Patients' Involvement in Decision Making at End of Life—A Systematic Review of Literature

Elham H. Othman¹, Inaam Khalaf², Ruqayya Zeilani²

¹King Hussein Cancer Center, Amman, Jordan, School of Nursing, The University of Jordan, Amman, Jordan
²School of Nursing, The University of Jordan, Amman, Jordan

Email: othman@khcc.jo, elham.othman@gmail.com, khalaf@ju.edu.jo, khalaf12@yahoo.com, zeilani.r@gmail.com

Abstract

**Background:** involving patient in end of life decision is important to understand their wishes and preference, which will help health care providers in improving the quality of dying and minimizing suffering. **Aim:** the aim of this review was to provide a detailed examination of the available literature related to patients’ involvement in decision making at end of life. **Design:** a systematic review following the PRISMA protocol was used, the review protocol was registered on PROSPERO: CRD42019128556. Data sources: we conducted a literature search in two electronic databases “CINAHL and Medline” during March-April 2019. The retrieved articles were included if they were: research reports or literature review; examined patient involvement in end of life discussions; full text publications, written in English and published from 2000-2019. **Results:** a total of (22) articles were included in the review; there was diversity in the purposes and design approach of the retrieved studies. The available literature explored patient’s involvement at end of life decision making through; describing current practices; understanding perspectives of end of life discussions; investigating the impact and identifying the barriers and facilitators of patients’ involvement in end of life discussions. **Conclusion:** involvement in end of life discussions improved the recognition of patients’ wishes, improved death experience, and decreased post-traumatic stress, depression, and anxiety among family members. Despite the documented benefits, some barriers against patient’s involvement in EOL decisions were recognized; lack of awareness; lack of education, training and experience; concerns about ethical and legal issues; and personal preferences of doctors or nurses were among the most commonly identified barriers.

**Keywords**

Advance Directives, Advance Care Planning, Decision Making at End of Life,
Electronic Medicine Record System for Enhanced Health Outcomes: A Systematic Review

1. Introduction
1.1. Background
Being hospitalized or having a hospitalized family member is overwhelming and a stressful experience, especially if the illness is terminal and death is imminent. Patients, their family caregivers and health care providers (HCPs) are obligated to make crucial decisions challenged by the sensitive circumstances surrounded by end of life (EOL) which increase the difficulty of making them [1].

Patients differ in their preference for participation in treatment decisions at EOL [2]. The goal of involving patient in EOL decision making is to understand the patient’s values and treatment preferences [3], promote autonomy and empower patients and their caregivers [4], as well as, recognize the patients’ wishes [5], improve EOL care from the perspective of the patient and diminish the likelihood of stress, anxiety, and depression in surviving relatives [6].

Even though the HCPs recognize the importance of ongoing communication and providing adequate information about the patient’s condition; reports indicate that the majority of family members of in-hospital deceased patients were dissatisfied with HCPs’ communication regarding EOL decisions, and they clearly verbalized their preferences to have more communication regarding their patient’s condition [7]. It is necessary to evaluate the available evidence in order to enhance patients’ involvement in EOL decision making.

1.2. Review Aim
The aim of this review is to provide a comprehensive understanding of patients’ involvement in decision making at EOL. More specifically, the review aims to answer two research questions: what is the level of patients’ involvement in the EOL decision making and what are the patients’ preferences regarding participation in EOL decisions?

1.3. Objectives
1) Systematically identify, analyze and describe studies that evaluated patients’ involvement in decision making at EOL.
2) Evaluate the nature and strength of evidence for patients’ involvement in EOL decision making and patients’ preferences regarding participation in EOL decisions.

1.4. Outline of the Content
This review was written following the Preferred Reporting Items for Systematic
Reviews and Meta Analyses (PRISMA) protocol for systematic reviews [8]. The main sections of this manuscript are: introduction, methods, results and discussion. The first section is the introduction which includes a brief background and explanation of the review aim and objectives. The methods section is composed of systematic steps that are followed to search and retrieve the eligible studies, extract data in a rigorous way and examine the quality of evidence derived from the included studies. The last section is the discussion which includes summary of evidence and conclusion.

2. Methods

2.1. Protocol and Registration

The protocol for this review was registered on the PROSPERO and is available at the PROSPERO registry at [http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42019128556].

2.2. Eligibility Criteria

To ensure a comprehensive search strategy, the literature search was guided by the PICOT framework, including population of interest (P), issue of interest (I), comparison of interest (C), outcome of interest (O) and timeframe (T) [9]. Our search was focused on patient (P) and participation in decisions at EOL (I). Comparison of interest (C) was not relevant as our purpose was not to compare different populations or practices. In terms of outcomes (O), it was postulated that studies of patients’ involvement in EOL decisions may investigate participants’ perspectives of current practices. We set a timeframe (T) of research published since 2000; this provided a wide search of the last 19 years.

The retrieved articles were included if they were: 1) research reports, literature review, or academic works such as master or Ph.D. dissertation; 2) examined patient involvement in EOL discussions; 3) involved adult patients; 4) full text publications, written in English and 5) published from 2000-2019. The search was conducted without any restrictions on methodology of research study.

2.3. Information Sources

Two nurse researchers (EO, IK) independently searched two electronic databases: CINAHL and Medline (through PubMed) to identify eligible publications. The initial search of the literature was performed between March 3rd, 2019 and the last search was run on April 20th, 2019.

2.4. Search

Research articles and systematic reviews of EOL discussions were identified through the search. Terms were entered generally and expanded to include medical subject heading (MeSH) terms where available. Initially, broad categories of search terms were selected, including EOL discussions, decision making
at EOL and patient’s involvement. Specific terms within each category were then identified (for example, the category for EOL decisions included the terms “advance care planning (ACP)” and “advanced directive (AD)”). All possible combinations of the terms from each category were then searched to locate target studies. The reference list of eligible articles was manually searched to identify publications not retrieved by the electronic search. Mendeley software was used to find duplicates and facilitate citation.

2.5. Study Selection

Similarly, two researchers (EO, RZ), screened titles and abstracts of retrieved studies to identify studies that potentially meet the inclusion criteria. Then, full text of these potentially eligible studies was retrieved and independently assessed for eligibility. Any disagreement between them over the eligibility of particular studies was resolved through discussion with a third reviewer (IK).

2.6. Data Collection Process

We developed a data extraction sheet, and data were extracted by two reviewers (EO, RZ). Any differences were discussed, and data were only included if consensus was reached between the reviewers.

2.7. Data Items

The reviewers conducted an in-depth review of the included studies, extracted and summarized studies’ information in two tables: 1) a summary of studies characteristics (including target population, sample, settings, research design, and country), and 2) studies’ findings that were summarized in a review matrix, with eight headings: study/year published/country; purpose; design; sampling “including subject characteristics”; instrument/time of data collection; main study variables; results; and conclusion/recommendation.

2.8. Risk of Bias in Individual Studies

Two reviewers (EO, IK) assessed the risk of bias in all studies. The quantitative studies were assessed using the Quality Assessment Tool (QAT) checklist retrieved from the Effective Public Health Practice Project (EPHPP) [10], while the qualitative studies and reviews were assessed using Critical Appraisals Skills Programme (CASP) Checklists [11] [12]. If the scores differed, agreement was achieved by referring to a third reviewer (RZ).

2.9. Synthesis of Results

Data were synthesized and analyzed by two reviewers (EO, IK), any discrepancy between them was resolved by consensus, data were included only if both reviewers agreed on. A narrative-descriptive synthesis of the evidence including main findings and consistency of findings among studies, as well as, tables were prepared.
3. Results

3.1. Study Selection

Initial database searches retrieved 1203 articles, after removing duplicates, (491) were screened for titles and abstracts. One hundred twenty studies were selected for full text screening in which (22) of them were found eligible to be included in the review. The search strategy and selection process are shown in the PRISMA flowchart (Figure 1) [8].

3.2. Study Characteristics

A total of (22) final articles published between 2000 and 2019, were included in the review. Most of the selected studies were review papers (n = 8) [13]-[20], followed by qualitative research studies (n = 6) [1] [2] [4] [21] [22] [23], non-experimental studies (n = 6) [5] [24] [25] [26] [27] [28], and lastly two clinical trials [6] [29].

The articles represented considerable diversity in terms of population; the settings involved seven hospitals [1] [2] [6] [13] [19] [24] [28], four outpatients [5] [25] [26] [27], four nursing home settings [4] [18] [22] [23], one hospice agency [21], and three multi sites [14] [15] [29]. Furthermore, the selected studies used different sources of data; the majority targeted patients (n = 11) [2] [6] [15] [21]-[29], patients and care provider (n = 6) [4] [5] [14] [18] [19] [22], and two studies collected data from healthcare providers (HCPs) [1] [20]. The characteristics of selected articles are summarized in (Table 1).
Table 1. Characteristics of literature included in review (N = 22).

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<td>Palliative care patients</td>
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<td>Patient with specific situations</td>
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<tr>
<td>Nursing homes residents</td>
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<td><strong>Sample</strong></td>
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<td>Patients</td>
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<td>HCPs</td>
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<td>Patients and providers</td>
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<td><strong>Settings</strong></td>
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<td>Outpatients</td>
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<td>Nursing home settings/hospice agencies</td>
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<td>Multi-settings</td>
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3.3. Risk of Bias within Studies

Quality of included studies was appraised and reported using a trustworthy checklist. Detailed tables of appraisal are presented in the online supplementary material (risk of bias in individual studies—Tables A1-A3).
The quality of qualitative studies was assessed using the QAT, which was interpreted through referring to the tool dictionary and a research study that examined quality assessment components and ratings for EPHPP instrument [30] [31].

Generally, study reports that used quantitative designs showed an adequate quality rating (supplementary risk of bias in individual studies—Table A1). Six studies out of 8 was rated as fair or good on controlling for the selection bias [6] [24] [26] [27] [28] [29] only two studies used clinical trial design [6], [29] and six studies used a cross sectional observational design [5] [24] [25] [26] [27] [28]. Almost 50% of the studies addressed the confounder variables [6] [25] [26] [29], five studies reported the reliability and validity of the data collection tools [5] [6] [25] [28] [29], and seven studies described the withdrawal rate [5] [6] [24] [26] [27] [28] [29].

The qualitative studies appraised exhibited a high level of quality on the CASP (qualitative) checklist (supplementary risk of bias in individual studies—Table A2). However, two studies failed to state a clear aim of the research, and most of the studies did not adequately describe the relationship between researcher and participants. Similarly, most of the reviews included failing to mention a specific research question and almost three reviews did not include any assessment of the quality of the included studies (supplementary risk of bias in individual studies—Table A3).

3.4. Results of Individual Studies

Three categories were formed based on a thematic synthesis of the retrieved research studies. A detailed summary of the studies is provided in the online supplementary material (summary of included studies—Table A4).

3.4.1. Evaluate the Current Practices of EOL Discussions

Almost seven studies evaluated the current practices of patient’s involvement in EOL decision making; either by 1) describing the current practices, 2) examining the relation of EOL decisions with ethical viewpoint, or 3) exploring the role of patients in EOL decisions.

The studies showed a lack of involving patients in EOL decision making. A qualitative descriptive study reported that most patients did not have the opportunity to discuss their values and preferences for EOL treatment, similarly, relatives stated that staff did not initiate discussions with them [22]. Actually, few patients discussed the type of care they want to receive with their family, and fewer had discussed this with their doctor [25] [27] [28]. In the same context, few patients documented their wishes in a written document or appointed a surrogate decision maker [14] [27]. Nevertheless, it was found that older patients with chronic illnesses, palliative care patients and nursing home residents had a significantly greater completion of any form of AD [14].

Another major issue was the timing of EOL discussions with patients; inappropriate timing of EOL care discussions was associated with patient and family
distress, and discomfort for health care professionals [1]. Generally, there was limited evidence of the timeliness and initiation of EOL discussions [16]. While relatives of patients emphasized on selecting the right timing to initiate discussions [22], it was reported that EOL decisions were made very close to death [24].

Previous studies emphasized that decisions at EOL should combine clinical information about the diagnosis and prognosis with values and beliefs of patients and health care providers [13], most patients have not had the opportunity to discuss their own values and preferences for treatment and care related to EOL [22].

On the other hand, there was a variation in patients’ and relatives’ involvement; while some family or surrogates were informed and involved in EOL decisions [24], others claimed that family caregivers were not involved or prepared for decision-making [16] [22] and that physicians often make these decisions with little input from others [13].

3.4.2. Understand Perspectives of EOL Discussions
The majority of retrieved studies aimed to understand the perspectives toward EOL decision making. Patients’ preferences of information disclosure varied from wishing to be fully informed to those who did not want to know everything [22], which means it is important to assess the patient’s readiness for an ACP or EOL conversation [15]. Several studies reported patient ambivalence when involved in ACP [15] [21], uncertainty might be related to prognosis, continued medical treatment, caregiver arrangements, and the circumstances of their dying and death. Patients who support ACP perceived it as a way to control and arrange their lives, decrease their suffering as a result of futile treatments and increase their autonomy, thus enabling their wishes to be respected [17].

A national survey in the USA revealed that the majority of participants prefer to be offered choices and to be asked for their opinions, want to know about their condition and have the option to decide [26]. Additionally, more educated, healthier people, aged up to 45 years were more likely to prefer an active role in decision making, however, people older than 65 years preferred to rely on physician decisions.

Nursing home residents represent a key population in EOL decisions and their perspectives have been examined by several studies [4] [18] [23]. Many elderly and nursing home residents viewed death as a natural part of life [4] [23], they live one day at a time without thinking about death nor about planning their future. While some residents believed that God is in control of life and plans their EOL care [23] others were willing and comfortable talking about EOL care and wanted to make their own decisions [18]. Moreover, it was reported that some older residents had planned the practical issues related to their death (funeral and financial issues) regardless of their preferences of EOL care or decisions [18].

Most nursing home residents reported not having EOL communications with
physicians, but they trusted the staff or their family members to be the decision maker regarding EOL care treatments [23]. Relatives, on the other hand, felt insecure about the residents’ wishes, experienced decision-making as a burden [4], and preferred shared decision-making with the staff [18]. Participants emphasized on considering cultural differences as the basis for sensitive communication. Likewise, some elders and family members believed that ACP would be initiated gradually in the context of routine care and sensitive to cultural context [23]. Some stated that discussions should start early before the onset of serious health problems or cognitive impairment, residents stressed the importance of both quality of life and a natural death, they did not wish for their lives to be prolonged for no reason, wished for being free of pain and suffer, and having a company at EOL [4] [18].

Results of a systematic review [19] showed that critically ill patients and their relatives have low knowledge about ADs, nevertheless relatives were very interested in receiving information on ADs. Additionally, there are discrepancies between patients’ decisions and relatives’ decisions, therefore it was suggested that preparing for decision making should start by improving communication between healthcare team, patients and their relatives [19].

Patients from hospice agencies make decisions in the context of the realization that one’s life is near its end, and living one day at a time while expressing the importance of having family support for their arrangements [21]. In the same context, patients diagnosed with cancer preferred their physician to play a role in the decision making process because of his/her expertise. Nevertheless, most of the patients said that the illness trajectory would influence their preferred level of participation and that their preference might change along with the phase of illness [2].

3.4.3. Investigate the Impact of Patient’s Involvement in EOL Discussions

The impact of ACP on EOL care was investigated in many studies [5] [6] [29]. Involvement in EOL discussions and the use of ACP increased patients’ involvement in decision making or the appointment of surrogate decision makers, and improved the recognition of patients’ wishes [6]. Those patients requested relieve from suffering, accepted the do-not-resuscitate order, received fewer aggressive medical interventions near death, and their deaths were associated with positive comments compared with deaths in patients who were not involved in EOL discussions [5]. Moreover, family members of patients who had died after being involved in EOL had fewer symptoms of posttraumatic stress, depression, anxiety, were prepared for patient’s death and satisfied with its quality [5] [6].

One study examined the effectiveness of a nurse-led facilitated ACP intervention [29] and reported increasing the acceptance of ACP following discussion with a nurse facilitator. The same study revealed that ACP discussion with loved ones was associated with higher social support, while discussion with doctors was associated with lower quality of life. In fact, the number of facilitated ACP
discussions with the nurse facilitator, and a preference for the ACP intervention were associated with higher acceptance of ACP [29].

3.4.4. Barriers and Facilitators of EOL Discussions

Barriers to initiate EOL discussions might be related to knowledge, attitude or behaviors. Knowledge related barriers are lack of awareness, lack of education and training in initiating and discussing difficult topics with patients [1] [20]; concerns about ethical and legal issues relating to withdrawing and withholding therapies; and the uncertainty of a disease trajectory [20]. On the other hand, attitude related barriers are fear of not being able to answer patients’ questions or destroying hope; personal preferences of doctors or nurses affect discussions [20]; lack of experience and confidence with EOL discussions [1] [20].

Behaviors related barriers can be related to patient and family factors: reluctance of the family or patient to engage in discussions, a desire to protect the patient from “painful” information and the patient’s lack of readiness or language barriers; or institutional factors: cultural barriers, a stigma around palliative care or lack of protocol, tools and training lack of time to develop a rapport with the patient or next of kin and limited resources [20]. Additionally, insufficient communication within the healthcare team and inaccurate or incomplete documentation were major challenges against EOL discussions.

In the same context, barriers to EOL discussions may arise from patients themselves or their relatives; not having felt sick enough, preferring to concentrate on staying alive, and not being sure which doctor would be providing care were the main reported patients’ barriers [25], lack of adequate timing, and different patient and family expectations [20] were reported. On the other hand, patient’s facilitators to EOL discussions were high levels of anxiety of upcoming future, fear of becoming a burden on relatives, and the experience of a beloved one death [25].

4. Discussion

4.1. Summary of Evidence

The aim of this review was to provide a comprehensive understanding of patients’ involvement in decision making at EOL. Our systematic review identified eight review papers, six qualitative research studies, six observational studies and two clinical trials. Overall, there was diversity in studies that examined patient’s involvement in the EOL decision making. The available literature described the current practices of patients’ involvement, discussed perspectives of EOL discussions, investigated the impact and finally identified the barriers and facilitators of patients’ involvement in EOL discussions.

Generally, there was a variation in current practices of patient involvement in the EOL decision making, while some patients requested to be involved [26], others wanted a natural death without interfering with GOD’s arrangements [23], even a few number of patients actually documented their wishes in a writ-
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On the other hand, involving nurses may improve communications in EOL discussions. According to Adams [32] registered nurses play a major role in EOL decision making, such as: facilitating communication between the patient and HCPs, providing support to patients and their families, and advocating for patients’ rights. The use of a decisional coach into the process of care is another strategy to improve the decision making practices. The decisional coach would be someone (e.g., a nurse) who could understand patient-specific values and goals of care, and relay issues to physicians in preparation for the patient-physician encounter [33].

Level of education, health status and age were linked to patients’ preferences of involving in EOL decision making [26]. Another variation in patients’ preferences was found across different settings; while hospice care and nursing home residents make decisions in the context of the realization that one’s life is near its end, cancer patients stated that illness trajectory would influence their preferred level of participation and their preference might change along with the phase of illness.

4.2. Strengths and Limitations

The strength of our study lies in its rigorous search strategies; the use of two separate researchers in assessing studies for screening, eligibility, and risk of bias, with secondary checking and verification of data extraction; as well as the use of PRISMA guideline to extensively examine the literature of almost 20 years that provided stronger evidence. Our review is limited by the highly heterogeneous nature of the research methodology, populations and measured outcomes. Other limitations include restricting to English-language publications and variations in quality of the included studies.

4.3. Conclusions

This paper has given an overview of the extent of patients’ involvement in the EOL decision making. Involvement in EOL discussions improved the recognition of patients’ wishes, improved death experience, decreased posttraumatic stress, depression, and anxiety among family members. Despite the documented benefits, some barriers against patient’s involvement in EOL decisions were recognized, lack of awareness; lack of education, training and experience; concerns about ethical and legal issues; and personal preferences of doctors or nurses were
among the most common identified barriers.

Generally, there is a variation in the practices of the patient’s involvement in EOL decisions and in the perspectives of patients, relatives and health care providers. This may guide future research to provide insights into the patient’s preferences in order to improve the patient’s experience of EOL care and decisions. Additionally, the literature highlighted the major barriers and facilitators of involving patients, which might help in improving the current practices. The limited studies within the Middle East culture demand the need for future studies to understand the impact of cultural context on patients’ involvement and preferences.

**Key Statements**

1) **What is already known about the topic?**
   - Patients differ in their preference for participation in treatment decisions at EOL.
   - Patients’ involvement in decisions at EOL improved the recognition of patients’ wishes, improved death experience, decreased posttraumatic stress, depression, and anxiety among family members.
   - Barriers against patient’s involvement in EOL decisions are lack of awareness; lack of education, training and experience; concerns about ethical and legal issues; and personal preferences of doctors or nurses.

2) **What this paper adds?**
   - This paper has given an overview of the extent of patients’ involvement in the EOL decision making during the last 19 years.
   - This paper addressed the variation in practices of the patient’s involvement in EOL decisions and in perspectives of patients, relatives and health care providers.
   - Generally the involvement of patients and relatives in EOL decision making was limited, inappropriate timing of EOL care discussions was reported.
   - A formal risk of bias assessment of all studies revealed a substantial variability in quality among quantitative studies. However, the qualitative studies appraised exhibited a high level of quality.

3) **Implications for practice, theory or policy?**
   - The review identified the major barriers and facilitators of involving patients, which might help in improving the current practices.
   - Future research to provide insights into the patient’s preferences in order to improve the patient’s experience of EOL care and decisions are needed.
   - The limited studies within the Middle East culture demands the need for future studies to understand the impact of cultural context on patients’ involvement and preferences.

**Authorship**

The three authors shared the process of systematic retrieval, assessment and analysis of the research studies, details of each contribution is stated in methods
sections. Results and manuscript preparation: EO, IK, RZ.

**Data Management and Sharing**

All data generated or analyzed during this study are included in this published article.

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**Conflicts of Interest**

The author(s) declare(s) that there is no conflict of interest.

**References**


## Supplementary

**Table A1.** Effective Public Health Practice Project (EPHPP) quality assessment tool for quantitative studies (n = 8).

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1 = strong, 2 = moderate, 3 = weak.

**Table A2.** Critical Appraisals Skills Programme (CASP) checklist for included qualitative studies (n = 6).

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<td>2</td>
<td>Is a qualitative methodology appropriate?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Was the research design appropriate to address the aims of the research?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Was the recruitment strategy appropriate to the aims of the research?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Was the data collected in a way that addressed the research issue?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Has the relationship between researcher and participants been adequately considered?</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>Have ethical issues been taken into consideration?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Was the data analysis sufficiently rigorous?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Is there a clear statement of findings?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

1 = yes, 2 = can’t tell, 3 = no.

**Table A3.** Critical Appraisals Skills Programme (CASP) checklist for included systematic reviews (n = 8).

<table>
<thead>
<tr>
<th></th>
<th>[13]</th>
<th>[16]</th>
<th>[17]</th>
<th>[18]</th>
<th>[19]</th>
<th>[20]</th>
<th>[14]</th>
<th>[15]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Did the review address a clearly focused question?</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Did the authors look for the right type of papers?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Do you think all the important, relevant studies were included?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Did the review’s authors do enough to assess quality of the included studies?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>If the results of the review have been combined, was it reasonable to do so?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>How precise are the results?</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Can the results be applied to the local population?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Were all important outcomes considered?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Are the benefits worth the harms and costs?</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 = yes, 2 = can’t tell, 3 = no.

**Table A4.** [https://mega.nz/#f!pYFgAIAjlv3276v4Ha8Ww4xLHgdXBdDMif9LizUFPnO4o](https://mega.nz/#f!pYFgAIAjlv3276v4Ha8Ww4xLHgdXBdDMif9LizUFPnO4o)