Improving skin health of community-dwelling older people: a scoping review protocol

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ABSTRACT

Introduction Ageing is accompanied by an age-related decrease in mobility or cognitive and sensory functions; in addition, physiological changes in the skin occur with age. Therefore, the skin requires appropriate care and observation in order to prevent or manage a variety of dermatological diseases and conditions, and to prevent or minimise effects on the quality of life. Globally, most older people live at home and, as a result, the need to establish sustainable structures and processes to support and care for people at home for as long as possible has been emphasised. The body of evidence supporting screening, diagnosis and management of skin conditions in older people living at home has not been collated and summarised to date. The aim of this scoping review is to describe and summarise the extent and nature of the available body of evidence in this regard.

Methods and analysis This scoping review will follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews. Eligibility criteria were developed using the Population, Concept and Context framework, and the search will focus on systematic and scoping reviews as well as clinical practice guidelines. Two reviewers will conduct systematic searches, screen and select identified evidence as well as extract and chart data independently. Finally, data will be systematically analysed and summarised descriptively to map existing evidence and identify gaps.

Ethics and dissemination Due to the nature of research, not involving humans or unpublished secondary data, approval of an ethics committee is not required. The dissemination of findings is planned via professional networks and publication in scientific open access journals.

INTRODUCTION

Background and objectives The world’s population is ageing. Increasing life expectancy and decreasing fertility rates are expected to lead to about 16% of the world population being ≥65 years of age by 2050, with the number of people aged ≥65 years being more than twice as high as children under the age of 5 years. By 2050, the proportion of persons aged ≥65 years may reach around 19% in Latin America and the Caribbean, and over 23% in Australia, New Zealand, Eastern and South-Eastern Asia as well as Europe and Northern America.¹ These developments should not only bring to attention a likely increased need for health and long-term care services, but should bring into focus the facilitation and enablement of ‘healthy ageing’, particularly in community-dwelling older people.

Globally, most older people live at home, either independently or with family.² Living in one’s own home and community means living in familiar surroundings without being dependent on institutional structures.³ This may be associated with a sense of autonomy and identity for older people.³ Consequently, the need to establish structures and processes to care for people at home for as long as possible has been emphasised by the WHO.⁵

In 2015, the WHO introduced a public health framework to enable ‘healthy ageing’.⁵ A key concept in this framework is developing and maintaining ‘functional ability’ which was defined as ‘the combination of and interaction of ‘intrinsic capacity’ with the environment a person inhabits’ and ‘the composite of all of the physical and mental capacities that an individual can draw on’. To counteract functional decline and increasing dependency on care, the framework aims to intervene at an early stage to delay, slow down or to some degree reverse these processes.⁶ In addition to ageing-related consequences such as decline in movement, cognitive or...
sensory functions, age-related changes of the skin were also described in the ‘World report on ageing and health’ published by the WHO in 2015. Intrinsic ageing, environmental influences including sun exposure, stressors in the workplace, or personal habits including smoking or hygiene lead to changes in the skin, leaving it more susceptible to disease. Ageing-related skin changes include: thinning of the epidermis; flattening of the dermal–epidermal junction; and decrease of subcutaneous fat, collagen, and elastin fibres in the dermis. The decreasing ability of the skin to nourish and repair itself together with declining sensory perception contribute further to an increased risk of skin damage. Additionally, cutaneous immune function and the skin’s barrier decrease and chemical substances as well as bacteria, viruses and fungi may enter the skin more easily. This may lead to xerosis and benign and malignant neoplasms. Hahnel et al reported that the most common skin conditions in older people were fungal infections, dermatitis, xerosis cutis and benign neoplasms. They also found that the prevalence of pressure injuries ranged from 0.3% in medical practices in the UK to 46% in an institutional long-term care setting in Canada and 22.9% in a home care setting in Italy.

In a home care setting in Germany, Lichterfeld-Kottner et al found that 14.7% (95% CI 12.6% to 17.2%) of older people were affected by incontinence-associated dermatitis (IAD) and 3.6% (95% CI 2.6% to 5.0%) had a pressure injury (category I–IV). Further, in a study investigating the symptom burden of community-dwelling older people in Sweden, 31% of participants reported ‘itching’ and 27% ‘changes in skin’. In the UK, Cowdell et al found that 16.5% of community-dwelling older people had concerns regarding their skin. Moreover, ageing-related skin conditions can affect a person’s quality of life, such as well-being, the perception and interaction within the social environment, and may even lead to withdrawal from social activity.

Besides ageing-related changes, highly prevalent chronic diseases in older people, for example, diabetes mellitus, cardiovascular, kidney, or neurodegenerative diseases and medicines, for example, diuretics, affect the skin. Diabetes mellitus type II affected 22% of people aged 70 years and older worldwide in 2017. Due to diabetic angiopathy and neuropathy, this population is at risk of various cutaneous conditions such as xerosis, fungal and bacterial skin soft tissue infections or foot ulceration. As skin lesions are highly prevalent in diabetics (70.3%; 95% CI: 63% to 76.7%) with cutaneous infections being the most common, skin care and regular skin assessment constitutes an essential part of preventive management in this population.

The progression of common chronic and non-communicable diseases in later life is associated with reduced mobility, incontinence and malnutrition. Immobility, incontinence and malnutrition in turn are major risk factors for pressure injuries or IAD. Thus, the increased risk of skin conditions in older people is a consequence of multiple direct and indirect factors, pathways and interactions (figure 1).

Given the huge impact of skin ageing and associated skin conditions, the question arises as to how skin health can be improved in older people living at home, globally. Since 2017, the WHO has provided evidence-based guidelines on appropriate approaches to detect and to manage declines in physical and mental capacities in older people and to support healthcare providers working in the community and in primary healthcare settings. There is a large body of evidence that reported that preventive and therapeutic strategies improve skin health in secondary or tertiary care settings such as hospitals or long-term care (eg, 22–24).

However, the body of evidence supporting the screening, diagnosis and management of skin conditions at the community and primary care level has not been summarised so far. A scoping review approach is useful to summarise and to examine the extent and nature of a broad and heterogeneous body of evidence and to decide whether systematic reviews are justified. This will help to decide whether and how clinical practice guidelines to promote the skin health of older people living at home may be developed.

This scoping review focuses on the most common skin conditions in older people, including diagnosed

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**Figure 1** Direct and indirect factors that lead to skin conditions in older people. UV, ultraviolet.
skin diseases as well as age-related skin ramifications, which can be prevented and/or managed in self-care or supported by community healthcare workers in the primary care sector. This scoping review will answer the following questions:
1. What are the most frequent skin conditions in older people living in the community?
2. What is the burden of skin conditions in older people in the community setting?
3. What type of evidence exists regarding the effects of screening, risk assessment, diagnosis, prevention and treatment of the most frequent skin conditions in older people living at home?

METHODS
This scoping review will follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews25 and is planned to be conducted between 1 July 2023 and 30 June 2024.

Eligibility criteria
The eligibility criteria are based on the Population, Concept and Context framework26 as follows:
- Population (P): people 65 years and older.
- Concept (C): prevalence, incidence and burden of skin conditions; effects of screening, diagnosis and interventions; and effects of public health strategies to improve skin health.
- Context (C): living at home in the (local) community, including community health or home care or primary care in the context of family, community and home care settings.27 Primary healthcare is defined as care provided ‘as close as feasible to people’s everyday environment’28 and is considered as the first point of contact with the health system.

No language restrictions will be applied; systematic and scoping reviews, and clinical practice guidelines published between 1 January 2010 and 1 July 2023 will be included. The following exclusion criteria will be applied: secondary, tertiary and quaternary care settings (including hospital and institutional long-term care).

Information sources
To identify potentially relevant sources, a systematic search will be conducted in the following databases: Embase and MEDLINE via Ovid, and Epistemonikos. Additionally, the following databases will be searched for grey literature: OpenGrey and Grey Matters: a practical tool for searching health-related grey literature. Results will be exported into EndNote. Reference lists and experts in the field will be consulted to identify additional relevant literature.

Search strategy
A preliminary search was conducted in the databases Embase and MEDLINE via Ovid on 8 November 2022. Titles and abstracts were screened to identify keywords and to build a search strategy. Table 1 presents search terms, which will be used to build the search strategies.

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<th>Table 1</th>
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Table 2 presents the strategy used for the preliminary search.

Selection of sources of evidence
Two reviewers will independently screen titles and abstracts of the exported results in EndNote. Following the proposed reviewing process by Bramer et al.,29 the files will be merged and discrepancies discussed. In the next step, full texts will be compared with eligibility criteria by the two reviewers independently, using the free version of the systematic review assistant Rayyan (https://www.rayyan.ai/). Discrepancies will be discussed; and if needed, a third reviewer will be consulted.

Data charting process
Data will be extracted using a standardised data extraction sheet. A first extraction template was developed by the two reviewers (online supplemental material) and will be updated in an iterative process throughout the data charting process if needed. Extracted data will initially be assigned to one of two groups: (1) epidemiology/impact (including burden and risks) of skin conditions and the most common health issues with skin manifestations/impact on skin health; or (2) skin health interventions (including effects, strategies and outcomes). Within these groups, data will be charted in a matrix of subgroups (eg, in the ‘epidemiology/impact’ group, the subgroups ‘burden of skin conditions’ and ‘burden of health conditions with skin manifestations’).

Synthesis of results
Study characteristics and identified evidence will be presented in tables and narratively. Data will be summarised descriptively to map existing evidence and to identify gaps.

Patient and public involvement
This work will analyse existing research and thus not involve patients or members of public in the design, conduct, reporting or dissemination plans.

ETHICS AND DISSEMINATION
Due to the nature of the research, not involving humans or unpublished secondary data, ethics committee approval is not required. Data from the review process will be available upon request. The findings will be published in scientific open access journals.

IMPLICATIONS
The predicted increase of older people makes it necessary to establish structures and processes to care for people at home and in the community for as long as possible. Considering the large body of evidence regarding preventive and therapeutic strategies to improve skin health in institutional settings such as hospitals or nursing homes, and the impact of skin ageing and associated skin conditions, approaches to improve skin health in older people at a community level are urgently needed. This scoping review will be, to our knowledge, the first to summarise and to map existing evidence regarding screening, diagnosis and management of skin conditions in older people living in the community. This will help to decide whether and how clinical practice guidelines promoting skin health in community-dwelling older people may be developed.

Contributors JK, UB-P and CG proposed the research scope and idea for this scoping review protocol. JK and AF developed the research strategy and methodological process, and drafted the manuscript. UB-P, CG and D-AL critically revised the search strategy and manuscript. All authors approved the final manuscript.

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Competing interests UB-P and JK declare non-financial interests due to unpaid consultancy to ILDS, as well as organisational financial interests due to funding from the ILDS. AF and D-AL declare organisational financial interests due to funding from the ILDS. CG declares organisational financial interests due to funding from the ILDS and Boots No. 7 Company, and personal financial interest due to honoraria from Boots No. 7 Company.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

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REFERENCES


