world, the risk assessment exercise plays an important role in prioritising which discrepancies required the most attention and highlighted that medication reconciliation is a crucial exercise in any healthcare setting since it is able to detect discrepancies and evade serious medication errors.

References

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