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Exploring the impact of pharmacist-led feedback on prescribing behaviour: A qualitative study

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ABSTRACT

Background: Prescribing errors occur frequently in hospital settings. Interventions to influence prescribing behaviour are needed with feedback one potential intervention to improve prescribing practice. Doctors have reported a lack of feedback on their prescribing previously whilst the literature exploring the impact of feedback on prescribing behaviour is limited.
Objectives: To explore the impact of pharmacist-led feedback on prescribing behaviour.
Methods: Semi-structured interviews were conducted with doctors who had received prescribing error feedback. A topic guide was used to explore the type of error and what impact feedback was having on prescribing behaviour. All interviews were transcribed verbatim and analysed thematically using a framework approach.
Results: Twenty-three prescribers were interviewed and 65 errors discussed over 38 interviews. Key themes included; affective behaviour, learning outcome, prescribing behaviour and likelihood of error recurrence. Feedback was educational whilst a range of adaptive prescribing behaviours were also reported. Prescribers were more mindful and engaged with the prescribing process whilst feedback facilitated reflection, increased self-awareness and informed self-regulation. Greater information and feedback-seeking behaviours were reported whilst prescribers also reported greater situational awareness, and that they were making fewer prescribing errors following feedback.
Conclusions: Pharmacist-led feedback was perceived to positively influence prescribing behaviour. Reported changes in prescriber behaviour resonate with the non-technical skills (NTS) of prescribing with prescribers adapting their prescribing behaviour depending on the environment and prescribing conditions. A model of prescribing is proposed with NTS activated in response to error provoking conditions. These findings have implications for prescribing education to make it a more contextualised educational process.

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1. Introduction

Prescribing is a complex and high risk task.[1,2] Prevalence studies have reported prescribing error rates of between 2% and 15%[3–6] although this figure may be higher for junior doctors in their first two years of training,[7] who also prescribe the majority of medications in hospital settings.[3] Prescribing errors include errors in the decision making process and the prescription itself[8] and can include incorrect dosing, frequency, quantity, indication, interactions and contraindications, or prescribing for an incorrect patient for example.

Practical prescribing training is perceived to be suboptimal by medical students and junior doctors[9] with dissatisfied feedback from recent medical graduates.[10] Feedback has been described as the "cornerstone of effective clinical teaching"[11] and has advantages for teaching in the clinical environment where prescribers cannot leave the ward area to attend teaching for example. However, prescribers have reported receiving little feedback on their prescribing previously[3,4] with absence of feedback on prescribing errors as missed learning opportunities to learn from error, and to improve prescribing practice. Barriers to delivery or receipt of feedback could include limited opportunity from work pressures,

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shift-work or annual leave, or lack of facilitator training for the effective delivery of feedback.

A recent study[12] reported positive outcomes following a pharmacist-led feedback intervention and described the impact on prescribing behaviour. However, the study was limited to antibiotic prescribing whilst the qualitative study included a limited sample size. Prescribers have reported valuing feedback on their prescribing elsewhere[13] although little is known of the influence of feedback on prescribing a wider range of medications that is typical of hospital prescribing practice.

Prescribing errors reflect a complex interplay of active failures, latent conditions, system failures and error provoking conditions.[14] Active failures are unsafe acts[15] and can be classed as mistakes (knowledge or rule-based), skill-based errors (slip or lapse) or violations.[16] Feedback has the potential to improve prescribing and its influence is likely to vary depending on the type of prescribing error. However, the literature exploring the impact of feedback on prescribing behaviour is limited. An understanding of this could improve patient safety, enhance value from not having to correct errors, and inform future feedback interventions and prescribing pedagogy further. Therefore, the aim of this study was to qualitatively explore the impact of pharmacist-led, prescribing error feedback on prescriber behaviour.

2. Methods

2.1. The intervention

The intervention was designed to reflect principles of effective feedback.[11,17] Feedback was individualised per prescriber and delivered verbally and in writing using standardised proformas by a ward-based pharmacist who worked with the prescriber.[13] Where a prescribing error was identified by a different pharmacist, for example on another ward or in dispensary, details of the error would be passed to the ward-based pharmacist who worked with the prescriber, to deliver feedback.

The facilitating pharmacist used open questions to encourage the prescriber to reflect on the potential risk and reason for the error. The pharmacist would then encourage the prescriber to identify key learning outcomes and actions to reduce error recurrence with pharmacists providing input where needed. The facilitating pharmacist and prescriber would then sign each feedback form with the prescriber also asked to include a reflective statement in their training portfolio.

The need for facilitator training in prescribing error feedback delivery has been reported previously[18] and pharmacists were trained in the delivery of constructive feedback.[11,17,19] Training consisted of a lecture, interactive workshops and reflective and peer-reviewed exercises to support pharmacists in their delivery of feedback.

Pharmacists audited prescribing over a five-day period and then prepared feedback reports for their prescribers on overall prescribing. This was followed with further individualised feedback for any prescribing error classified as significant or greater. Error severity was graded as minor, significant, serious or potentially lethal as defined by research elsewhere,[3] and reflected that used in frequent audits within the study setting by the pharmacy department.

2.2. Data collection

Semi-structured interviews were used with individual prescribers to allow in-depth exploration of the impact of feedback on their prescribing practice. A topic guide (see supplementary material) was used to explore key themes and ensure consistent issues were discussed between interviews. These themes and questions were underpinned by a review of the literature, personal insight of the researcher, previous research[13] and research objectives. The topic guide consisted of two phases. The first phase was based on critical incident theory[20] to inform classification of the prescribing error. This was followed by questions exploring what impact feedback was having on their prescribing and why this was happening.

2.3. Setting

The study was conducted in a large acute hospital in the North-West of England. Interviews were conducted in a private interview room away from the clinical area.

2.4. Ethical considerations

Relevant hospital and University of Liverpool ethics committees approved the study prior to data collection. Interview participation was voluntary and informed consent obtained verbally and in writing prior to commencing each interview. All data were anonymised.

2.5. Sampling and recruitment

Prescribers were eligible to participate if they received feedback from a pharmacist on an individual prescribing error in the previous week. This was to ensure they had sufficient memory recall of the event. Prescribers were recruited by ward-based pharmacists following delivery of feedback on their prescribing. Where prescribers expressed an interest to participate, the researcher followed up with a face-to-face discussion at ward level before arranging a mutually convenient time to conduct the interview. All prescribers (n = 24) who were approached during recruitment expressed an interest to participate.

2.6. Analysis

All interviews were digitally recorded and transcribed verbatim by ML with the sole exception to anonymise person and place names. Prescribing errors were classified according to Reason's error causation model[14] as a knowledge based mistake (KBM), rule based mistake (RBM), slip, lapse or violation. A KBM is due to lack of knowledge of the medication or patient, whilst a RBM is due to misapplication of knowledge.[14–16] A slip is an observable action where a plan is executed incorrectly, whilst a lapse is a failure of memory to perform a particular task, and a violation is where an individual intentionally deviates from best practice.[14–16] Error classification was checked by a second (SDW) and third (SVOB) author for accuracy.

A thematic analysis was undertaken by the researcher (ML) following the framework approach.[21] This involves five stages of familiarisation, identification of a thematic framework, indexing, charting and mapping, and finally, interpretation.[21]

Transcripts were initially coded line-by-line with codes grouped into similar themes to produce an initial thematic framework. Codes were derived initially from the literature review and topic guide with further codes emerging from the data that could not be predicted. Reliability was enhanced by two members (SDW and SVOB) of the research team independently reading and analysing all transcripts. The three authors met regularly to discuss emergent codes and themes. Any discrepancies were resolved by a consensus. The emergent framework was then applied to the transcripts with further refinement of codes and themes through constant comparison, an approach typical of the framework method.[21]