



Review

Shared decision-making for early-stage breast cancer treatment: An evolutionary concept analysis

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ABSTRACT

Objective: The lack of a clear and unified definition of shared decision-making (SDM) may hinder its effective application in oncology care. This study aims to clarify the concept of SDM specifically in the context of early-stage breast cancer treatment through an evolutionary concept analysis.

Methods: A systematic search was conducted across PubMed, CINAHL, PsycINFO, Cochrane, and EMBASE databases for articles published from January 2015 to December 2024. Using keywords “shared decision-making” and “breast cancer,” relevant studies were identified, and key attributes of SDM were extracted and synthesized. Sixteen studies met the inclusion criteria.

Results: SDM for early-stage breast cancer treatment was characterized by 10 attributes spanning three levels: 1) Patient perspective: involvement in decision-making, values and preferences regarding treatment options, and deliberative thinking to achieve choice certainty; 2) Healthcare professional perspective: provision of individualized information, psychological support, consultation focused on patients’ best interests, collaborative partnerships with patients, coordinated care delivery, and promotion of person-centered, informed choices; 3) Healthcare system level: fostering a patient-centered healthcare culture.

Conclusions: These findings provide a comprehensive conceptual framework to guide the development of detailed SDM guidelines tailored for early-stage breast cancer patients. Enhanced understanding of SDM can support nurses and healthcare professionals in facilitating collaborative and optimal decision-making processes within oncology care. Furthermore, this study lays the groundwork for developing measurement tools and disease-specific interventions to advance SDM implementation in early-stage breast cancer treatment.

Systematic review registration: PROSPERO (CRD42024587218)

Introduction

Breast cancer was the most prevalent cancer in women worldwide.¹ Advancements in diagnostic testing allow for 90% of breast cancers to be detected at an early stage. Early-stage breast cancer (EBC), classified as Stages 0–III, is highly treatable and shows higher cure and long-term survival rates than other types of cancer.² Given the favorable prognosis of EBC, treatment and follow-up are crucial. However, no standard guidelines or protocols are available on providing optimal follow-up care for patients with EBC.³ Unlike patients with advanced breast cancers, individuals with EBC have multiple treatment options including immunotherapy, hormone therapy, and neoadjuvant therapy.^{4,5} Patients’ overall health and their preferences determine different types of treatment.^{3,6} Therefore, decision-making for optimal treatment of EBC requires careful consideration throughout the illness trajectory.⁶

The term shared decision-making (SDM) emerged in the early 1980s, highlighting the importance of interaction between patients and healthcare professionals, reflecting a shift to patient-centered from disease-centered care.⁷ In existing literature, SDM is often used interchangeably with terms such as ‘informed decision-making,’ ‘clinical decision-making,’ and ‘mutual decision-making,’^{8,9} however, the key attributes that distinguish SDM from these related concepts remain unclear. SDM is generally recognized as a collaborative process centered on communication and partnership between patients and healthcare professionals.^{10,11} SDM is grounded in the exchange of information, integration of patient values and preferences, and the formulation of optimal decisions informed by the best available evidence.^{8,12,13}

International clinical guidelines for breast cancer emphasize the implementation of SDM.^{3,14} However, a lack of consensus on the definition of SDM limits its systematic implementation in clinical practice,

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and the tools to measure SDM for breast cancer are insufficient.¹⁵ Given the unclear definition of SDM in patients with EBC, discussions on effective implementation strategies and outcomes remain unresolved.³ Current studies have examined SDM in various settings, such as breast cancer screening within the oncology field, specifying decision settings (e.g., primary care, emergency department, and oncology), and types of decisions (e.g., treatment, diagnostics, and surveillance).^{16–18} Recent updates in international clinical guidelines for breast cancer emphasize the implementation of SDM.^{3,14} Existing literature emphasize that SDM in EBC involves preference-sensitive decisions among multiple viable treatment options.^{19,20} In the context of EBC treatment, SDM occurs when healthcare professionals actively interact with their patients, and patients proactively express their personal values and priorities.^{8,21–23} To date, previous studies on EBC have focused on surgical treatment, demonstrating that decision-making process is influenced by individual level factors (e.g., patients' understanding, clinicians' support, clinician-patient interaction factors) and healthcare system-level factors (e.g., personalized care, continuity of care, characteristics of the healthcare environment etc.).^{5,24} SDM has benefits in improving decision regret and enhance psychosocial and physical outcomes, quality of life, and patient's trust in their healthcare professionals, and their satisfaction with healthcare.^{8,21,22,25}

However, a unified conceptual definition of SDM within the context of EBC treatment is still lacking,^{15,17,26,27} and the tools to measure SDM are insufficient.¹⁵ Ambiguous definitions make it difficult to implement SDM systematically in clinical practice and assess its outcomes, highlighting the need for a clear conceptual analysis.^{17,27} Hence, establishing a consensus on a clear conceptual definition of SDM within the context of patients with EBC is expected to help implement evidence-based SDM in clinical settings.³ Clarifying the concept's attributes, antecedents, and consequences can enhance effective decision-making and communication between EBC patients and healthcare providers. An integrated conceptual framework can serve as a foundation to support the development and clinical implementation of interventions based on patient preferences and values.²⁸ In detail, recognizing this concept may help patients and clinicians work together to determine their respective roles and responsibilities in implementing SDM, based on communication that is tailored to the patient's abilities, expectations, and needs — positioning the patient as an active decision-making agent in mutual respect.²⁹ Furthermore, this study could provide insights into inspiring comprehensive strategies and activating SDM interventions, ultimately fostering EBC patients' health outcomes and quality of life.”

Therefore, this study aimed to analyze the concept of SDM through a systematic literature review on SDM in patients with EBC. Hence, our study investigated (1) the surrogate and related terms, (2) core attributes, antecedents, consequences of SDM among female patients with EBC to enhance the understanding of conceptual clarity.

Methods

Study design

We used Rodgers' evolutionary concept analysis method to analyze the concept of SDM in patients with EBC.³⁰ This method was deemed suitable because the SDM concept has evolved, particularly considering the importance of social and cultural contexts.³⁰ This study was performed in accordance with the PRISMA guidelines.³¹ The study protocol was registered with PROSPERO (CRD42024587218).

Search strategy

We conducted a systematic literature review using PubMed, CINAHL, PsycINFO, Cochrane Library, and Embase databases to identify studies published between 2015 and 2024. This timeframe was selected to capture contemporary perspectives, applications, and research findings related to SDM in clinical contexts, particularly in oncology.^{19,32–35}

Accordingly, the search was limited to the past decade to focus on the recent conceptualization of SDM in oncology healthcare.³⁵ The search strategy included Medical Subject Headings terms, free-text words, and Boolean operators. The detailed search strategies used for each database are presented in [Supplementary Table S1](#) to ensure transparency and reproducibility.

Inclusion criteria for the review included studies that: (1) conducted with women (age ≥ 18 years) diagnosed with EBC (Stage $\leq$ III); (2) aimed to address the attributes, antecedents, consequences, and thematic relevance of the SDM concept; (3) published in peer-reviewed journals; and (4) written in English. The exclusion criteria were (1) studies with the full text unavailable and (2) conference presentation posters, book chapters, reports, protocols, and gray literature.

Screening

Two researchers (CHM and JHJ) conducted a rigorous literature selection and review. The initial literature search produced 2520 articles. During the screening stage, duplicates ($n = 213$) and non-English articles ($n = 9$) were removed, resulting in 2298 articles that underwent title and abstract screening. Subsequently, 52 studies were selected based on the eligibility criteria. Of these, 36 were excluded for the following reasons: involved non-EBC patients ($n = 29$), were unrelated to SDM ($n = 1$), were discussion papers or literature reviews ($n = 5$), or were duplicates ($n = 1$). Finally, 16 articles were included ([Fig. 1](#)).

Disagreements between the two researchers during data extraction were resolved through group discussions, with a third researcher (SYJ) providing arbitration when necessary.

Quality appraisal

We performed a quality appraisal of the included studies using the Mixed-Methods Appraisal Tool³⁶ displayed in [Supplementary Table S2](#). This tool evaluates five study types: qualitative studies, quantitative descriptive studies, quantitative randomized and non-randomized controlled trials, and mixed-methods studies. Each study type has five evaluation criteria rated as “yes,” “no,” or “cannot tell.” The total score for each study was calculated based on the proportion of “yes” responses, ranging from 0% to 100%. Two reviewers (CHM and JHJ) independently and critically assigned the quality assessment scores.

Among the 16 included studies,^{8,9,21–23,25,37–46} 14 scored above 80%, indicating high methodological quality. However, two randomized controlled trials demonstrated relatively low-quality scores. Considering that this was a concept analysis intended to clarify the definition of SDM, we focused on including all relevant studies, regardless of the quality assessment, to facilitate a deep understanding of the concept.

Data extraction and analysis

Two researchers (CHM and JHJ) independently extracted the data, including the basic information of each study (e.g., first author, publication year, country, research objectives, participants' age, gender, sample size, and reason for SDM). Thematic analysis was applied to extract surrogate terms, related terms, antecedents, attributes, and consequences of the main concept from the literature review.³⁰ Researchers identified patterns repeated throughout the text, recurring patterns were coded. Similarities and differences among the codes were examined, analyzed, and grouped into distinct categories, which were then assigned appropriate labels as main themes. We linked these main themes to the concepts' antecedents, attributes and consequences for providing comprehensive understanding of SDM in EBC context.

To ensure the study's rigor, we rechecked whether the extracted data were consistently integrated into the categories and accurately reflected the themes. We ensured reliability throughout the categorization process by holding discussions and reaching a consensus by involving a third researcher (SYJ) whenever disagreements occurred.

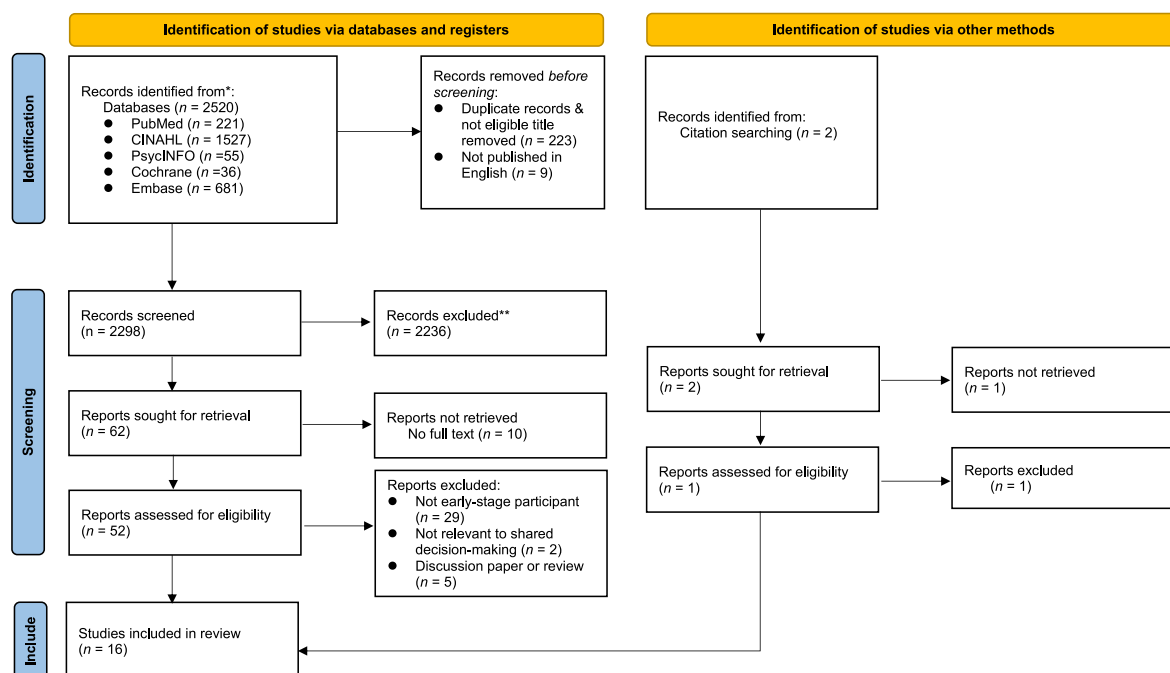


Fig. 1. Flow diagram illustrating the original process of screening and identification of studies.

Results

Characteristics of included studies

The current analysis included quantitative ($n = 8$), qualitative ($n = 6$), and mixed-methods studies ($n = 2$). Most studies were conducted in high-income countries (e.g., France, the USA, the Netherlands, Japan, Australia, Germany, and Denmark). Table 1 presents detailed information on individual studies, including authors, publication year, country, research design and objectives, participant characteristics, and sample size.

Surrogate and related terms

Surrogate terms are synonyms or substitutes for the original concept. The studies included surrogate terms, such as mutual SDM, informed SDM, and preference-sensitive decision-making.^{8,9} Related terms are concepts closely linked to SDM but include only some attributes; thus, they do not fully encompass the concept. For example, clinical decision-making,³¹ and healthcare decision-making²¹ represent only the physician's role in decision-making and exclude patient participation, lacking the “shared” attribute. Additionally, terms such as treatment decision-making²⁵ and surgical decision-making^{21,25} are limited to specific aspects of SDM and do not encapsulate all attributes of the concept.

Antecedents, attributes, and consequences of SDM for EBC treatment

The antecedents, attributes, and consequences of SDM in patients with EBC are summarized in Table 2. More information about these antecedents, attributes, and consequences is presented with specific references in Supplementary Table S3.

Antecedents

Antecedents are factors or causes that necessitate SDM in patients with EBC. These were classified into five patient-related, two healthcare professional-related, and two healthcare system-related factors.

Regarding patient-related factors, SDM in patients with EBC may be affected by health literacy, autonomy, information needs, responsibility

for healthcare, and psycho-emotional distress. Health literacy is linked to patients' competency in processing disease-related information, and decision-making.^{22,25} Autonomy represents the ability of patients to choose their preferred treatment method while holding fundamental decision-making power concerning their therapeutic options.^{23,25,46} Information needs reflect the desire of patients to acquire unmet information regarding prognosis, treatment options, and potential benefits and harms of each treatment.^{8,21} Responsibility for healthcare is related to patients' willingness and capacity to restore their body to the best possible state of health.^{9,23} Finally, psycho-emotional distress typically occurs before SDM.²² Patients diagnosed with EBC may lack comprehensive knowledge about their disease and treatment, confronting complexity and ambiguity, resulting in psycho-emotional instability.²⁵

Regarding healthcare professional-related factors, attitudes toward and competence in SDM were revealed as antecedents of SDM in EBC treatment. Paternalism refers to the traditional attitude of healthcare professionals, which is characterized by the implicit persuasion of patients to consent to their treatment recommendations.²² This attitude, in which healthcare professionals dominate treatment decisions, may act as a barrier to SDM. Furthermore, healthcare professionals' competence in SDM can help them actively participate in treatment decisions and facilitate effective communication with patients.^{9,22}

For healthcare system factors, healthcare institutions provided adequate resources, such as sufficient healthcare personnel,²² adequate consultation time to reach decisions,²¹ and training programs for healthcare professionals.²² In addition, respect for patient autonomy should be established as part of the institutions' organizational culture.^{9,25}

Attributes

Attributes are characteristics that demonstrate how a particular phenomenon manifests. In this study, the defining attributes identified were divided into three categories and 10 attributes, as follows.

Perspective of patients. Once the SDM process begins, patients with EBC receive comprehensive information on their disease, treatment options, complications, and follow-up care.²¹ Accordingly, patients' “active involvement in decision-making” is essential to thoroughly understand

Table 1Descriptives of studies included in this concept analysis ($N = 16$).

Authors (Year)/ Country [reference]	Study aims	Study design	Participants (sample size, n) /Age (mean, year)	Reason of SDM	Type of decision aids
Durif-Bruckert et al. (2015)/ France ²¹	To explore the understanding of patient perceptions on SDM in the doctor-patient discussions regarding surgical treatment for EBC.	MMR	- Survey Patients ($n = 132$)/ Age (59) - Interview and observation Patients ($n = 73$)/ Age (NR)	Surgery: Tumorectomy, mastectomy	Chart-based patient decision aid
Alam et al. (2016)/ USA ²²	To assess the acceptability and feasibility of encounter decision aids tailored for women with low socioeconomic status and low literacy in EBC.	MMR	- Survey Patients ($n = 249$)/ Age (NR) HCP ($n = 5$) - Interview Patients ($n = 10$)/ Age (56.8) HCP ($n = 5$)	Surgery: Lumpectomy with RT, Mastectomy	Paper-based & Web-based patient decision aid
Engelhardt et al. (2016)/ Netherlands ²³	To evaluate implicit persuasion's role as a barrier to SDM in adjuvant cancer treatment.	Cross-sectional	- Patients ($n = 105$)/ Age (59) - HCP ($n = 18$)	Non-surgical: Chemotherapy, endocrine therapy	N/A
Hawley et al. (2016)/USA ²⁴	To develop and assess a web-based decision aid for locoregional breast cancer treatment that differs from existing breast cancer patient information or decision aids.	RCT	Patients IG ($n = 51$), CG ($n = 50$) /Age (53)	Surgery: BCT, mastectomy	Web-based patient decision aid
Osaka & Nakayama (2017)/Japan ²⁵	To evaluate the impact of a decision aid with patient narratives on decisional conflict in surgery choice.	RCT	Patients IG 1 ($n = 58$), IG 2 ($n = 61$), CG ($n = 55$) / Age (49.5)	Surgery: BCT, then RT or, mastectomy or, breast reconstruction & mastectomy	Paper-based patient decision aid
Herrmann et al. (2017)/ Australia ²⁶	To examine women's use of and perceived benefits from a decision aid in helping them make decisions about NAST.	Qualitative	Patients ($n = 20$) / Age (52)	Surgery	Paper-based & Web-based patient decision aids
Aminae et al. (2019)/Iran ²⁷	To assess the level of participation in decision-making regarding surgery among women with EBC.	Cross-sectional	Patients ($n = 328$) / Age (45.7)	Surgery	N/A
Berger-Höger et al. (2019)/ Germany ²⁸	To examine whether an informed SDM intervention for women with ductal carcinoma in situ improves the mutual SDM behavior of patients and healthcare providers.	RCT	Patients IG ($n = 36$) / Age (58.3) CG ($n = 28$) / Age (57.8)	Primary treatment	Paper based patient decision aid
Gruß & McMullen (2019)/USA ²⁹	To evaluate how clinicians incorporate patients' goals and values into breast cancer surgery consultations within an integrated healthcare system.	Qualitative	- Patients ($n = 23$) / Age (59.3) - HCP ($n = 14$)	Surgery: Mastectomy, lumpectomy	SDM conversation tool for physicians (not specified paper or web-based)
Engelhardt et al. (2020)/ Netherlands ³⁰	To examine the relationship between SDM, as assessed by independent observers or perceived by patients, and patients' trust in their oncologist.	Cross-sectional	Patients ($n = 101$) / Age (60.6)	Non-surgical: Adjuvant systematic treatment including chemotherapy, endocrine therapy or both	N/A
Raphael et al. (2020)/ Netherlands ¹⁰	To determine key attributes in radiotherapy decision-making for the development of a breast cancer patient decision aid.	Qualitative	- Patients ($n = 15$) / Age (59) - HCP ($n = 15$)	Non-surgical: RT	Web-based patient decision aids
Durand et al. (2021)/USA ³¹	To explore ways to support women of diverse socioeconomic statuses in making breast cancer surgery decisions.	RCT	Patients ($n = 616$) / Age (59.7)	Surgery: Lumpectomy with RT, Mastectomy	Paper-based patient decisions aids
Tang et al. (2023)/ China ³²	To investigate the factors influencing perceived participation in primary surgery decision-making among Chinese patients with EBC.	Cross-sectional	Patients ($n = 222$) / Age (NR)	Surgery: Lumpectomy, mastectomy	N/A
Ankersmid et al. (2024)/ Netherlands ³³	To assess the effectiveness of implementing the Breast Cancer Surveillance Decision Aid.	Qualitative	Patients ($n = 507$) / Age (62)	Follow-up after surgery	Web-based patient decision aids
Pan et al. (2024)/ China ⁹	To examine breast cancer patients' perspectives and requirements concerning the use of web-based surgical decision aids.	Qualitative	Patients ($n = 16$) / Age (50)	Surgery	Web-based patient decision aids
Søndergaard et al. (2024)/ Denmark ³⁴	To explore oncologists' and nurses' experiences with SDM using the Decision Helper, a decision aid utilized during consultations.	Qualitative	HCP ($n = 20$)	Non-surgical: Adjuvant RT after BCT	Paper-based patient decision aids

BCT, Breast conserving therapy; CG, Control group; EBC, early-stage breast cancer; HCP, Healthcare Professionals; IG, Intervention group; MMR, Mixed method research; N/A, Not applicable; NAST, Neoadjuvant systemic therapy; NR, Not reported; RT, Radiation therapy; RCT, Randomized controlled trials; SDM, Shared decision making; SES, Socioeconomic status.

the information and select treatment and follow-up options that align with their preferences.^{8,21} Patients' decisions on various types of treatment are significantly influenced by their values and preferences because of the clinical equipoise inherent in treatment and follow-up care for EBC.⁴¹ Accordingly, "patients' values and preferences on treatment options" should be considered and expressed through value clarification.^{21,23}

"Deliberation thinking for choice certainty" was identified as another attribute from the patient perspectives. Deliberation by patients with

EBC involves taking sufficient time before making a decision to select the treatment or follow-up options that provide clear benefits while simultaneously aligning with their values, preferences, and individual circumstances.^{21,23}

Perspective of healthcare professionals. Providing "individualized information" for EBC patients is one attribute of SDM pertaining to healthcare professionals.^{23,47} Individualized information to patients including

Table 2

Antecedents, attributes, and consequences of SDM in EBC treatment.

Category	Antecedents	Attributes	Consequences
Perspective of patients	- Health literacy - Autonomy - Information needs - Responsibility for healthcare - Psycho-emotional distress	- Involvement in decision-making - Values and preferences about treatment options - Deliberative thinking for choice certainty	- Knowledge about treatment - Decision satisfaction or conflicts - Quality of life
Perspective of healthcare professionals	- Attitudes toward SDM - Competence in SDM	- Individualized information - Consultation regarding patients' best interests - Psychological support - Collaborative partnerships with patients - Provision of coordinated care - Person-centered, informed choice	- Positive experience - Job satisfaction - Team cooperation
Healthcare system level	- Healthcare resources - Respecting patient autonomy	- Patient-centered healthcare culture	- Care quality - Health equity

EBC, Early-stage breast cancer; SDM, Shared decision making.

the disease, treatment, complications, and follow-up examinations should be reliable and of high quality within the breast cancer treatment.^{24,47,48} Furthermore, this information should comprehensively cover the benefits, harms, and potential consequences of each treatment option and adequately reflect the patients' values and preferences.

In terms of "consultation regarding patients' best interests," healthcare professionals should provide high-quality evidence-based treatment options considering the best interests of the patient.⁴⁷ This may enable patients to make rational decisions as active participants in the decision-making process.²² "Psychological support" from healthcare professionals can help patients to alleviate their emotional burdens, such as anxiety, stress, and fear, before selecting the most appropriate treatment.^{22,25}

In the context of EBC treatment, SDM involves a "collaborative partnership with the patient".^{22,46} Before deciding on treatment or post-treatment surveillance, patients become aware that various options are being considered from diverse professional perspectives to foster trust, emotional stability, and active participation.²² Thus, healthcare professionals should acknowledge patients' experience and knowledge to achieve common healthcare goals, which can positively affect SDM implementation.^{18,46}

"Provision of coordinated care" involves collaboration among healthcare professionals from multiple disciplines, including nurses, radiation oncologists, breast surgeons, plastic surgeons, and hematological oncology specialists.^{22,46} The integration of a wide range of knowledge, skills, and up-to-date information through coordinated care between healthcare professionals from different specialties can enable them to provide the best treatment options for patients with EBC.^{8,22}

If a "person-centered, informed choice" is made during SDM, patients can express their decisions clearly to healthcare professionals.⁹ Finally, it can facilitate the selection of the best treatment options that meet patients' priorities and preferences.^{9,22}

Healthcare system level. Creating "a patient-centered healthcare culture" is an attribute of SDM at the healthcare system level.⁴⁷ Healthcare institutions must establish a culture that facilitates effective communication and provides integrated healthcare services that align with patients' personal goals, values, and preferences.²⁴ In addition, healthcare institutions should foster a patient-centered approach and encourage multidisciplinary teamwork, utilization of decision-support tools, and development of SDM protocols.^{46,48}

Consequences

The consequences of SDM are the outcomes or events resulting from this concept. These consequences were classified into three patient-related, three healthcare professional-related, and two healthcare system-related factors.

First, effective SDM from the perspective of patients with EBC can lead to better knowledge about treatment²² and improve their confidence in and satisfaction with communication with healthcare professionals.^{22,25} In addition, successful SDM can improve patients' perceptions regarding their short- and long-term quality of life.^{8,21} Second, optimal SDM implementation can promote healthcare professionals' positive experiences including reduced time and burden and increased job satisfaction,²³ potentially enhancing team cooperation.⁴⁷ In contrast, suboptimal SDM implementation may be related to decision conflict.³⁸ With respect to healthcare system-related factors, effective SDM can lead to better care quality.^{46,47} Furthermore, SDM can promote health equity by facilitating healthcare access for vulnerable populations with limited health literacy or low socioeconomic status.²²

Empirical referents

Existing SDM tools for patient self-report questionnaires include the SDM-9 Questionnaire.⁴⁹ The Observing Patient Involvement in SDM (OPTION)-12 Scale was developed as a self-report questionnaire for healthcare professionals.⁵⁰ Others include the Observer OPTION-5,⁵¹ and Multifocal Approach to the Sharing in SDM inventory.⁵² Unfortunately, these scales are generic SDM tools rather than tailored specifically to capture the attributes of SDM in patients with EBC.

Discussion

Main findings

The defining attributes of SDM identified in this study are as follows: (1) three patient-related attributes, including "involvement in decision-making," "values and preferences about treatment options," and "deliberative thinking for choice certainty"; (2) six healthcare professional-related attributes, including "individualized information," "consultation regarding patients' best interests," "psychological support," "collaborative partnership with patients," "provision of coordinated care," and "person-centered, informed choice"; and (3) one healthcare system-related attribute, which is "patient-centered healthcare culture."

Notably, in this study, caregiver involvement in SDM did not emerge as an attribute of SDM in patients with EBC compared with those of SDM in patients with advanced breast cancer. Patients with advanced breast cancer often face physical frailty, cognitive decline, emotional distress, or difficulty accepting the reality of the disease and treatment,⁵³ highlighting the critical role of family caregivers during treatment and disease progression. Moreover, active involvement in treatment decisions is challenging for patients with terminal cancer approaching the end of

life²⁶ and those with pediatric cancer who lack or have diminished rational decision-making capabilities.

Adequate deliberation time was found to be a key attribute of SDM in patients with EBC. Thus, decision aids for patients and decision coaching from healthcare professionals may be useful to ensure that informed, patient-centered treatment decisions are made.²³ Moreover, the attributes of SDM identified within the context of patients with EBC, such as “provision of coordinated care,” “psychological support,” and “collaborative partnership with patients,” differed from those previously identified in systematic reviews conducted in the screening or oncology nursing or chronic illness context.^{54,55} Our study has expanded the attributes of SDM to encompass the patient–clinician relationship towards the professional responsibilities of healthcare professionals and healthcare culture in which SDM occurs, thereby guiding SDM practices based on this refined concept within the EBC context. The initial conceptualization of SDM was predominantly defined from a medical perspective, emphasizing the role of clinicians in serving patients’ best interests and focusing on the patient–clinician relationship.⁵⁶ Conversely, analyses of studies from the past decade on SDM in patients with EBC have revealed the increased significance of multidisciplinary healthcare collaboration.^{8,23}

Our concept analysis emphasized collaborative partnerships with patients and coordinated care between multidisciplinary healthcare professionals.^{8,23} However, the reviewed studies did not extensively provide detailed information on how to collaborate with patients and the specific roles of various healthcare professionals. Therefore, more qualitative studies on the perspectives of multiple healthcare professionals regarding SDM are required to clarify the concept of SDM in the context of EBC treatment.

SDM in patients with EBC is influenced primarily by modifiable factors associated with patients, healthcare professionals, and healthcare institutions. Patient-related factors include health literacy, autonomy, information needs, responsibility for healthcare, and psycho-emotional distress. Healthcare professional-related factors include attitudes and competencies regarding SDM, along with healthcare resources and an institutional environment that respects patient autonomy. Specifically, patients’ limited health literacy, inadequate information-sharing, and heightened psycho-emotional distress may restrict their choices regarding treatment or surveillance options, thereby adversely affecting their health outcomes.²² Hence, it is crucial to understand the psychological and emotional distress patients experience when making treatment decisions and provide tailored counseling and interventions aimed at emotional stabilization.

Healthcare professionals’ attitudes toward SDM and their competencies were identified as significant influencing factors. When healthcare professionals demonstrate openness toward SDM, supported by professional knowledge and effective communication skills, they can effectively implement high-quality patient-centered care. Therefore, enhancing these competencies through targeted training is essential. Finally, healthcare institutions should structurally support the activation of SDM by ensuring adequate human and material resources and providing educational programs for healthcare professionals.⁵⁷ Additionally, healthcare institutions must foster an environment that explicitly respects patient autonomy and only allow individuals whose involvement has been explicitly consented to or requested by the patient.

Successful SDM can help patients with EBC obtain sufficient knowledge, decisional satisfaction, and improved quality of life. Furthermore, it can lead to healthcare professionals’ positive experience and job satisfaction, as well as good team cooperation. However, these consequences are commonly limited to self-reported outcomes. Therefore, more studies are required to identify objective outcomes, such as treatment adherence, treatment consequences, and consultation time, when implementing optimal SDM for patients undergoing treatment for EBC. Furthermore, from a healthcare system level, the findings demonstrated improvements in care quality and health equity.⁵⁸ Our findings suggest that optimal SDM is not solely dependent on the individual competencies of healthcare professionals or patients.

Currently, no instruments are specifically tailored to measure SDM in patients with EBC.⁵⁹ Although existing instruments include attributes similar to those identified in this study, such as “involvement in decision-making” and “individualized information,” they lack attributes that reflect the relationships among patients and multidisciplinary healthcare teams or integrated approaches, such as “provision of coordinated care,” “deliberative thinking for choice certainty,” and “psychological support.” Therefore, future research should focus on developing measurement tools that incorporate these attributes to implement SDM effectively in patients with EBC in clinical practice and accurately evaluate the associated outcomes.⁶⁰

Implications for nursing practice and research

Clarifying the concept of SDM within the specific context of patients with EBC will facilitate its consistent use in clinical practice and research. Our findings provide foundational data for developing tailored SDM interventions for patients with EBC. Furthermore, the development of specific tools to evaluate SDM in patients with EBC could enable the scientific evaluation of implementation benefits, thereby offering practical implications for protocol development and regular monitoring in clinical practice. Healthcare professionals should activate SDM by cooperating closely with patients using multidisciplinary healthcare approaches.

Limitations

This study had some limitations. First, although the literature search was systematically conducted using major databases, relevant studies published in journals that were not indexed by the selected databases may have been omitted. Second, as most of the included studies were based on healthcare systems in high-income Western countries, such as the Netherlands, Denmark, and the USA, the findings may reflect specific cultural and systemic characteristics inherent to these healthcare systems. In addition, this study included only female patients with EBC; therefore, the generalizability of these findings to other populations is limited. Therefore, caution is needed when generalizing the results to female patients with EBC in low-income or non-Western countries, considering that healthcare contexts differ significantly worldwide. Nevertheless, our findings can be a cornerstone of implementing SDM in EBC context. Further research is needed to address the underrepresented populations, including men and individuals identifying as Lesbian, Gay, Bisexual, Transgender, Queer or Questioning (LGBTQ) to support the comprehensive implementation of SDM across diverse breast cancer populations and cultural healthcare contexts. Such efforts will offer valuable insights in cultural variations in the implementation of SDM among individuals with EBC population.⁶¹

Finally, as most of the analyzed studies primarily focused on interactions between patients and healthcare professionals, concepts related to broader healthcare systems might be insufficiently captured. Future research should include diverse patients, caregivers, and healthcare professionals from various healthcare institutions to better reflect the evolving attributes of SDM for EBC treatment across different periods and environments.

Conclusions

This study identified 10 key attributes of SDM related to treatment decisions in patients with EBC, encompassing perspectives from patients, healthcare professionals, and healthcare systems. Utilizing Rodgers’ evolutionary concept analysis, we have clarified and refined the definition of SDM within the context of EBC treatment, thereby advancing the understanding of its core attributes. Establishing this conceptual clarity can help clinicians, nurses, and other healthcare providers enhance their awareness and implementation of SDM in clinical practice for EBC patients. Building on these findings, future

research should focus on developing disease-specific SDM measurement tools and designing tailored SDM interventions that address the unique needs of patients undergoing EBC treatment.

CRedit authorship contribution statement

HMC: Conceptualization, study design, data curation, data analysis, manuscript writing, and critical revision of the manuscript. **HJJ:** Conceptualization, data analysis, manuscript writing, and critical revision of the manuscript. **HJM:** Study design, data curation, data analysis, and critical revision of the manuscript. **YGL:** Study design, data curation, data analysis, and critical revision of the manuscript. **YJS:** Conceptualization, study design, data curation, study supervision, manuscript writing, and critical revision of the manuscript. All authors have read and approved the final manuscript.

Ethics statement

This study was approved by the Institutional Review Board of Chung-Ang University (Approval No. 1041078-20240824-HR-229). As the study involved a literature review and concept analysis without direct participation of human subjects, written informed consent was not required.

Data availability statement

The data that supports the findings of this study are available from the corresponding author, Youn-Jung Son, upon reasonable request.

Declaration of generative AI and AI-assisted technologies in the writing process

No AI tools/services were used during the preparation of this work.

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Declaration of competing interest

The authors declare no conflicts of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.apjon.2025.100775>.

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