MEdication Management in Older people: Realist Approaches Based on Literature and Evaluation (MEMORABLE): a realist synthesis

Ian Maidment[1*], Sally Lawson[2], Geoff Wong[3], Andrew Booth[4], Anne Watson[5], Jane McKeown[6], Hadar Zaman[7], Judy Mullan[8], Sylvia Bailey[9]

*Corresponding author: i.maidment@aston.ac.uk

[1]School of Health and Life Science, Aston University, Birmingham, B4 7ET, UK

[2] School of Health and Life Science, Aston University, Birmingham, B4 7ET, UK

[3] Nuffield Department of Primary Care Health Sciences, University of Oxford, Oxford, OX2 6GG, UK

[4] School of Health and Related Research (ScHARR), University of Sheffield, Regent Court, 30 Regent Street, Sheffield, S1 4DA, UK

[5] Medicines Management Department, West Heath Hospital, Birmingham Community Healthcare NHS Trust, Rednal Road, West Heath, B38 8HR, UK

[6] Sheffield Health and Social Care NHS Foundation Trust, Fulwood House, Old Fulwood Road, Sheffield, S10 3TH, UK

[7] Bradford School of Pharmacy, School of Life Sciences, N8 Richmond Building, University of Bradford, Richmond Road, Bradford, BD7 1DP, UK

[8]Australian Health Services Research Institute (AHSRI), iC Enterprise 1, Innovation Campus, University of Wollongong, WOLLONGONG NSW 2522

[9] PPI representative, School of Health and Life Science, Aston University, Birmingham, B4 7ET, UK.

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Committee A. Andrew Booth holds several NIHR Committee Memberships including the NIHR HS&DR Funding Committee, Systematic Reviews Programme Advisory Group and the Complex Reviews Advisory Group. He is also co-director of the NIHR HS&DR Evidence Synthesis Centre and a newly awarded NIHR PHR Evidence Synthesis Centre. Sylvia Bailey is a member of Pharmacy Research UK Scientific Advisory Panel.

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SCIENTIFIC SUMMARY

Background

The number and proportion of older people in the United Kingdom (UK) population is rapidly increasing. Many older people live with more than one long term health condition. Living with multi-morbidity can significantly reduce an older person's quality of life. Older people also spend increasing amounts of their time engaging with a range of separate health and care services.

Older people are taking increasing numbers of medications to treat multi-morbidity. Medication related adverse events, across all age groups, have been estimated to be responsible for 5,700 deaths and cost the UK £750 million annually. The burdens and risks from medication fall disproportionately on older people. There are also burdens and risks for informal carers, and health and care practitioners.

Overall, there are immediate, significant, growing and complex challenges from multi-morbidity, polypharmacy and medication management for older people, informal carers, and health and care practitioners and services, making it an increasingly important personal, health and care issue.

Aim and Objectives

MEMORABLE, MEdication Management in Older people: Realist Approaches Based on Literature and Evaluation, seeks to understand how medication management works and to propose interventions that would contribute to improvements:

Aim

To use realist synthesis including primary data collection to develop a framework for a novel multi-disciplinary, multi-agency intervention(s), to improve medication management in older people on complex medication regimens resident in the community.

Objectives

The aim for MEMORABLE was underpinned by three linked objectives. The second and third objectives, were closely related. Objective two focussed on the key principles and underlying mechanisms, whereas objective three focussed on developing an applied intervention.

1. To understand how and why any potentially relevant interventions, to optimise medication management, work (or do not work) for particular groups of older people in certain circumstances.

2. To synthesize the findings from objective 1 into a realist programme theory of an intervention(s) to support older people living in the community manage their medication.

3. To use realist programme theory developed from objective 2 to inform the development of an intervention(s) to assist older people living in the community to manage their medication.

Methods

With a robust research structure involving a Project Group, Stakeholder Group and Research Team, with Patient and Public Involvement, MEMORABLE aimed to establish a causal understanding of medication management using a realist approach: what works, for whom, why and in which circumstances.

MEMORABLE was informed by RAMESES (Realist And Meta-narrative Evidence Syntheses: Evolving Standards) guidelines and contained three work packages: Work Package 1: Realist Synthesis of the literature (understanding contexts and mechanisms)**;** Work Package 2: Realist Evaluation of experiential narratives (exploring mechanisms)**;** and Work Package 3: Developing a framework for intervention(s) and dissemination.

Work Package 1 involved a systematic search and review of the literature, using realist approaches. 1018 articles were identified. Abstracts were screened from which 140 full text articles were selected for review based on their descriptions of medication management. From that number, 24 articles were finally reviewed because of their explanatory focus, based on key terms such as 'concept' or 'framework'. This work package generated the evidence base that supported the understanding of medication management as a five stage process, accommodating multiple perspectives, with reviewing/reconciling medications as a key stage within it.

Work Package 2 involved 50 interviews in total; older people (n=13), informal carers (n=16) and health and care practitioners (n=21). This package provided rich, causal accounts of the way medication management was experienced in people's day-to-day lives.

Work Package 3 involved the synthesis of evidence and experiential data from Work Packages 1 and 2 to explore medication management as a complex intervention, as an implementation process and through the experience of burden. Causal explanations of medication management and reviewing/reconciling medications were generated through context, mechanism, outcome (CMO) configurations and applying Normalisation Process Theory (NPT). Finally, subsets of CMO configurations were used to explain reviewing/reconciling as a key stage, and to generate two

proposed interventions to improve medication management: risk identification and individualised information.

Results

Using the methods summarised above, MEMORABLE produced the following findings.

Medication management as good practice: as background, MEMORABLE scoped medication management, reviewing medications and reconciling medications as good practice, drawing on policy and guidelines. This scoping described tasks associated with good practice, but lacked causal explanation of how these tasks might work to have an impact. MEMORABLE went on to address this explanatory gap.

Medication management as a complex intervention: MEMORABLE set out medication management as a complex intervention that occurs as a five stage process: Stage 1: Identifying problem; Stage 2: Getting diagnosis and/or medications; Stage 3: Starting, changing or stopping medications; Stage 4: Continuing to take medications; and Stage 5: Reviewing / reconciling medications.

These five stages fall into two broad groups based on who is doing what within them:

- first, by the *individual work* done by older people where they are making decisions and acting on their own or with an informal carer (Stages 1, 3 and 4). In these stages, older people and informal carers, where they are involved, develop routines to effectively manage and feel in control of their medication on a day-to-day basis; and
- second, by the *interpersonal work* older people do with practitioners, with or without an informal carer (Stages 2 and 5). These stages are associated with shared decision making. Importantly, the work done in these stages informs older people's and informal carers' decisions and actions at home.

All five stages are linked horizontally as a process, but have loops from one stage to another; two medication loops and one diagnostic loop. An example of a medication loop is where an older person needs to make adjustments in Stage 3 following changes to their medication in a Stage 5 review, such as starting some new tablets while stopping others.

Medication management as implementation: informed by NPT, the medication management process was interpreted through the cycles of work conducted in each stage and across stages: sense making, relationships, action and reflection/monitoring. This interpretation captures the vertical processes in each stage as well as contributing to understanding how work evolves over time, such as the way

sense making or relationships develop as medication is managed as older people's long-term conditions progress.

Medication management as burden: in response to themes emerging from the data, MEMORABLE conceptualised 'burden' as a potential mechanism of interest in medication management to inform further analysis, considering it in detail for Stage 5: Reviewing / reconciling medications.

Stage 5: Reviewing / reconciling medications and burden: using this key interpersonal stage as an exemplar, five burdens were identified. These burdens were then linked to the appropriate NPT step in that stage of the medication management process to demonstrate where and how burden might be mitigated through different types of work carried out by those involved:

- the **ambiguity burden** about reviewing / reconciling medications within medication management: this involves sense making by clarifying the purpose and content of medication reviews and reconciliations;
- the **concealment burden** due to a lack of information giving; this prevents older people and informal carers from understanding, personalising and using what they want or need to know: this is also about sense making and establishing meaning through information to increase personal efficacy, agency and control;
- the **unfamiliarity burden** arising from not seeing the same practitioner consistently: this is about establishing continuity and mutual trust in relationships as the foundations for interpersonal work;
- the **fragmentation burden** limits the way older people and informal carers are understood and their needs addressed as a whole when they are seen across a range of services: this is about the importance of inter and intra-agency collaboration in strategic and operational networks; and
- the **exclusion burden** when older people and informal carers are not recognised for their experience and expertise, nor fully or effectively engaged in decisions that affect their health and care: this is about action and enacting collaboration through shared decision making.

Proposed interventions: risk identification, individualised information: findings from MEMORABLE include two proposed interventions to improve medication management:

- **risk identification:** a simple way of identifying older people and informal carers who are not coping, at risk and who need appropriate help and support through a more detailed follow up such as being fast-tracked to a medication review (Stage 5); and
- **individualised information:** a short, personalised record and reference point, in an accessible format, co-produced and shared by older people, informal carers and practitioners. Rather than focusing on generic advice about a single diagnosis or treatment, information needs to be individualised to enable older people and informal carers manage the impact of their own multi-morbidities and polypharmacy in their day-to-day lives.

Conclusions

Using this realist approach, MEMORABLE set out the way medication management was understood as a good practice, as a complex intervention, as implementation and as burden.

Within the medication management process, reviewing / reconciling medications was scoped as good practice. More in-depth analysis of this stage enabled dimensions of burden to be better understood, identifying five types: ambiguity, concealment, unfamiliarity, fragmentation and exclusion. This focus highlighted the way reviewing / reconciling medications might contribute to burden mitigation in the way that older people, informal carers and practitioners relate, make sense and carry out actions within this stage, and other linked stages.

Recommendations for future research from MEMORABLE include studies to develop and trial the proposed interventions: risk identification and individualised information; studies to extend the understanding of medication management as a complex intervention and as implementation, linked to burden mitigation; and, a study to clarify the outcomes that older people, informal carers and practitioners want from medication management.

Study registration:

This study is registered as PROSPERO 2016:CRD42016043506.

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