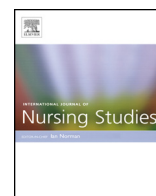




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Review

Factors contributing to Registered Nurse medication administration error: A narrative review

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ABSTRACT

Objective: To explore the factors contributing to Registered Nurse medication administration error behaviour.

Design: A narrative review.

Data sources: Electronic databases (Cochrane, CINAHL, MEDLINE, BNI, EmBase, and PsycINFO) were searched from 1 January 1999 to 31 December 2012 in the English language. 1127 papers were identified and 26 papers were included in the review. Data were extracted by one reviewer and checked by a second reviewer.

Review methods: A thematic analysis and narrative synthesis of the factors contributing to Registered Nurses' medication administration behaviour. Bandura's (1986) theory of reciprocal determinism was used as an organising framework. This theory proposes that there is a reciprocal interplay between the environment, the person and their behaviour. Medication administration error is an outcome of RN behaviour.

Results: The 26 papers reported studies conducted in 4 continents across 11 countries predominantly in North America and Europe, with one multi-national study incorporating 27 countries. Within both the environment and person domain of the reciprocal determinism framework, a number of factors emerged as influencing Registered Nurse medication administration error behaviour. Within the environment domain, two key themes of clinical workload and work setting emerged, and within the person domain the Registered Nurses' characteristics and their lived experience of work emerged as themes. Overall, greater attention has been given to the contribution of the environment domain rather than the person domain as contributing to error, with the literature viewing an error as an event rather than the outcome of behaviour.

Conclusion: The interplay between factors that influence behaviour were poorly accounted for within the selected studies. It is proposed that a shift away from error as an event to a focus on the relationships between the person, the environment and Registered Nurse medication administration behaviour is needed to better understand medication administration error.

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What is already known about the topic?

- Medication error is a major risk to patient safety attracting global attention.
- Medication administration is a key nursing role and a core component of the medication management process.

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- Medication administration error shows no sign of abating despite considerable empirical, policy and professional attention.

What this paper adds

- The framework of reciprocal determinism is applied in this review to comprehensively explore the factors contributing to Registered Nurse medication administration behaviour.
- Within the current medication administration error literature there is a greater focus on the organisation of healthcare to the neglect of Registered Nurse behaviour.
- Medication administration error could be better understood by a clearer focus on the inter-relationships between the individual person, the environment and the behaviour that results in error.

1. Introduction and background

Patient safety is a global healthcare concern (WHO, 2004; The Health Foundation, 2013). Registered Nurses (RNs) as direct providers of care have an integral role in keeping patients safe. Medication error, including medication administration error, is the most frequent cause of preventable morbidity and mortality in hospitals (Adams and Koch, 2010; Cousins et al., 2011). This has therefore been identified as a priority patient safety issue (IoM, 2007) and a central concern for the nursing profession (ICN, 2002; Choo et al., 2010). Recent evidence, however, shows that medication administration error rates remain unacceptably high (AHRQ, 2013; EMA, 2013; NRLS, 2014).

Literature reviews conducted a decade apart reported that similar factors were consistently identified as contributing to RN medication administration error (O'Shea, 1999; Brady et al., 2009). These reviews focused upon the individual and system factors to explain the occurrence of medication administration error events and presented a uni-directional relationship between the contributing factor, or factors, and the error event as proposed by Reason's (1990) explanatory framework. Whilst recognizing that individual clinicians work in complex error-prone circumstances, this approach failed to acknowledge that professional registration demands that RNs are accountable practitioners and thus answerable for their acts and omissions (ICN, 2012; NMC, 2008).

Registered Nurse medication administration behaviour incorporates both the actions that RNs engage in to keep patients safe during medication administration and those that lead to unintended error or violation of recommended behaviours to prevent medication administration errors. Medication administration safety is most usually understood and measured against the five behavioural rights of medication administration (Department of Health, 2004; WHO, 2011). Medication administration behaviour is therefore distinct from the medication administration error itself, with error being the product of the RN behaviour. Exploration of medication administration error as an outcome of human behaviour rather than as an individual event may offer new insights regarding the contributors to medication administration error.

2. Theoretical model

Bandura's (1986) theory of reciprocal determinism acknowledged the mutual relationship that exists between the three domains of environment, person and behaviour. Within this theory behaviour is determined by the individual through cognitive processes and other personal attributes, and by the bi-directional influence of their environment with people as both products and producers of their environment (Bandura, 1986). This creates interactions resulting in a triadic dynamic interplay within the three domains, with different sources of influence acknowledged to be of different strengths and arising at different times. Bandura's (1986) theory has underpinned some studies and its three domains were reflected in the portrayal of safety culture by Cooper (2000). The utility of the theory in extending understanding of RN behaviour has however not previously been explored. This theory provides a framework to understand the contributing factors underlying RN medication administration behaviours which result in medication administration error events; medication administration error events being determined as the product of the reciprocal interplay of the three domains.

3. Method

3.1. Aims and objectives

This review aimed to examine international research relating to the contributing factors to RNs' behaviour that result in a medication administration error event. The research question guiding the review was:

What factors contribute to RN behaviour in medication administration error?

3.2. Search strategy

Six electronic databases (Cochrane, MEDLINE, CINAHL, BNI, Embase, PsycINFO) were systematically searched for papers using facets derived from the following subject headings and key words: Registered Nurse, contributory factors, and medication (administration) error. The search was limited to English language journals published between January 1999, an influential year in the patient safety movement (IoM, 1999; Department of Health, 2000), and December 2012. No relevant reviews were located within the Cochrane database. Due to the volume of literature obtained and the varied limits available within the chosen databases, advice was sought from an information subject specialist regarding applying further limits to the search. The addition of the term 'research' plus its derivatives as a fourth component to the search was recommended and applied.

3.3. Treatment of results

A search of the databases identified 1127 results, with most being located through CINAHL. Following the removal of duplicates the remaining items were assessed

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