

Effectiveness of Advance Care Planning Decision Aids in Adult Hospitalized Patients: An Umbrella Review

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Introduction. Advance care planning (ACP) involves discussing future healthcare goals with patients facing terminal illnesses to ensure their values and preferences are respected. Decision aids are tools that provide evidence-based information to help patients make informed decisions about their care, reducing decisional conflicts and improving outcomes.

Objective. This study aimed to identify the forms and elements of ACP decision aids and evaluate their effectiveness among hospitalized patients.

Methods. A comprehensive umbrella review was conducted, following PRISMA guidelines. Ten systematic reviews from 2015 to 2024 were included, covering 242 primary studies. The methodological quality was assessed using the JBI Critical Appraisal Tool.

Results. ACP decision aids were categorized into web-based, video, interactive, and other formats (booklets, audio recordings). They improved ACP engagement, such as completion of ACP documents, and enhanced patient and surrogate healthcare outcomes, including satisfaction, reduced decisional conflict, and improved knowledge and self-efficacy.

Conclusion. ACP decision aids are effective in facilitating ACP discussions and aligning care with patient preferences. Standardized methodologies and long-term impact studies are needed to enhance their implementation and effectiveness.

INTRODUCTION

While aggressive and life sustaining treatments incapable of saving life, and bring significant distress to in-patients facing a terminal illness^[1]. Advance care planning (ACP) is a process of discussing desired goals and directions of care with a substitute decision maker or healthcare professional when the individual has decision-making capacity^[2], and can be broadly defined as the process by which an individual prepares for ill-health, particularly by making complex decisions about the end of life by which a patient considers the implications and consequences of a serious end-stage illness based on their own values in order to identify goals and preferences for future medical and nursing care, and discusses these goals and preferences with family and healthcare providers^[3, 4].

ACP is a preference-sensitive decision-making process^[1, 5]. Patients and alternative decision-makers frequently lack the capacity to accurately identify the patient's own

values and preferences due to uncertainty or a biased understanding of potential future scenarios, this can lead to decision-making dilemmas^[6, 7]. Decision aids are defined as tools that provide patients with evidence-based information about the potential benefits and risks associated with different treatment options and the resulting outcomes, tailored to their specific health status^[7]. These aids can assist patients and their families in articulating and documenting their values and preferences, which can then be used to inform the development and implementation of ACP^[8]. A number of studies have demonstrated the efficacy of decision aids in facilitating patient comprehension of treatment options, clarifying treatment preferences, reducing decision-making conflicts, and improving patients' ACP-related outcomes and prognosis^[8, 9].

There is an increasing literature on ACP decision aids for people with various disease. In the past decade, numerous systematic reviews on this topic have been published. The decision aids presented in these reviews are diverse and comprehensive in scope^[10, 11]. The process of locating and interpreting this evidence may prove challenging for patients and their surrogates^[12]. Consequently, this study conducted a comprehensive overview of existing systematic reviews with the objective of providing a comprehensive overview of ACP decision aids. This study sought to integrate evidence from previous research, with the two main aims being: To identify the forms and elements of ACP decision aids; and to evaluate the effectiveness of ACP decision aids among in-hospitalized patients.

METHODS

This umbrella review was followed the guidelines of The Joanna Briggs Institute (JBI) umbrella review method^[13] and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)^[14]. The protocol is registered on the PROSPERO website (CRD:42024554913). See the PRISMA checklist in supplementary files. If the study population in the article involves only surrogate decision-makers, it will be excluded.

ELIGIBILITY CRITERIA

This study considered systematic review of primary qualitative and quantitative research. Following PICO (participants, interventions, comparator and outcome) criteria: ACP decision aids (I) and effectiveness of using the ACP decision aids (O) for adult inpatient (P) and their surrogate decision makers with or without comparators (C). If the study population in the article involves only surrogate decision-makers, it will be excluded.

SEARCH STRATEGY

The databases PubMed, Embase, CINAHL, PsycINFO, Web of science, ERIC, Cochrane Database of Systematic Reviews, Databases of Abstracts of Review of Effects (DARE) were systematically searched for review articles. A snowballing approach was used to search the remaining literature in order to increase the comprehensiveness of the included literature. All the research was carried out on July

3th 2024. See the search strategy in supplementary files.

STUDY SELECTION

All the articles were exported to EndNote 20 and duplicates were removed. Two well trained researchers (XY AND HZ) scanned the citations to identify eligible reviews independently. After screening title and abstract, full text of potentially relevant studies were then screened applying the inclusion criteria. The third reviewer (LX) discusses and decides strictly on the basis of the inclusion or exclusion criteria in case of disagreement.

DATA EXTRACTION

Data extraction form was designed based on JBI umbrella review guidelines, LX and XY independently extracted the context including name of the study, author, year, aim, setting(s), participants, database search, number, elements of ACP decision aids, ACP outcome (validation of decision aids) . The information collected from the reviewers comprised (Table 1).

QUALITY ASSESSMENT

LX and XY independently assessed the methodological quality^[13] of the eligible reviews following the JBI assessment checklist for systematic review. Disagreements were resolved by the third reviewer (QW).

DATA SYNTHESIS

First, the relevant data from each review were entered into Excel. The information from each review was then summarized in a descriptive table. Effectiveness was investigated by categorizing the different outcomes which extracted from each review. Until the end of manuscript development, the synthesis was repeatedly revised.

RESULTS

Study inclusion

6453 records were initially obtained from the databases. After removing the duplicates and selecting titles and abstracts ,5250 were excluded. Of the remaining 60 citations, 3 were removed as participants do not meet the criteria, 3 full-text could not be retrieved, 4 were excluded as conference abstract, 33 were discarded for not meet the inclusion criteria, 7 were excluded as duplicated studies. Ten systematic reviews from 2015 to 2024 met the inclusion criteria, which include a total of 242 primary studies, were selected for detailed evaluation (Table 1). As it shown in a PRISMA flow diagram (Figure 1). A manual search of the reference lists and snowball searching identified no further study.

Quality of included studies

Only 3 of the included studies^[15-17] published a study protocol before starting their study. The methodological quality of the ten reviews using the 11 criteria JBI Critical Appraisal Tool for Systematic Reviews (Table 2). The SRs scored between 8 and 10

out of the 11 for JBI quality check items. Most of the systematic reviews met the five criteria of the JBI quality assessment: clear review questions. Inclusion criteria, appropriate criteria for appraisal, Appraised by two independent reviews, Appropriate methods for combining data. 3 studies^[18-20] searched the grey literature satisfied the adequate database search. The assessment of the likelihood of publication bias were satisfied by only one^[15]. All the included studies assessed the quality of primary studies.

Forms and elements of ACP decision aids

As they were derived from the detailed descriptions provided in the systematic reviews, the forms and elements are summarized in Table . ACP decision aids can be categorized into four types: web-based decision aids^[19-21], video decision aids, interactive decision aids, and other (including booklets, audio recordings etc.) Web-based decision aids based on the computer program and utilized a multifaceted intervention employing various elements, including provide ACP or legal information^[19-21], addressing the readiness and timing for ACP^[19], Stimulates to explore personal values and goals of goal of care of future^[20, 21], encourage to communication with surrogate decision makers and ACP documents^[19, 20], facilitators training^[19]. Video decision aids include the elements of providing ACP information^[21], Readiness and timing^[19], future care/end-of-life preferences^[21], uncertainties and consequences^[21], appoint surrogate decision-maker^[17], discuss goals of care (GOC)^[17, 19], ACP document^[19], train facilitators^[19], avoid excessive treatment^[17], alleviate negative emotions^[17]. Interactive decision aids include providing ACP information^[18, 22], give patients a pre-post visit survey^[16, 18, 22, 23], discuss with HCP based on the survey^[16, 22, 23], and discussion about goals of care^[18, 24], providing decision information^[22, 24], Symptom management^[24], Avoiding excessive treatment^[24], Continuity of care^[24], ACP documents^[18]. Paper-based materials, audio recordings and booklets are other decision aids, contain the elements of providing ACP information^[15], facilitating discussions about ACP wished^[15], and completing ACP document^[15].

Effectiveness of ACP decision aids

The included 10 systematic reviews reported the effectiveness of ACP decision aids for both in-hospitalized patients and their surrogates (Table 4), which can be categorized in three types: ACP engagement^[15-22, 24], patients and surrogate healthcare outcome^[15-19, 21, 23], and use specific tools to evaluate the effectiveness of the decision aids^[20]. ACP engagement include completion of ACP document^[16, 18-21], concordance between patients and their surrogates^[18], concordance between care and wishes^[16, 19, 21], ACP discussion^[15-19, 22, 24], ACP knowledge improvements^[15, 18], Level of care preference^[15, 17, 22, 24], Choice of palliative care^[15, 17, 24], Surrogate designation^[18, 19]. Patients and surrogate healthcare outcome included: patients and surrogates' satisfaction^[19, 23, 24], patients and surrogates' decision conflict^[16, 18, 21], patients and surrogates' decision confidence, patients and surrogates' anxiety and well-being^[18, 19], and patients' self-efficacy^[18].

DISCUSSION

A major contribution to existing theories of ACP and decision aids is made by the findings of this comprehensive review. The evidence consistently supports the notion that ACP decision aids are effective in fostering patient engagement, improving knowledge, reducing decisional conflict and ensuring that care is in line with patient preferences. This is consistent with previous research highlighting the importance of informed decision making in end-of-life care^[8]. The categorization of decision aids into web-based, video, interactive and other formats, each with specific elements and benefits, provides a nuanced understanding of how these tools can be tailored to different patient needs and settings^[25].

The findings are consistent with previous studies highlighting the effectiveness of decision aids in improving ACP outcomes^[19, 21]. However, this review also highlights some differences. For example, the heterogeneity of study designs and settings identified in this review suggests that while decision aids are generally effective, their specific impact may vary depending on the context of use. This variability has been less emphasized in previous individual studies, but becomes apparent when synthesizing multiple systematic reviews^[26, 27].

To address current limitations, future research should focus on several key areas: standardization of methodologies: There is a need to standardize the methodologies used to evaluate ACP decision aids to improve the comparability and generalizability of results across settings and populations. Cultural adaptations: The development and testing of culturally adapted decision aids is essential. This includes creating tools that consider cultural differences in understanding and discussing end-of-life care, as highlighted by studies in East Asian contexts^[28]. Integration with technology: Exploring the integration of ACP decision aids with electronic health records (EHRs) and other digital platforms can improve their accessibility and usability. Technological integration ensures that patient preferences are easily accessible to all healthcare providers involved in the patient's care^[29].

Strengths and Limitations

The strength of the systematic review is that it demonstrated that ACP decision aids result in significantly increased completion rates of ACP documents, thereby ensuring that patient preferences are adequately documented and respected.

It should be noted that this review is subject to certain limitations. Firstly, the included systematic reviews encompass a variety of settings, patient populations, and types of decision aids, which leads to heterogeneity. This variability may affect the generalizability of the findings, as it makes it difficult to generalize findings across different settings and populations. Future research should focus on standardizing methodologies in order to enhance the comparability of results. Secondly, the effectiveness of ACP decision aids may vary across different cultural and healthcare contexts, which is not thoroughly examined in the current reviews. It is of the utmost importance that ACP decision aids are founded upon a profound comprehension of the local culture. This enables them to align themselves with the specific needs of the local environment.

CONCLUSION

ACP decision aids represent a crucial instrument in the enhancement of patient engagement and the assurance of care alignment with patient preferences. They enhance patient and surrogate satisfaction, reduce decisional conflict, and facilitate more effective communication. Nevertheless, several challenges remain, particularly in terms of the generalizability of findings, the long-term impacts of the use of ACP decision aids, the cultural adaptations required, and the integration of ACP decision aids with technology. It is therefore imperative that these issues are addressed through the implementation of standardized, culturally sensitive and technologically integrated approaches if ACP decision aids are to achieve future success. By continuing to refine and expand research in these areas, healthcare providers can better support patients in making informed decisions about their care, ultimately enhancing the quality and alignment of end-of-life care with patient preferences.

AUTHORSHIP

Aims and search strategy: LX, XY, HZ, QW

Screening of the article: LX, XY, HZ

Quality appraisal: LX, XY, HZ

All the authors have approved the version to be published and have participated sufficiently in the work for appropriate of the content

CONFLICT OF INTEREST

None

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