

BMJ Open Self-management interventions among community-dwelling older adults with type 2 diabetes mellitus: a scoping review protocol

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ABSTRACT

Background Globally, the number of older adults is increasing rapidly; simultaneously, there is an epidemiological shift toward chronic diseases. One such chronic disease is type 2 diabetes mellitus (DM) which is caused either by the inability to produce insulin or due to the ineffective use of insulin. In recent years, self-management programmes for chronic conditions have gained importance, especially among occupational therapists. Though there is an increasing focus on 'self-management interventions' among older adults, there is still a lack of such interventions for older adults with type 2 DM in low- or middle-income countries (LMICs).

Objectives Summarise the existing literature on self-management intervention programmes for community-dwelling older adults with type 2 DM; identify the principles, practices and criteria that define a self-management intervention programme for community-dwelling older adults with type 2 DM in LMICs.

Methods This present study will be a scoping review, combining quantitative and qualitative literature with a parallel results convergent synthesis design. The synthesis applies to analysing existing principles and practices that influence the selection and application of 'diabetes self-management intervention' among older adults in community settings with type 2 DM in LMICs.

Ethics and dissemination As a secondary analysis, this scoping review does not require ethics approval. The final review results will be submitted for publication in a peer-reviewed journal in the rehabilitation, diabetes, occupational therapy or health promotion-related fields. Other dissemination strategies may be an oral presentation at international conferences or through various social media networks.

INTRODUCTION

Globally, the number of older adults is increasing rapidly; simultaneously, there is an epidemiological shift toward chronic diseases. These diseases usually have extended periods and result from hereditary, physiological, ecological and behavioural factors.¹ One such chronic disease is type 2 diabetes mellitus (DM) which is caused either by the inability to

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This scoping review will follow the Joanna Briggs Institute's methods and undertake a comprehensive database and additional resources search, such as searching for reference checking of the included studies.
- ⇒ The study will include, analyse and present quantitative and qualitative research results related to self-management intervention programmes.
- ⇒ Being a scoping review, assessing the quality of the published studies included in the review may not be feasible.

produce insulin or due to the ineffective use of insulin.²

The global prevalence of DM is projected to increase to 10.2% by 2030 and 10.9% by 2045 with nearly 50.1% of people living with diabetes being undiagnosed.³ The prevalence of DM in India's urban and rural areas has increased significantly over the years with 15.0% to 19.0% in urban areas and from 2.4% to 3.3% in rural areas during 2015–2019.^{4–6} In 2019, India had the second-highest prevalence of diabetes globally with 77 million diabetic adults and the number of affected individuals is rapidly increasing.³ The prevalence of DM in India is estimated to be 16.1% with 27.5% of them being aware, 21.5% receiving treatment and 7% having their glucose levels in control.⁶

The prevalence of type 2 DM is increasing among older adults with more than half of them being prediabetics which leads to various functional impairments and comorbidities.^{7–8} It has increased significantly in nearly all countries and may be considered an epidemic.⁹ Globally, it was estimated that 19.3% of older adults aged 65 years and above live with DM. Further, as projected, the number of older adults with diabetes will reach 195.2 million by



2030 and 276.2 million by 2045.³ Older individuals with DM are more likely to have functional decline¹⁰ and decreased quality of life.¹¹ Low disease awareness, financial and social inequality and dependence in old age and less utilisation of public healthcare services amplify the disease burden in this age group.¹² Despite various initiatives by the Indian government, the overall situation demands a combined effort from patients and healthcare workers to manage this disease effectively.¹³

In recent years, self-management programmes for chronic conditions have gained importance, especially among occupational therapists.¹⁴ As type 2DM is a challenging chronic disease to manage, a self-management approach has been identified as one of the core strategies in its management.¹⁵ This approach views the individual as a fundamental component in maintaining health by combining partnerships between patients and professionals to attain effective care.¹⁶ Self-management is the activities that individuals initiate and perform on their behalf in maintaining life, health and well-being and 'developing the skills needed to devise, implement, evaluate and revise an individualised plan for a lifestyle change'.¹⁷ It also refers to 'the active involvement of individuals in various issues associated with their chronic diseases such as management of the symptoms, complications, treatment and modifying one's lifestyle to live with chronic illness'.¹⁸

The self-management intervention approach includes five essential skills: problem-solving, decision-making, resource utilisation, effective communication with healthcare professionals and action planning.¹⁹ The tasks involved in this approach comprise medication compliance, managing one's nutrition and personal care, promoting mental and social health, communicating with healthcare providers and performing activities.²⁰

Changing habits and routines is a complex phenomenon specific to the context and develops with time.²¹ Therefore, healthcare providers must focus on individuals' experiences and empower them to integrate self-management practices into their routines²² with an occupational focus.²³

Study rationale

Occupational therapy professionals focus on an individual's occupation and are significant members of healthcare groups working with individuals with multiple chronic conditions.²⁴ Occupational therapists can assess client factors such as their knowledge, willingness for intervention and ability to engage in health-promoting activities. By doing so, occupational therapists can facilitate their participation in daily activities and occupations. Also, the profession advocates that quality of life can be improved through participation in meaningful occupations or tasks an individual requires or wants to do.²⁰

However, occupational therapists have been rarely recognised as prevention players in the past or present. There is a need for occupational therapists to promote

health and wellness through occupation.²⁵ Pyatak²⁶ suggested that occupational therapy intervention for diabetes self-management can enhance the quality of life by facilitating individuals to adapt self-management skills into daily activities. Considering the profession's comprehensive approach, occupational therapists should actively promote older adults' health while promoting quality of life throughout their lifespan.²⁷ Active client participation throughout life is paramount considering the long duration of illness and functional impairment among individuals with chronic diseases such as diabetes.²⁸ Still, there is a lack of self-management interventions for older adults with type 2DM in low-income or middle-income countries (LMICs).²⁹ Additionally, self-management intervention's long-term effects on occupational performance and quality of life among older adults have been investigated sparsely.³⁰ With this context, the study questions are-

1. What is the existing literature on diabetes self-management programmes for community-dwelling older adults with type 2DM in LMICs?
2. What are the existing principles, practices and criteria of self-management intervention programmes for community-dwelling older adults with type 2DM in LMICs?

The present scoping review is planned to have two objectives, with the first focused on exploring and summarising the global literature on diabetes self-management interventions and the second focused on identifying various principles, practices and criteria related to self-management in LMICs.

METHODS AND ANALYSIS

Protocol design

This study follows a scoping review design, combining quantitative and qualitative literature with a parallel results convergent synthesis design. The synthesis applies to analysing existing principles, practices and criteria that influence the selection and application of 'diabetes self-management intervention' among older adults in community settings with type 2DM in LMICs. This review protocol was prepared following the Joanna Briggs Institute (JBI) scoping review methodology³¹ devised using Arksey and O'Malley framework³² and Levac *et al* framework³³ which was further modified by Peters *et al*.³¹

Box 1 presents the enhanced scoping review framework proposed by Peters *et al*.³¹ Further amendments, if any, in the protocol will be documented with justification in the final review.

Inclusion and exclusion criteria

The eligibility criteria for the scoping review will be based on the 'PCC' or the 'Population-Concept-Context' approach. It will include the type of resource components as presented in [figure 1](#).

Population

The study would include articles that refer to the population of older adults diagnosed with type 2DM residing

Box 1 Enhanced scoping review framework (Peters *et al*, 2015)

- ⇒ Defining and aligning the study objectives
- ⇒ Developing and aligning the inclusion criteria with the objectives and questions of the study
- ⇒ Describing the planned approach to evidence search and selection
- ⇒ Searching for the evidence
- ⇒ Selecting the evidence
- ⇒ Extracting the evidence
- ⇒ Charting the evidence
- ⇒ Summarising the evidence about the different objectives and questions
- ⇒ Consulting of the information scientists or experts (this process should be considered throughout)

in the community, their caregivers and any professionals involved in providing diabetes-related care to these older adults.

For the present study, papers from inception until April 2024 that have included older adults, both men and women, aged 60 years and above and diagnosed with type 2DM will be considered. Additionally, papers that focus on caregivers who are spouses or any family members residing with older adults with type 2DM and aiding them will be included. Also, the focus will be on the papers related to various professionals such as community physicians/nurses and rehabilitation professionals including occupational therapists, physical therapists, community-based workers, social workers and speech and language therapists who usually work in rehabilitation settings and

may have a direct or indirect role in providing care to older adults diagnosed with type 2DM in the community.

Published studies that have included older adults or any other age groups diagnosed with type 1 diabetes or any other chronic conditions such as cancer, cardiovascular disease or chronic obstructive pulmonary disease will be excluded.

Concept

The central concept for this scoping review is the diabetes self-management programmes for older adults diagnosed with type 2DM. For this review, we will focus on diabetes self-management intervention programmes. We will extract evidence related to (1) theoretical principles, practices and criteria that were followed for the development of such self-management intervention programmes and (2) current practices related to the design, development and use of self-management programmes among older adults diagnosed with type 2DM will be charted.

McLean *et al* 2016³⁴ defined self-management as the care taken by individuals toward their health and well-being consisting of the actions they take to (1) lead a healthy lifestyle, (2) meet their social, emotional and psychological needs, (3) care for their long-term condition and (4) prevent further illness. For this review, diabetes self-management is considered as any intervention provided to community-dwelling older adults focusing on education about type 2 DM and awareness toward its self-management, exercises or activities to maintain physical health, mental health and well-being, maintaining participation in various daily life activities, fatigue management and energy conservation, maintaining social and leisure

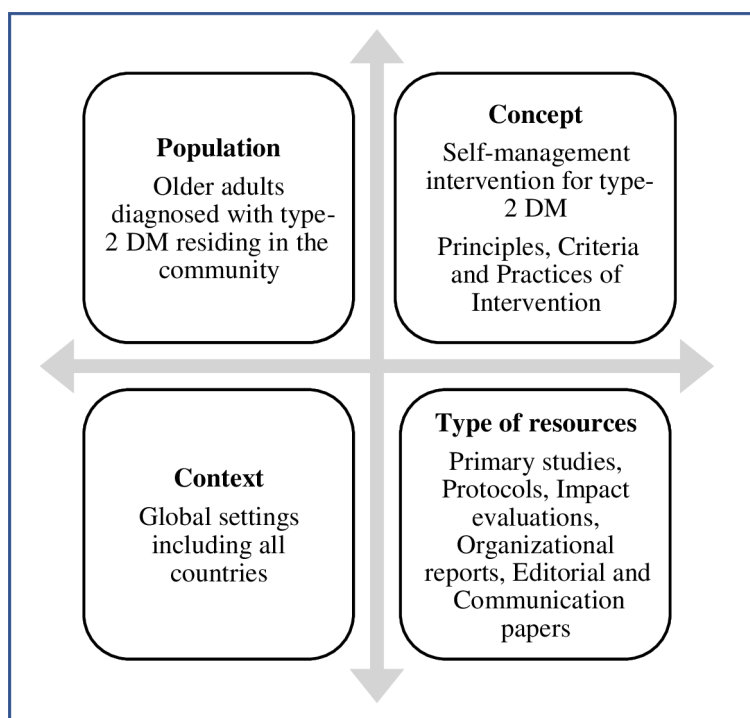


Figure 1 Eligibility criteria. DM, Diabetes Mellitus.

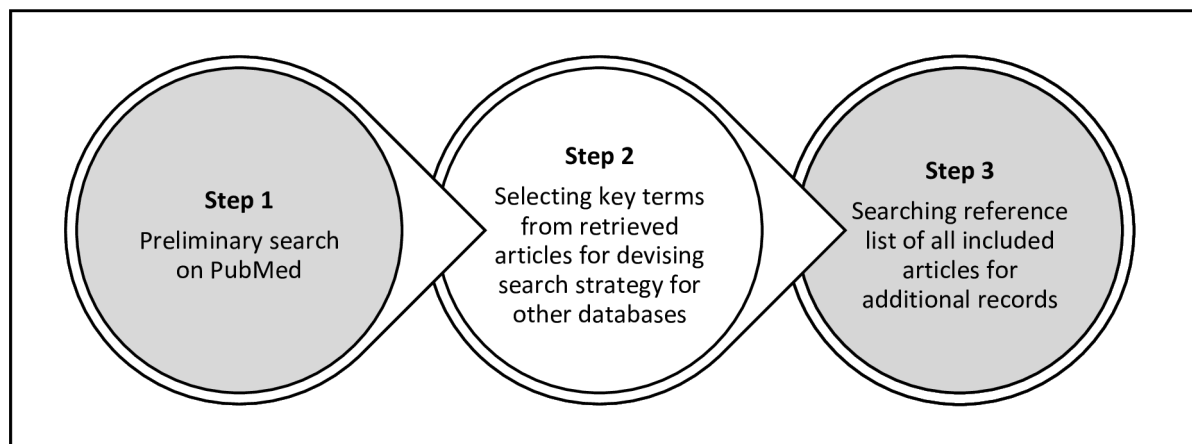


Figure 2 Three-step searching process for the scoping review.

participation, medication management, effective communication strategies, maintaining physical and biochemical parameters, maintaining healthy nutrition and lifestyle. The present study would include all these approaches as part of a self-management intervention that may be delivered across various modes such as in-person or virtual mode, individual or group-based, digital or non-digital mode, home-based or centre-based, peer-led or professional-led.

Regarding the professionals, the outcomes refer to the development, implementation and adherence to diabetes self-management programmes, the use of such interventions in routine clinical practice or any measures of the effectiveness of self-management interventions, strategies or theoretical frameworks used to develop these interventions.

Apart from the outcomes, the review is focused on exploring the factors influencing (ie, variables), strategies followed or practices related to self-management of type 2 DM. These variables may influence the practices as determinants, acting as facilitators or barriers to intervention use.

Context

The setting for this scoping review will be the global literature addressing occupation-centred diabetes

self-management programmes for community-dwelling older adults with type 2 DM.

Type of resources

For this scoping review, we will consider available resources on diabetes self-management programmes such as primary studies, systematic reviews, meta-analyses, mixed-methods studies, opinion articles, editorials and letters. The citation search will be conducted on 1 July 2024.

Search strategy

The search will be based on JBI's three-step search methodology for scoping reviews. In the first step, a preliminary search was conducted in MEDLINE (via PubMed). The retrieved papers were checked and the relevant terms (in the title and abstract of the papers) and the key terms mentioned in the retrieved articles were used to build the search strategy for searching in other relevant databases such as EBSCO, CINAHL, Wiley Online, Cochrane Library, Scopus, ProQuest and Web of Science. The search strategy used for PubMed is given in the online supplemental file 1. In the third step, the reference list of all the identified articles will be searched for additional studies. Authors of the studies/reports will be contacted if we need additional information on any article. We will

Table 1 Data extraction or charting table

SI no.	Details	Information
1	Bibliographical details	Author, year of publication
2	Study details	Objectives of the study, methodology (design, type of analysis, etc)
3	Geographical location	Country of origin, location
4	Population characteristics	Number, age, gender, socioeconomic and health status, etc
5	Intervention details	Information about the self-management intervention programmes and the outcomes addressed
6	Outcome of intervention	Results of the study (quantitative and qualitative)
7	Other findings relevant to the review question	Type of evidence, gaps in research knowledge

Table 2 Details of the intervention programs from the studies included in the review

Sl. No.	Name of the intervention	Theoretical principles, criteria and practices followed	Characteristics of the intervention including delivery of intervention	Limitations of the intervention
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have no limits or restrictions on the language or publication dates for including papers. There is no requirement for a comparator for any study to be included in this review. The three-step searching process is depicted in [figure 2](#).

Selection of evidence sources and data management

Two independent reviewers will conduct the screenings against the eligibility criteria. For stage 1 screening (titles and abstract screening), two reviewers will perform the independent reviewers' role and a third reviewer will be approached to reach a consensus on the disagreements. At the same time, the third reviewer (not performing the level 1 screening) will decide whether to retain the article if the two level 1 reviewers cannot resolve the disagreement. For the level 2 screening (final eligibility based on full-text review), one reviewer will perform the first independent reviewer role and the other two reviewers will split the second reviewer role. The final included articles after the full-text screening will be available for data extraction. The entire process will be reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow chart. Data will be managed using Rayyan.ai and Zotero software and Microsoft Excel spreadsheets.

Extraction of results

Extraction or charting will be done independently to provide a descriptive and logical summary of the results, aligning with the scoping review's objective. The extraction will be done using a charting table that will consist of bibliographical details such as publication year, journal, keywords, author affiliation and geographic details; study details such as objectives of the study, population characteristics, methodology of the study, details about diabetes self-management intervention, findings relevant to the review question. The charting table will be modified during the review and updated based on the data if required. Charting of the data will be a continuous process and the table will be updated continuously. The preliminary charting format is given in [table 1](#).

Data analysis

This review will follow a parallel result convergent synthesis design in which two independent reviewers will extract quantitative and qualitative data related to the design or implementation of diabetes self-management programmes. Additionally, the same reviewers will extract strategies used to formulate the diabetes self-management programme, implementation process and acceptance of such programme among community-dwelling older and the service providers and caregivers. Later, both the

qualitative and quantitative data will be further analysed and presented separately. The results will then be integrated and interpreted in the discussion. Both qualitative and quantitative papers will be reviewed separately and will be discussed.

Presentation of results

Results for different diabetes self-management intervention programmes will be presented in a table that will give information about the (1) name of the intervention, (2) theoretical principles, criteria and practices followed, (3) characteristics of the intervention including delivery of the intervention and (d) limitations of the intervention as presented in [table 2](#).

Patient and public involvement

The scoping review to follow on this protocol will not require the participation of any patients or the general public.

Ethics and dissemination plan

As a secondary analysis, this scoping review does not require ethics approval. The final review results will be submitted for publication in a peer-reviewed journal in the rehabilitation, diabetes, occupational therapy or health promotion-related fields. Other dissemination strategies may be an oral presentation at international conferences or through various social media networks.

CONCLUSION

The results of this review can inform occupational therapists about various principles and strategies used to develop self-management intervention programmes for community-dwelling older adults diagnosed with type 2 DM.

Contributors All authors have made substantive intellectual contributions to developing this protocol. SM and RSS conceived the idea of this research, followed by a discussion that contributed to finalising the research idea. SM and SB drafted the methodology. Both worked on preparing the draft of this protocol and editing and finalising the manuscript. All three authors reviewed and edited the protocol draft. SM is responsible for the overall content as guarantor.

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