Methods to elicit and evaluate the attainment of patient goals in older adults: A scoping review

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ABSTRACT

Objective: This scoping review aimed to identify patient goal elicitation and evaluation methods for older adults, and to investigate which methods can be used in medication optimization interventions for nursing home residents (NHRs).

Methods: The Arksey and O’Malley framework guided the review. A search was launched in PubMed, Embase, CINAHL, and Web of Science. Reference selection and data extraction were performed by three independent reviewers, followed by team discussions to solve discrepancies. Inductive thematic analysis was applied to synthesize the data. Included papers were reconsidered to identify methods for medication optimization interventions for NHRs.

Results: Ninety-six references, encompassing 38 elicitation and 12 evaluation methods, were included. Elicitation methods differed in structure, content, and patient involvement levels. Qualitative and quantitative methods were found to assess goal attainment. Five elicitation and three evaluation methods were developed for NHRs, but none of these contained a medication-related assessment.

Conclusion: A variety of goal elicitation and evaluation methods for older adults was found, but none for medication optimization interventions in NHRs.

Practice implications: A holistic approach seems important to integrate patient goals into medication optimization interventions, not limiting goal elicitation to a medication-related assessment. Also, the choice of assessor seems important to obtain patient goals.

1. Introduction

New challenges in healthcare, such as the rising prevalence of multimorbidity, arise as a result of the ageing population. Multimorbidity often goes hand in hand with polypharmacy, as well as with treatments that do not necessarily match with patients’ priorities, and high treatment burden [1,2].

Person-centered care, defined as care that is guided by individuals’ values and preferences, might hold an answer to the challenge of multimorbidity [3,4]. Person-centered care (PCC) was defined by the American Geriatrics Society Expert Panel (AGSEP) as follows [5]: “Person-centered care means that individuals’ values and preferences are elicited and, once expressed, guide all aspects of their health care, supporting their realistic health and life goals. Person-centered care is achieved through a dynamic relationship among individuals, others who are important to them, and all relevant providers. This collaboration informs decision-making to the extent that the individual desires” (pg 16). Aligning treatment plans with patient goals may hold a new approach to medication optimization interventions. So far, such interventions focus on guideline adherence as a means to reduce inappropriate prescribing, which has been shown to be highly prevalent in older adults, including nursing home residents (NHRs) [6,7]. A person-centered approach may potentially reduce treatment burden and improve quality of life (QoL) of patients through the attainment of their personal goals [8–12].

The implementation of PCC, however, has shown to be challenging. Healthcare professionals (HCPs) struggle to find the right approach to
reconcile their own and their patient’s priorities. They also have strong opinions themselves about what is best for the patient or the NHR [13, 14]. Moreover, earlier research has shown that support is needed to elicit patient goals, since patients do not present these goals spontaneously [15]. Currently, however, there is no overview available of methods or tools that allow the elicitation of patient goals, and certainly not on the integration thereof in a medication optimization intervention. Likewise, it is not yet clear how the attainment of patient goals can be assessed in order to evaluate the impact of PCC enhancing interventions, such as a person-centered medication review. An initial literature search of the Cochrane Database of Systematic Reviews and PubMed in March 2020 confirmed that no reviews related to the topic already existed. In that regard, a scoping review was performed to identify and describe methods, both to elicit patient goals and to evaluate the attainment of these goals, that can be used in interventions in older adults, and more specifically for medication optimization in NHRs.

2. Methods

The review was guided by the methodological framework of Arksey and O’Malley and consisted of six steps: 1) identification of the research question, 2) identification of relevant studies, 3) selection of studies, 4) charting of data, 5) collating, summarizing and reporting of the results, and 6) consultation with experts [16]. The Preferred Reporting Items for Systematic Reviews and Meta-analyses, extension for Scoping Reviews (PRISMA-ScR) was used for reporting the review [17].

As the amount of research on person-centered medication optimization interventions for NHRs is very scarce, the review was not limited to this specific topic. First, relevant papers on the elicitation and evaluation of patient goals in older adults were searched and screened in a broad manner, not focusing solely on medication optimization interventions, nor on NHRs. In a second stage, included papers were reconsidered to identify patient goal elicitation and evaluation methods that can be used in medication optimization interventions for NHRs.

2.1. Inclusion criteria

2.1.1. Type of participants

All studies with older adults with a minimum age of 65 were included. In case the study population included adults younger than 65 years, the paper was only considered if mean or median age (as reported) was 65 years or older.

2.1.2. Concepts

The main concepts that were of interest in this review were person-centered care and the concept of goal-oriented care. To be considered for inclusion, papers had to describe the elicitation approach of patient goals and/or the evaluation of these goals’ attainment.

2.1.3. Context

Only studies conducted in a western country (e.g. Australia, USA, Canada, Western Europe) and focusing on daily care practices (i.e. not on acute situations or settings such as a patient’s resuscitation preference or in the emergency department) were included in the review. No exclusion was performed based on the type of healthcare setting (e.g. home care, primary care, hospital, long-term care), nor on the type of healthcare provider applying the elicitation or evaluation method (i.e. the assessor).

2.1.4. Types of evidence sources

The review focused on primary research sources: study protocols, primary research reports, primary research papers, systematic reviews, narrative reviews and scoping reviews. Opinion papers were excluded.

2.2. Search strategy

PubMed, Embase, CINAHL, and Web of Science were searched for relevant papers, using a search strategy built according to the Participant, Concept, Context (PCC) framework [18, 19]. Index terms and key words were combined by the Boolean operators ‘OR’ and ‘AND’. Context was not part of the search strategy, since any type of healthcare setting was considered for inclusion. The final search strategy for PubMed is shown in Appendix A.

To optimize the search strategy, a preliminary search in PubMed and Embase was performed to identify any additional index terms and key words. Following this, a search across all included databases was executed in July 2020. Papers in English, French and Dutch were considered for inclusion and no timeframe was applied. The authors of potentially relevant papers were contacted when the full-text was unavailable.

Besides database searching, references of (locally developed) methods to elicit and/or evaluate attainment of patient goals of older adults known by the research team were added by means of grey literature.

2.3. Source of evidence selection

A two-stage selection process was performed, supported by the software program Rayyan QCRiO©. First, titles and abstracts were screened, using a checklist based on the formulated inclusion criteria (see Appendix B). Pilot testing of these criteria was performed by three members of the research team (AD, VF, AVH) by means of independently screening 50 titles and abstracts. Subsequently, discrepancies were discussed and modifications were made to the list of criteria. Second, the screening process was continued by three independent reviewers (AD, EM and HVR), using the optimized inclusion criteria. After discussing discrepancies, remaining disagreements were resolved by consulting a fourth reviewer (i.e. VF or AVH) who made the final decision. During the first stage of the screening process, abstracts describing research that was considered potentially relevant to the research questions were included for full text review. However, abstracts for which no full text was available, even after contacting the authors, were excluded in the second stage of the screening process. Finally, the reference lists of the included full text articles were screened for inclusion of additional papers that provided in-depth information on identified methods or that identified new methods.

2.4. Data extraction

The data extraction table was pilot tested by three reviewers (AD, EM and HVR), using three included articles. Finalization of this table occurred during the review process itself. Extracted data included (first) author, year and country of publication, journal of publication, study design, healthcare setting, inclusion and exclusion criteria, number of participants, mean/median age of participants (as reported), name of the method to elicit/evaluate patient goals (if available), description of method, goal elicitation and/or evaluation procedure, method development and extra information thought to be relevant (e.g. users’ experiences, method implementation).

The same reviewers extracted data independently in Excel©, followed by team discussions to solve discrepancies.

2.5. Data synthesis

An inductive thematic analysis was applied to synthesize data from the data extraction table. Themes were derived from the data through team discussion (AD, VF and AVH), and allowed the compilation of a descriptive table, which was completed independently by three members of the research team (AD, EM, HVR). Again, discrepancies were solved through discussion and remaining disagreements were resolved.
by consulting a fourth member (VF or AVH) who made the final decision. During data synthesis, a distinction was made between methods to elicit patient goals and methods to evaluate the attainment of these goals.

2.6. Expert consultation

Four academics with expertise in goal-oriented care or related topics (e.g., patient participation, meaningfulness in life) were invited to discuss study findings to enhance the review’s utility and rigor [20]. The aim of these discussions was to validate the results of the review and to identify remaining knowledge gaps in current literature to feed the review’s discussion.

3. Results

3.1. Study characteristics

In total, 5054 papers were identified through database searches. After removal of duplicates, 2904 records were screened. After screening 408 full texts for relevance, 69 references were included. Reference list screening of the included studies resulted in 25 additional references, providing in-depth information on the identified methods. Furthermore, two more references were added through grey literature, resulting in a total of 96 references. The screening process is presented in Fig. 1.

Publication years of included references ranged from 1968 to 2020, with approximately half of the papers (n = 46) being published from 2015 onwards. Other characteristics of the included references are described in Table 1.

3.2. Elicitation of patient goals

In total, 38 methods were identified to elicit older adults’ goals regarding their healthcare or everyday living. Three main observations were made when analyzing the published methods: 1) different typologies of patient goals, 2) a range of different patient involvement levels during method development and goal elicitation, and 3) a continuum of methods with regard to content and structure. Extensive information on each elicitation method or study reference can be found in Supplementary file S1. A summarizing overview is provided in Table 2, which lists the elicitation methods in alphabetical order. Besides this, we found differences in the type and training of the assessor who facilitated patient goal elicitation.

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Table 1

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Reference(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin of publication</td>
<td>Australia [9,21–24], Belgium [25,26], Canada [27–35], Finland [36–37], France [38], Germany [39–44], Italy [45], New Zealand [46], Norway [47–52], The Netherlands [53–61], UK [62–70], USA [71–114]</td>
</tr>
<tr>
<td>Study design</td>
<td>Method description [69,70], Method description and development [25–28,48,56,62,72,98,113], Method description [65,112], Method description and evaluation [99,101], Method description and application [100,111], Method development [46,48], Method development and evaluation [39,92], Observational study [41,109], Interventional study [74], Method development and application [23,24,31,44,57,66,71–76,78,80,84,89,94,97,100], Observational studies [107], Interventional studies [43], RCT [53], Method evaluation [21,30,33,36,45,73,75,81–83,86,90,91], Meta-analysis [102–104,106,108,110], Systematic review [8,9,37], Observational study [35,49,51,67,79,85,93,96,105,111], Study protocol [29,61,63,64], Method application [95], Descriptive paper [41], Observational study [94], Study protocol [43], Interventional study [74], Non-RCT</td>
</tr>
<tr>
<td>Setting</td>
<td>Community and primary care [8,9,21,22,26,31,35–37,41–43,46,55,56,58–64], Senior centers and nursing homes [72,73,78,79,81–84,87,93–97,100,112,113], Hospital-based [23,25,57,85,86,89–91,99,101–109,114], Disease-specific clinic [39,44,74,77,92], Rehabilitation center [53,54], Combination [24,30,66–68,75,111], Not specified [27,28,32,40,45,69,70,80,98]</td>
</tr>
</tbody>
</table>

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Fig. 1. Flowchart of study screening process.
Table 2
Overview of methods to elicit patient goals in older adults regarding their healthcare or everyday living.

<table>
<thead>
<tr>
<th>Method or reference</th>
<th>Goal typology</th>
<th>Population</th>
<th>Patient involvement in method development</th>
<th>Patient involvement in elicitation process</th>
<th>Content</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy Preference Index (API) [33,71]</td>
<td>IP</td>
<td>-/+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Bangor Goal Setting Interview (BGS) [62-64]</td>
<td>CG</td>
<td>+/-</td>
<td>-</td>
<td>+</td>
<td>+/-</td>
<td></td>
</tr>
<tr>
<td>Because Activities should be Meaningful (BAM) approach</td>
<td>LG</td>
<td>+/+</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>-/+</td>
</tr>
<tr>
<td>Bradley et al. [77]</td>
<td>LG</td>
<td>+/0</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Canadian Occupational Performance Measure (COPM) [21, 27,47,53]</td>
<td>LG</td>
<td>+/-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>CLEVER method [26]</td>
<td>LG</td>
<td>+/-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Client’s Attitude toward Spirituality in Therapy (CAST)</td>
<td>CP</td>
<td>+/-</td>
<td>0</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Control Preferences Scale (CPS) [28,45,74,75]</td>
<td>IP</td>
<td>+/-</td>
<td>0</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Creating better Health Orientation by Improving</td>
<td>CP</td>
<td>+/-</td>
<td>0</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Communication about Exercise experiences (CHOICE) [52]</td>
<td>CP</td>
<td>+/-</td>
<td>0</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Creating better Health Outcomes by Improving</td>
<td>CP</td>
<td>+/-</td>
<td>0</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Dutch Activity Inventory (D-AI) [54,76]</td>
<td>CG</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Guided Care (GC) [55,78]</td>
<td>CP</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>Health Information Wants Questionnaire (HIWQ) [79,82]</td>
<td>IP</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Integrated Systematic Care for Older People (ISCOPE)</td>
<td>CG</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Janssen et al. [39]</td>
<td>CP</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Living with Dysphoria program (LJD) [65]</td>
<td>CG</td>
<td>+/-</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Measure to Identify Meaningful Physical Activities</td>
<td>EP</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>in the Elderly (MIBBO) [57]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicines Conversation Guide (MCG) [9,22,23]</td>
<td>CG</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>National Health and Aging Trends Study (NHATS) – health</td>
<td>IP</td>
<td>+/-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>care decision-making module [63]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome Prioritization Tool (OPT) [40,58,59,84-87]</td>
<td>CP</td>
<td>+/-</td>
<td>0</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Patient-Centered Outcome Questionnaire – Parkinson’s</td>
<td>CP</td>
<td>+/-</td>
<td>0</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Disease (PCOQ-PD) [92]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Generated Index (PGI) [29,66]</td>
<td>CP</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Patient Priorities Care (PPC) [93-96]</td>
<td>CG</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td></td>
</tr>
<tr>
<td>PERSON mnemonic [98]</td>
<td>CG</td>
<td>+/-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td></td>
</tr>
<tr>
<td>Personal Functional Goals Interview (PFGI) [97]</td>
<td>CG</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Personal Project Analysis (PPA) [30,36,37,98]</td>
<td>EP</td>
<td>+/-</td>
<td>0</td>
<td>+</td>
<td>-/-</td>
<td></td>
</tr>
<tr>
<td>PrefCheck program [40-42,55]</td>
<td>EP</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Preference Assessment Tool (PAT) [39-91]</td>
<td>EP</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Preferences for Everyday Living Inventory (PELI)</td>
<td>EP</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Quality of Life Structured Resident Interview (QoL.SRI)</td>
<td>CP</td>
<td>+/-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>revised Patient’s Attitude Towards Deprescribing (rPATD)</td>
<td>IP</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Sage-StAGE+ Service [60]</td>
<td>CG</td>
<td>+/-</td>
<td>0</td>
<td>+/-</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Schedule for Meaning in Life Evaluation (SMILE) [44,110]</td>
<td>EP</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Self-Assessment of Role-performance and activities of</td>
<td>CP</td>
<td>+/-</td>
<td>0</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>daily living Abilities (SARA) [111]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAPiSTRY’s goal setting [31]</td>
<td>CG</td>
<td>+/-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Towards Achievable Realistic Goals in Elderly Tool (TARGET) [46]</td>
<td>CG</td>
<td>+/-</td>
<td>0</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Vitalize 360 [112]</td>
<td>LG</td>
<td>+/-</td>
<td>0</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Western Ontario and McMaster Universities osteoarthritis</td>
<td>EP</td>
<td>+/-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
</tbody>
</table>

Goal typology: ‘IP’ = involvement preferences, ‘CP’ = care preferences, ‘CG’ = goals, ‘EP’ = everyday living preferences, ‘LG’ = life goals; Population: ‘-/+’ = not specifically used with or developed for older adults, ‘+/’ = specifically used with or developed for older adults, ‘+/-’ = specifically used with or developed for nursing home residents.

Patient involvement in method development: ‘0’ = unclear, ‘-’ = not involved, ‘+/’ = involvement after initial development by researchers or experts, ‘+’ = involvement from initial method development onwards.

Patient involvement in elicitation process: ‘-/+’ = involvement after initial assessment by HCP or assessor, ‘+/-’ = involvement from initial assessment onwards.

Content: ‘0’ = unclear, ‘-’ = undefined, ‘-/+’ = semi-defined, ‘+/-’ = defined.

Structure: ‘0’ = unclear, ‘-’ = open, ‘-/+’ = semi-structured, ‘+/-’ = structured; ‘+’ = defined.

 Added by means of grey literature

3.2.1. Different typologies of patient goals

During the analysis, different typologies were noted as to what is being defined as ‘patient goals’. Two main domains can be distinguished with regard to the type of patient goals being elicited by the identified methods: 1) patient preferences, encompassing care preferences, everyday living preferences, and involvement preferences, and 2) patient goals, including healthcare goals and life goals. Elicitation methods investigating patient preferences usually explore the importance that patients allocate to certain activities of daily living, aspects of their healthcare or their involvement in healthcare decision-making in a broad manner. Methods to elicit patient goals, on the other hand, guide the phrasing of specific daily living activities or healthcare outcomes the patient has not yet (fully) attained but wants to work towards. This often involves a prioritization or selection of activities and/or outcomes.
through in-depth exploration.

Eleven methods guide the elicitation of care preferences, including preferences for treatment outcomes and treatment priorities, while 6 focus on everyday living preferences. Sixteen elicitation methods translate patients’ preferences into actual healthcare (n = 12) or life (n = 4) goals. Four of the methods eliciting healthcare goals (i.e. BGSI, PPC, TARGET, and TAPESTRY’s goal setting) use the SMART framework, which stipulates that goals should be formulated Specific, Measurable, Achievable, Realistic, and Time-oriented [70]. A last category includes methods (n = 5) that explore patient preferences towards involvement in decision-making processes: API, CPS, HIWQ, rPATD, and the healthcare decision-making component from the NHATS.

3.2.2. A range of patient involvement levels

With regard to the development of the identified elicitation methods, patient involvement levels differed. For three methods, authors described that patients were not included during the development: the BGSI, ISCOPE program, and LWD program. Information on other methods (n = 12) indicates that they were initially developed by researchers and/or experts and thereafter pilot tested with patients. Examples include the COPM (developed by a professional association based on a review of existing performance measures), GC (developed by researchers based on the Chronic Care Model), and the HIWQ (developed by researchers based on the Health Information Wants Framework and a literature study). Some method developers (n = 11) describe to have taken the patient perspective into account right from the start of the development process, most often by performing a qualitative study to capture patients’ experiences with regard to the focus of the method and subsequently using these findings as a starting point for method development. The CLEVER method, for example, was developed based on in-depth interviews with patients with chronic care needs. Likewise, the PELI was based on focus groups with older adults on psychosocial preferences. A lack of information on the development of several methods (n = 12) prevented judging the level of patient involvement therein.

With regard to the elicitation processes, the level patient of involvement differed as well. While most methods include the patient’s voice from the beginning, some start with an initial patient assessment by one or more HCPs and only thereafter ask the patient about his/her goals or preferences. These methods are GC, the Sage-atAge+ Service, and Vitalize360.

3.2.3. A continuum of methods

Large differences between elicitation methods were noted with regard to their structure and content, ranging from a predefined content and structured elicitation approach to methods with a rather undefined or less specified content and an open elicitation approach (see Fig. 2). Furthermore, methods with semi-defined content and semi-structured approaches were found, as well as methods with a different combination of these two characteristics (e.g. semi-defined content and a structured approach).

Predefined methods assess a fixed number of items, divided into one or more domains. An example of such methods is the OPT in which patients are asked to rate four generic health outcomes on a visual analogue scale (VAS) to indicate what is most important to them. Another example is the PELI, an interview guide that assesses preferences with regard to 72 everyday activities, covering five life domains: self-domination and autonomy, enlisting others in care, leisure and diversionary activities, social contact, and growth activities.

Other methods are characterized by a semi-defined content, assessing patient goals in one or more life domains. The specific content of these domains and thus the focus of the following assessment, however, depends on the input of the patient and/or the assessor. The QoLSRI is an example of such method. The QoLSRI assesses a set of pre-defined items, organized into 12 domains (e.g. comfort, privacy, meaningful activities), and allows to determine the patient’s top five priorities. However, the patient’s input is collected to elicit the ‘what, where, when, and with whom’ of every prioritized item. Furthermore, the use of a ‘wild card’ allows the patient to name a priority that is not included in the pre-defined set of items. This ‘wild card’ option is also provided in the MIBBO. Likewise, the CHOICE allows the patient to name additional preferences and to provide individualized descriptions of predefined items by means of ‘free text’. Patient Priorities Care (PPC) focuses on four life domains (i.e. connecting, enjoying life, functioning, and managing health) and lets the patient define their content. As such, it is another example of a method with a semi-defined content.

Undefined methods allow the patient to fully determine the content of assessment. For example, the FPA and the BAM approach start by broadly exploring what is important to the patient, followed by further eliciting these self-chosen aspects of their life or care.

Methods with a structured elicitation approach include quantitative, qualitative, as well as mixed-methods procedures. The OPT uses a quantitative approach by asking patients to rate several items. A similar quantitative scoring procedure is used in several other methods to identify patients’ preferences, such as the CAST, PAT, PCQ-PD, WOMAC, SMiLE, and the outcome prioritization exercise by Janssen and colleagues. A qualitative structured approach is used in the goal setting component of the BAM approach, CLEVER method, and Health TAPESTRY program. The PELI covers a mixed-methods approach, by firstly asking NHRs to rate every item on a 4-point Likert-scale, ranging from 1 (“very important”) to 4 (“not important at all”), followed by an exploration of items scored as “important” by means of open-ended questions. A similar approach is applied in the D-AI and QoLSRI.

An unstructured and adaptive approach is applied in the PERSON mnemonic, where each letter serves as a reminder for a specific topic to be explored when having a goals of care conversation with a patient. The goal setting taxonomy, defined by Bradley et al., asks a single-open ended question in order to start exploring an older patient’s goals in six domains of their healthcare: safety, independence in day-to-day functioning, social support, caregiver stress, medical issues, and behavioral and emotional issues.

Some methods apply a semi-structured elicitation approach. An example of such a method is PPC, which provides a working document for the patient, that can be completed alone prior to or with support during the discussion with an assessor. Besides this, PPC also provides a manual for the assessor, including examples of questions and care goals to facilitate the goal setting process. Developers of the COPM describe the method as consisting of a semi-structured interview guide, providing another example of a method with a semi-structured elicitation approach.

Multiple papers provide too little information on the elicitation process. Subsequently, these methods were not assessed with regard to their structure. These methods include GC, the ISCOPE program, the LWD program, the PrefCheck program, and the Sage-atAge+ Service.
3.2.4. Variation in type and training of assessors

Across elicitation methods, different types of assessors were seen. Profiles of assessors ranged from non-medically trained people (e.g. TAPESTRY, TARGET) to different types of healthcare professionals such as nurses (e.g. Guided Care) or pharmacists (e.g. MCG), as well as research assistants (e.g. BGSI, PELI). In some studies, the elicitation method (e.g. API, PCOQ-PD, SARA) was applied through self-administration by patients. Nevertheless, it was sometimes not specified who acted as the assessor (e.g. CPS, PGI).

In most studies the application of the elicitation method was preceded by one or more training sessions for the assessors [9,31,42,46,50,51,54,56,60,64,93,94,112]. Different formats of training were seen across papers, including e-learning, seminars and webinars, and workshops. Some of these training sessions focused on the application of the method in question, while others focused on a broader and related topic such as motivational interviewing. Format and content of training sessions was not always described.

3.3. Evaluation of patient goal attainment

Twelve evaluation methods and studies applying evaluation procedures were identified to assess the attainment of patient goals. Of these, seven methods also contained an elicitation component (see ‘3.2 Elicitation of patient goals’): BGSI, BAM approach, CHOICE, LWD program, PFGI, SARA, and TARGET. One evaluation method, the Goal Attainment Scale (GAS), was developed and validated as an outcome measure as such. Furthermore, four studies were identified that used an independent evaluation procedure (i.e. independently from the goal elicitation method).

Two main observations were made when analyzing the evaluation approaches: 1) quantitative versus qualitative evaluation approaches, and 2) patient’s versus assessor’s judgement. A concise overview of methods and references of studies applying evaluation procedures is provided in Table 3. In-depth information on each evaluation method or study reference can be found in Supplementary file S2.

3.3.1. Quantitative vs. qualitative evaluation approach

Most evaluation procedures applied a quantitative approach, by using quantitative scales or calculating change scores. This last type of evaluation approach was used in two methods: the BGSI and the PFGI. Two methods and two studies used an ordinal scale to assess goal attainment, while two other methods and studies applied an interval scale as evaluation approach. One method, the BAM, uses a qualitative approach by means of open-ended questions.

3.3.2. Patient’s vs. assessor’s judgement

Across papers, differing levels of patient involvement were noted with regard to the evaluation of goal attainment. Most methods or references (n = 7) asked the patient to independently rate their level of goal attainment. Few references (n = 2) did not involve the patient in determining the level of goal attainment. Lastly, within some methods (i.e. BGSI, PFGI, TARGET), the assessor interrogated the patient about his or her progress towards goal attainment but independently determines the level of attainment afterwards.

3.4. Integration of patient goals into a medication optimization intervention for NHRs

Five patient goal elicitation methods were specifically developed for use in NHRs: the BAM approach, MIBBO, PAT, PELI, and QoLSRI (see ‘3.2 Elicitation of patient goals’). However, none of these methods contain a medication-specific aspect or are used in medication optimization studies. Nevertheless, two studies incorporated older patients’ goals into a medication optimization intervention (i.e. medication review) for community-dwelling older adults: DREAMeR and G-MEDDS study [8,9,61]. While the DREAMeR protocol stated that goals were set in collaboration between the patient and the pharmacist, it remains unclear what procedures lead to the identification of these goals. During the G-MEDDS study, the pharmacist used a semi-structured interview guide (i.e. the MCG) to investigate patients’ goals and preferences with regard to their medicines. In this study, patients were also asked to complete the rPATD questionnaire. The rPATD explores a patient’s willingness to deprescribe medication if thought necessary, as well as the patient’s preferences for involvement in the medication decision-making process.

One additional method, PPC, incorporates a medication-related assessment as part of the healthcare goal-setting process with older adults. It explores whether the patient’s medication serves as a perceived facilitator or barrier with regard to achieving the identified

<table>
<thead>
<tr>
<th>Method or reference</th>
<th>Goal typology</th>
<th>Population</th>
<th>Approach</th>
<th>Patient involvement in evaluation process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Andrew et al. [102]</td>
<td>EP</td>
<td>+</td>
<td>IS</td>
<td>+</td>
</tr>
<tr>
<td>2. Bangert et al. [103]</td>
<td>EP</td>
<td>+</td>
<td>IS</td>
<td>+</td>
</tr>
<tr>
<td>4. Because Activities should me Meaningful (BAM) approach [25]</td>
<td>LG</td>
<td>+</td>
<td>QLT</td>
<td>+</td>
</tr>
<tr>
<td>5. Creating better Health Outcomes by Improving Communication about Patient’s Expectations (CHOICE) [48-51]</td>
<td>CP</td>
<td>+</td>
<td>IS</td>
<td>+</td>
</tr>
<tr>
<td>6. Garrod et al. [67]</td>
<td>CG</td>
<td>-</td>
<td>OS</td>
<td>+</td>
</tr>
<tr>
<td>7. Goal Attainment Scale (GAS) [8,31,34,35,53,61,68-70,113,114]</td>
<td>CG or LG</td>
<td>+</td>
<td>OS</td>
<td>- or +</td>
</tr>
<tr>
<td>8. Living With Dysarthria (LWD) program (2012, UK) [63]</td>
<td>CG</td>
<td>+/-</td>
<td>IS</td>
<td>+</td>
</tr>
<tr>
<td>9. Personal Functional Goals Interview (PFGI) [97]</td>
<td>CG</td>
<td>+</td>
<td>CSS</td>
<td>+/</td>
</tr>
<tr>
<td>10. Salih et al. [21]</td>
<td>CG</td>
<td>+</td>
<td>OS</td>
<td>-</td>
</tr>
<tr>
<td>11. Self-Assessment of Role-performance and activities of daily living Abilities (SARA) [111]</td>
<td>CP</td>
<td>-</td>
<td>OS</td>
<td>+</td>
</tr>
<tr>
<td>12. Towards Achievable Realistic Goals in Elderly Tool (TARGET) [46]</td>
<td>CG</td>
<td>+</td>
<td>OS</td>
<td>+/-</td>
</tr>
</tbody>
</table>


Population: ‘+/’ = not specifically used with or developed for older adults, ‘+’ = specifically used with or developed for older adults, ‘+’ = specifically used with or developed for nursing home residents.


Patient involvement in evaluation process: ‘+’ = assessor independently determines degree of goal or preference attainment, ‘+’ = assessor discusses progress towards goal or preference attainment with patient and, if applicable, independently determines degree of attainment, ‘+’ = patient independently determines degree of goal or preference attainment.

* Added by means of grey literature.
goals regarding their health.

Only one study (i.e. the DREAMeR study) investigated whether patient goals were achieved after the medication review process by means of the GAS. Although this study did not include NHRs, GAS has been successfully used in this population [114].

Furthermore, with regard to the evaluation of goal attainment, two other approaches were used in NHRs: the interval scale and a qualitative evaluation (see ‘3.3 Evaluation of patient goal attainment’).

4. Discussion and Conclusion

This study is the first to provide an extensive overview of methods to elicit and to evaluate the attainment of patient goals in older adults. Moreover, it is the first study to explore methods that can be used to elicit and evaluate the attainment of patient goals in medication optimization interventions for older adults and, more specifically, for NHRs.

4.1. Discussion

4.1.1. The ideal elicitation method: what and how?

Thirty-eight methods were identified to elicit patient goals in older adults. Patient goals were differentiated into three domains and five subdomains.

Based on content and structure, elicitation methods varied significantly, impeding the definition of distinct categories. The high degree of variation between methods also impedes their comparison based on effectiveness and feasibility. However, it was not the aim of the scoping review to determine this. For now, the overview of methods can guide the selection of an appropriate elicitation method based on target population and goal typology. Furthermore, it is suggested to choose a method that includes the patient’s perspective right from the start, both in method development and in the elicitation process itself [115]. To our opinion, such methods will be more appropriate and meaningful for patients. The extent to which content should be predefined, as well as the extent to which the approach should be structured to obtain the best results, remain unclear. More research is needed to determine this in order to achieve patient goal elicitation methods that are feasible, appropriate, meaningful, and effective for both patients and HCPs [116].

While no statement can be made on which is the best elicitation method, we speculate that methods on both ends of the continuum regarding content and structure are not the way forward.

Fully predefined and structured elicitation methods, on the one end of the continuum, do not allow intuitive-based handling and may be too restrictive. The application of such methods may result in HCPs having standardized conversations with patients regarding their goals, without adapting their communication style to the individual patient. Consequently, important patient information that might be relevant and clear patient goals [15].

The other end of the continuum, covering fully undefined and open elicitation methods, does not seem too promising either. While it seems important that elicitation methods allow intuitive-based handling, previous research has already highlighted that both patients and HCPs need at least some guidance during the elicitation process in order to identify relevant and clear patient goals [15].

4.1.2. Evaluation of goal attainment: what to measure?

In contrast to the 38 elicitation methods, only 12 evaluation methods were derived from the included references. The small number of identified evaluation methods could be explained by the observation that several studies did not assess the impact of the person-centered intervention on patient goal level but instead used surrogate markers. Examples of such surrogate outcomes were the patient’s well-being, treatment burden, drug burden, QoL, and depressive symptoms [9,37, 60,64,95,109]. Hence, different approaches were used across studies to assess the impact of person-centered interventions.

Only one validated goal evaluation method for older adults, including NHRs, was found in this review (i.e. GAS). An advantage of GAS is that, although each patient has their own goals formulated and thus his own outcome measures, it calculates attainment scores in a standardized manner and as such allows statistical analysis and comparison of interventions [69]. However, whether GAS is the most feasible and appropriate method to evaluate goal attainment in older adults is not known.

Furthermore, it is not sure if goal attainment is the best suited approach to assess person-centered interventions, or whether surrogate markers should be used instead. More research is necessary to investigate which evaluation approach, evaluation method and which outcomes are most appropriate in this regard.

4.1.3. Lack of methods to elicit and evaluate patient goals in medication optimization interventions for NHRs

To elicit and evaluate the attainment of patient goals in NHRs, even less methods were identified. None of these methods focus specifically on medication or contain a medication-related assessment during the elicitation or evaluation process. As such, the results show that there is a lack of methods to elicit and to evaluate the attainment of NHRs’ goals in the context of a medication optimization intervention.

4.1.4. Methodological considerations

A first important methodological consideration is the diverse terminology used in the fields of PCC and the related concept of goal-oriented care. This complicated the development of the search strategy, as well as the interpretation of the review findings. Second, a large number of snowball references was included in the review. Important to note, however, is that these references did not identify additional elicitation or evaluation methods. Snowball references were only included to provide in-depth information (e.g. method development, method implementation) on methods identified by means of our search strategy.

An important strength of the scoping review is the performance of expert consultations. While the framework of Arksey & O’Malley describes this step as an optional element in a scoping review, Levac and colleagues argue that this should be considered as an essential component in order to enhance the review’s methodological rigor [16,20]. Expert consultations, which were performed in July and August 2021, confirmed that elicitation nor evaluation methods had been missed, and supported the findings and their interpretation.

4.2. Conclusion

This scoping review provided an extensive overview of goal elicitation and evaluation methods in older adults. Results highlighted a large degree of heterogeneity between methods, especially with regard to content and structure, impairing their comparison. Moreover, no comprehensive method was identified that allowed the elicitation and evaluation of patient goals and integration thereof in a medication optimization intervention for NHRs. Nevertheless, the results of this review show that it is important to reflect on who is best placed to assess patients’ goals, and to provide sufficient training to assessors. Moreover, elicitation of patient goals as part of a medication optimization intervention should start by exploring the patient’s goals on a more general level. Hence, medication optimization should be seen as one opportunity to work towards patient goals and should be part of a holistic evaluation of the patient’s care plan.

4.3. Practice implications

Several lessons can be drawn from the composition and application of the identified elicitation and evaluation methods in this review.

First, the choice of assessor needs some consideration. It has occurred that patients, whose goals were elicited with the help of a (not medically
trained) volunteer, were afterwards told by their HCP that there was not much that could be done in order to obtain these goals [31]. This might lead to disappointment among patients and potentially a reduction in QoL. Although only one study described this phenomenon, it highlights the importance of choosing the right assessor to facilitate goal assessment and to make sure that elicited patient goals are realistic. Besides this, it might be beneficial to choose an assessor with whom the patient has already established a trustful relationship as previous research has already highlighted this as a potential facilitator in the elicitation of patient goals [15]. Furthermore, it seems important to train assessors in how to explain the concept of goal setting to patients and in how to support patients to overcome barriers they might (un)consciously perceive (e.g. a resigned attitude towards their situation, the fear of being selfish) [15]. Who the ideal assessor is (i.e. which type of assessor and essential characteristics of the patient-assessor relationship), as well as how these assessors need to be trained are matters that need to be explored in future research studies.

Second, as described in the introduction, it can be hypothesized that a person-centered prescribing approach and therefore a person-centered medication optimization intervention holds potential to facilitate the attainment of patient goals and thus improve patients’ QoL. Although it was not the aim of the review, one research study was found that supported this hypothesis, showing a significant improvement in health-related QoL in community-dwelling older adults after performing a clinical medicine review focusing on personal goals [12]. It is important, however, to apprehend that a medication optimization intervention will not be the solution for all patient goals. As such, a medication optimization intervention should be seen as an opportunity to work towards patient goals and not as the one and only means to achieve them. This is important because previous research has shown that the application of PCC on a more general level (i.e. not specifically focusing on the patient’s medication) also has a positive impact on patients’ medication use. A pilot study of the BAM approach, for example, indicates that providing meaningful activities for NHRs results in a significant reduction of their psychotropic drug use [115]. Optimizing a patient’s medication use can thus be seen as both a means to realize PCC, and as a potential result of practicing PCC. Both options need to be further investigated to determine their meaningfulness and effectiveness.

Last, it does not seem evident to elicit patient goals regarding medication without having had a ‘what is important to you?’ conversation. Elicitation methods focusing on medication or covering a medication-related assessment, such as the MCG and PPC, start the conversation on a more general note by exploring what is important to the patient with regard to their everyday living activities and healthcare [22,94]. Only thereafter the positioning of the patient’s medicines with regard to these activities or goals, is discussed. Consequently, it can be stated that the conversation about patient goals in the context of a medication optimization intervention should not be limited to a discussion about the patient’s medication, but should start by exploring the patient’s goals on a more general level (e.g. everyday living activities). To obtain this, the medication optimization intervention should be integrated into a holistic evaluation and discussion of the patient’s care plan. Unfortunately, no comprehensive method allowing a holistic elicitation of patient goals and the integration thereof in medication decision-making for older adults, nor for NHRs, was found. Further research should investigate if an adaptation or combination of identified methods is effective in this regard or if a new method should be developed in order to obtain this.

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Amber Damiaens: Conceptualization, Methodology, Validation, Formal analysis, Investigation, Writing – original draft, Writing – review & editing, Visualization, Project administration, Funding acquisition.
Evelien Maes: Formal analysis, Investigation. Hanne Van Roosbroek: Formal analysis, Investigation. Ann Van Hecke: Conceptualization, Methodology, Validation, Formal analysis, Investigation, Writing – review & editing, Visualization, Supervision. Veerle Foulon: Conceptualization, Methodology, Validation, Formal analysis, Investigation, Writing – review & editing, Visualization, Supervision, Funding acquisition.

Declaration of Competing Interest
The authors declare that they have no competing interests.

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Appendix A. Supporting information
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