



Cochrane Nursing Care Field (CNCF) – Cochrane Review Summary

Interventions to improve the appropriate use of polypharmacy for older people: A Cochrane review summary

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1. Background

'Polypharmacy' refers to the use of multiple medications by an individual (King's Fund, 2013). The term, however, does not indicate if a medicine is safe or suitable for a particular individual. It is therefore important to also consider if polypharmacy is 'appropriate' (e.g. where medicine use has been optimised and prescribing is in accordance with best evidence) or 'inappropriate' (e.g. prescribing of multiple medications inappropriately, or where the intended benefit of the medication is not realised) (King's Fund, 2013; Masnoon et al., 2017). Polypharmacy has been associated with increased risk of hospitalisation, institutionalisation and death in older people (Franchi et al., 2016).

All nurses have a role in ensuring patient safety and quality of care through risk assessment, advocacy and good communication with patients and healthcare colleagues (ICN, 2012). Thus, it is important that nurses address polypharmacy, particularly in older patients, who have an increased likelihood of multi-morbidity (defined as two or more chronic conditions) (Mannucci et al., 2018) which can lead to a greater risk of drug-drug interactions and adverse drug reactions (Rodrigues and Oliveira, 2016).

2. Objective/s

The purpose of this updated Cochrane systematic review was to consider the effectiveness of interventions to ensure appropriate polypharmacy and reduce medication-related problems for older people.

3. Intervention/methods

Studies included in this review focussed on participants who were aged over 65, who had more than one long-term health condition and were in receipt of more than four long-term prescribed medicines. This review considered any type of relevant intervention (classified using the EPOC (2015) Taxonomy of Health System Interventions). For example, polypharmacy interventions

targeting changes in how healthcare professionals or health care organisations: deliver, finance, implement and/or organise prescription drug-management. Reviewed interventions could involve one aspect of polypharmacy management or many.

The reviewers wanted to discover how the intervention impacted medication appropriateness, potentially inappropriate medications, prescribing omissions (measured using validated tools) and hospital admissions. Information about medication-related problems (e.g. adverse drug reactions or drug-drug interactions), adherence to medication and quality of life, was also sought. All types of intervention studies were eligible for inclusion including, trials (randomised, cluster-randomised and non-randomised), 'Controlled Before-After' and 'Interrupted Time Series' designs. All studies included in this review were assessed for bias and certainty of results (GRADE).

4. Results

Thirty-two studies (28 were randomised or cluster randomised trials) were included in this review. The studies compared polypharmacy interventions (changes to healthcare delivery or implementation or delivery and implementation) with usual care across a number of settings including hospitals (n = 16), primary care settings (n = 10) or nursing homes (n = 5). These investigations were conducted in 12 countries and involved 28,672 older people. The results are presented in Table 1.

5. Conclusions

The review authors concluded that there was uncertainty about the effectiveness of all the reviewed interventions in promoting appropriate polypharmacy. For nurses, this uncertainty means that current practice should continue to align with local or national relevant, evidence-based, updated clinical advice such as NICE guidelines, which summarises the evidence-base on multi-morbidity and polypharmacy (NICE, 2018). Research nurses should consider the authors' conclusions regarding the need for more research information about healthcare and patients perceptions and experiences regarding polypharmacy and for better development and reporting of complex interventions in future studies.

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Table 1
Showing results from Rankin et al (2018).

	Results of meta-analysis	Number of studies included in meta-analysis and total sample size (N)	Certainty of results (GRADE)
<i>Primary outcomes</i>			
Medication appropriateness	Mean Difference (MD) –4.76 (95% CI –9.20 to –0.33)	5	Very-low certainty evidence
Potentially inappropriate medications	Standardised mean difference (SMD) –0.22 (95% CI –0.38 to –0.05)	N = 517 7	Very-low certainty evidence
Prescribing omissions	SMD –0.81 (95% CI –0.98 to –0.64)	N = 1832 2	Low certainty evidence
Hospital admissions	Data not pooled due to study differences	N = 569 12 N = 4052	Low certainty evidence
<i>Secondary outcomes</i>			
Medication-related problems	Data not pooled due to study differences	8 N = 10,087	
Adherence to medication	Data not pooled due to study differences	5	
Quality of life	Data not pooled due to study differences	12 N = 3211	Low certainty evidence

6. Implications for practice

This is an important area of practice, with the WHO (2012) producing recommendations for discouraging overuse, underuse and misuse of medicines. One qualitative study has suggested that polypharmacy, in particular, may be influenced by the patient-healthcare professional relationship, patient and/or prescribing complexity (Clyne et al., 2016). NICE (2018) advises using a patient-centred approach and involving patients in decisions about reviewing and de-prescribing their medicines. Thus, nurses can consider adopting patient-centred and integrated-multidisciplinary team approaches when providing medicine-related care.

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