Effectiveness of nurse-led healthy aging strategies for older adults living in the community: a systematic review protocol

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Review question/objective

The objective of this quantitative systematic review is to identify and synthesize the evidence on the effectiveness of nurse-led healthy aging (HA) strategies for older adults living in the community.  

More specifically, the objectives of this systematic review are to identify and synthesize the evidence on:

1) The effectiveness of health promotion interventions, delivered or co-delivered by a nurse, on HA outcomes such as wellbeing and/or the physical, mental, spiritual and/or social health of older adults living in the community.

2) The effectiveness of primary prevention interventions, delivered or co-delivered by a nurse, on HA outcomes such as wellbeing and/or the physical, mental, spiritual and/or social health of older adults living in the community.

3) The effectiveness of interventions, combining health promotion and primary prevention, delivered or co-delivered by a nurse, on HA outcomes, such as wellbeing and/or the physical, mental, spiritual and/or social health of older adults living in the community.
Background

The world’s rapidly aging population is leading to an ever greater need for financial, human and material resources.² Caring for older adults has become a major focus of public healthcare services. Interest in the processes of HA has gained momentum. Historically, aging was defined according to chronological stages of life. Nowadays, functional definitions of age identify components of successful aging, such as an active engagement in life, optimal cognitive and physical function, and a low risk of disease.³ Although slowing down, both physically and cognitively, defines the process of aging, healthy older people may adapt to the decline and partially compensate it. This allows them to function optimally within their limitations and continue to be physically, cognitively, socially and spiritually active.⁴ HA has been defined as “the process of optimizing opportunities for physical, social and mental health to enable older people to take an active part in society without discrimination and to enjoy an independent and good quality of life”.⁵ Beyond health, quality of life generally represents the distal goal of the process.⁶ However nurses may prefer to work with the concept of wellbeing.⁷ This concept has emerged in an attempt to take into account elements specific to individuals and their social environment in addition to socioeconomic dimensions.⁷ Wellbeing is possible when individuals’ physical, psychological and social resources are sufficient to meet their physical, psychological or social needs.⁸ Population studies have demonstrated significant health gains for people who have adopted lifelong healthy habits including nutrition, exercise and volunteering.⁹,¹⁰ Lifestyle-related functional decline may decrease or even be reversed.¹ Cooking skills among older men living alone.

Nursing interventions focus on health processes involving people, defined as individual, family or community, in their environment,¹⁹ such as helping caregivers to develop the resources needed to maintain their wellbeing, or fostering the development of cooking skills among older men living alone.
Good cooking skills seem to be correlated with better physical health and a more adequate diet among this population.\textsuperscript{20} According to an integrative review of nurses’ role in health promotion,\textsuperscript{21} nurses operate through five major functions: 1) Collaboration, including information sharing and referrals with a multidisciplinary team; 2) Communication, including listening skills, empowering attitudes and decision sharing with the patient; 3) Assessment, including the ability to identify health problems and resources as well as their underlying socio-economic and cultural aspects; 4) Ability to implement, including applying knowledge of health issues and of health promotion theories to nursing practice; and 5) Advocacy, including encouraging patient participation and acting as an intermediary. Nursing theory can inform HA processes such as: 1) Fostering developmental transitions;\textsuperscript{22} 2) Protecting wellbeing from stressors and supporting the development of health protective factors;\textsuperscript{16} or 3) Focusing on developing strengths in aging people and their families to enhance their well-being.\textsuperscript{23,24} Nursing studies have been conducted on topics such as a midlife women’s health assessment clinic,\textsuperscript{25} or the development of a HA model.\textsuperscript{26} A study of a nurse-led health promotion intervention among frail elders, conducted during the 80s, prolonged staying at home and increased survival.\textsuperscript{27} The recent study of three trials of a nurse-led health promotion intervention among frail older adults showed increases in their health-related quality of life.\textsuperscript{28}

Systematic review databases such as Cochrane Central Register of Trials, Best BETS, Campbell Systematic Reviews, JBI Database of Systematic Reviews and Implementation Reports and DARE were examined. However, a preliminary search of literature found no systematic review covered the scope of the present review protocol. Systematic reviews related to specific health behaviors, such as healthy eating,\textsuperscript{29} involvement in primary care,\textsuperscript{30} lifestyle interventions on reducing cardiovascular risks,\textsuperscript{31} medication compliance,\textsuperscript{32,33} increasing physical activity,\textsuperscript{34} and preventing social isolation,\textsuperscript{35} have all been undertaken. Health aging is a recent and encompassing concept, and only one systematic review addressed home-based health promotion for older people by nurses.\textsuperscript{36} It focused on adults over the age of 65 years receiving regular home visits and was somewhat restricted in its scope. Effectiveness outcomes included mortality, health and functional status. Nurse led interventions have become an important component of a sustainable public healthcare system. Therefore, it is highly pertinent and useful to review the literature for indications on the effectiveness of these interventions on HA.

This quantitative systematic review will aim to identify and synthesize the best available evidence on nursing interventions fostering HA. Recommendations derived from this review will contribute to: 1) The inclusion of nursing interventions on HA that have been shown to be effective in public health strategies; 2) Fostering comprehensive HA intervention planning; 3) The dissemination among nurses of information on evidence-based health promotion interventions for HA and, 4) Information for the aging population about nursing interventions which may benefit them.

**Keywords**

Healthy aging; health promotion; nursing; aging; community
Inclusion criteria

Types of participants

This review will consider studies including male and female adults aged 50 or older, living in the community, and irrespective of the nursing care they may otherwise receive, were offered a nursing intervention for HA. In this review, older people with a terminal illness, hospitalized in-patients, people living in nursing or other institutional living facilities, and older adults with impaired cognition, as measured by Mini Mental State examination, that prevents them from taking an active part in society and enjoying independent living will be excluded.4

Types of intervention(s)/phenomena of interest

This review will consider studies that evaluate interventions on HA as defined by the Ottawa charter and delivered or co-delivered by a nurse. To deliver these interventions, the nurse may operate through one or more of her health promotion functions, such as suggesting participation in a ballroom dancing class (collaboration), promoting the use of hearing protection equipment among farmworkers (advocacy) or helping participants to set their own goals (communication), identify their strengths (assessment) and stretch regularly when working on the computer (implementation). Interventions can take place in participants’ homes, community health centers, or other relevant settings. Interventions may include face-to-face delivery, group delivery, tele-nursing or any other relevant method or combination of methods. The interventions may involve one or more sessions and can also vary in duration.

A nurse is a person who is legally licensed and/or registered to practice the full scope of nursing in his or her country. He/she may work in a multidisciplinary team.

In this review, intervention focused on the detection, treatment, or prevention of complications due to health problems or interventions on disease self-management without a health promotion component will be excluded.

Types of outcomes

This review will consider studies that include one or more of the following outcome measures, as defined by the “impact pathway of the health promotion intervention logic model” informed by the “Outcomes of interest to the Cochrane Consumers and Communication Review Group”.

Primary outcomes include: wellbeing that will provide measurements of psychological health, quality of life, activities of daily living, leisure activities, biological parameters of physical health, health-enhancing lifestyle, self-efficacy and other related outcomes.

Secondary outcomes include: 1) Knowledge and understanding; 2) Participant decision-making, including decisions made and satisfaction with decision taken; 3) Evaluation of care, including goal attainment; 4) Social support that will provide measurements of social health; 5) Skills acquisition; 6) Health behavior including adherence to treatment, screening, or vaccination schedule; and 7) Other relevant outcomes.

The term behavior refers not only to directly observable actions but also to the psychological events and feeling states that are only measurable indirectly.40
This review will also consider adverse effect(s) of nursing interventions on HA in the targeted population.


Wellbeing can be measured using Satisfaction with Life Scale.\textsuperscript{41} Quality of life can be measured using the HRQol which may include a measure of spiritual health.\textsuperscript{42} Activities of daily living can be measured using the ADL index.\textsuperscript{43} Leisure activities can be measured using the Leisure Motivation Scale.\textsuperscript{44} Decision made can be represented by a SMART objective.\textsuperscript{45} Goal attainment can be measured using the Goal Attainment Scale.\textsuperscript{46} Other outcomes will be included if they were measured using standardized instruments. In this review, outcomes resulting from Illness or addiction management and prevention of disease complications will be excluded.

\textbf{Types of studies}

The quantitative component of the review will consider for inclusion any experimental study design including randomized controlled trials, non-randomized controlled trials and quasi-experimental before and after studies.

\textbf{Search strategy}

Our search strategy aims to find both published and unpublished studies. A three-step search strategy will be used in this review. An initial limited search of MEDLINE and CINAHL will be followed by an analysis of the words contained in the title, abstract, and index terms used to describe the articles. A second search using all identified keywords and index terms will then be undertaken across all included databases. Residual duplicates will be identified using the EndNote X7\textsuperscript{47} Reference Manager and removed. Thirdly, the reference list of all relevant identified reports and articles will be searched for additional studies. Studies published in any language will be considered for inclusion in this review. Assessment for inclusion of papers in languages other than Romance languages (e.g. Spanish, French, Portuguese, Italian) and Germanic languages (e.g. English, German, Dutch) will be based on the English language abstract available. Relevant studies will be translated in English. The review will consider all published studies from inception, for the purpose of assessing their relevance and methodological quality rather than including a study based on the publication date. The search in CINAHL will be performed to filter out articles also published in PubMed. Individual search strategies will be developed for each database to account for any differences across Thesaurus terminology and indexing. Titles and abstracts of studies retrieved will be assessed for relevance against the inclusion and exclusion criteria. Bibliographic details of the studies will be downloaded or manually entered into the EndNote X7\textsuperscript{47} references management database.

The databases to be searched include:

Australian Clinical Trial Registry (ACTR), CRD Databases (including NHS EED, HTA), CINAHL, Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE, ERIC, Health Source: nursing/academic edition, PsycINFO, TRIP, Medline-PubMed and Web of Science.

The search for unpublished studies will include:
Clinical trial registers, conference proceedings and an internet search on DOAJ, Google, Google Scholar, Mednar, ProQuest Dissertations and Theses, DART-Europe E-theses Portal and WorldCat.

Initial keywords to be used will be:


**Assessment of methodological quality**

Quantitative papers selected for retrieval will be assessed independently by two reviewers for methodological validity prior to inclusion in the review using a standardized critical appraisal instrument from the Joanna Briggs Institute Meta-Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI) (Appendix I). Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer. Studies will be included if there is an agreement that seven out of ten criteria are met, in order to control for methodological diversity. The PRISMA flowchart will illustrate the process of including papers.48

**Data extraction**

Upon agreement between the reviewers, quantitative data will be extracted from papers included in the review using the JBI data extraction form for experimental studies (Appendix II). The data will then be transferred to the standardized data extraction tool from JBI-MAStARI. The data extracted will include specific details about the interventions, populations, study methods and outcomes of significance to the review question and specific objectives. Authors of primary studies will be contacted for missing information or to clarify unclear data.

**Data synthesis**

Quantitative papers will, where possible, be pooled in statistical meta-analysis using the Cochrane Collaboration’s Review Manager.49 All results will be subjected to double data entry. Effect sizes will be expressed as odds ratio (OR) for categorical data and weighted mean differences (MD) for continuous data, and their 95% confidence intervals will be calculated for analysis. Heterogeneity will be assessed statistically using the standard Chi-square test. In the absence of clinical and statistical heterogeneity, a fixed-effect model will be applied to pooled data. In the presence of statistical heterogeneity, a random effects model will be applied for meta-analysis. Subgroup analyses, based on the different quantitative study designs included in this review, will be used to explore variations in treatment effects. Where statistical pooling is not possible, the findings will be presented in narrative form including tables and figures to aid in data presentation where appropriate.

**Conflicts of interest**

The authors declare that there are no conflicts of interest.
References


29. Fletcher A, Rake C. Effectiveness of interventions to promote healthy eating in elderly people living in the community: review. London: London School of Hygiene and Tropical Medicine, 1998.


Available from:
cccrg.cochrane.org/sites/cccrg.cochrane.org/files/uploads/outcomes.pdf


47. EndNote X7 [Computer program]. Thomson Reuters, 2014.


Appendix I: MASTARI appraisal instrument

**JBI Critical Appraisal Checklist for Randomised Control / Pseudo-randomised Trial**

Reviewer: ___________________________ Date: ___________________________

Author: ___________________________ Year: ___________ Record Number: ___________

1. Was the assignment to treatment groups truly random?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐
2. Were participants blinded to treatment allocation?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐
3. Was allocation to treatment groups concealed from the allocator?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐
4. Were the outcomes of people who withdrew described and included in the analysis?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐
5. Were those assessing outcomes blind to the treatment allocation?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐
6. Were the control and treatment groups comparable at entry?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐
7. Were groups treated identically other than for the named interventions?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐
8. Were outcomes measured in the same way for all groups?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐
9. Were outcomes measured in a reliable way?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐
10. Was appropriate statistical analysis used?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐

Overall appraisal:  Include ☐ Exclude ☐ Seek further info. ☐

Comments (Including reason for exclusion)

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Appendix II: MASTARI data extraction instrument for experimental studies

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Study results
(a) Dichotomous data

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(b) Continuous data

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Authors’ conclusions

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Comments

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