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A scoping review of decision regret in non-communicable diseases: The emerging roles of patient-clinician communication, psychological aspects, and medical outcomes

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ABSTRACT

Objective: To map the existing literature on decision regret among patients with non-communicable diseases (NCDs) and develop an integrated framework to understand its impact on patient outcomes and healthcare processes.

Methods: A systematic search of PubMed, Embase, CINAHL, Cochrane Library, Google Scholar, and Scopus databases was conducted until January 2024 using the "Population, Concept, Context" framework. The review identified and analyzed 28 studies published between 2005 and 2023 in North America and Europe.

Results: Decision regret primarily arises from mismatches between expected and actual treatment outcomes and is strongly influenced by patient-clinician communication quality. The need for improved informed consent processes and enhanced communication strategies to mitigate regret emerged as prevalent themes. A hypothetical theoretical path was developed to define the relationship between patient expectations, medical outcomes, and emotional responses.

Conclusion: Enhanced communication and personalized treatment plans are crucial for addressing the multifaceted nature of regret in healthcare. Improved patient-clinician communication and informed consent processes can significantly reduce decision regret.

Practice Implications: Healthcare providers should focus on effective communication and education to personalize care strategies and align treatment decisions with patient expectations. This could ultimately reduce decision regret and improve patient outcomes.

1. Introduction

Advancements in medical technology have expanded therapeutic options for treating non-communicable diseases (NCDs), creating opportunities and challenges in decision-making [1]. NCDs are non-transmissible, chronic, and slow-progressing, arising from genetic, physiological, environmental, and behavioral factors [2]. They account for 71 % of global mortality, highlighting their significant burden [1,2]. The complexity of NCD treatment choices often leaves patients navigating multiple therapeutic pathways, each with distinct benefits and drawbacks.

The decision-making process is influenced by personal preferences, health literacy levels, and the support and information provided by healthcare professionals [3]. In this intricate healthcare landscape, decision regret emerges as a pivotal factor [4]. Decision regret encompasses feelings of remorse or distress about healthcare decisions and

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indicates the efficacy of these decisions [4]. It can manifest as outcome regret, process regret, or chosen option regret, each rooted in different aspects of the decision-making journey [5,6].

Outcome regret typically arises when patients compare the actual outcomes of their decisions to hypothetically better outcomes had different choices been made [7]. The proximity of these alternative outcomes, the dichotomy between action and inaction, and a sense of personal responsibility play crucial roles in its development. Process regret stems from dissatisfaction with the decision-making process itself, such as inadequate information gathering or lack of advice seeking Chosen option regret involves second-guessing the selected treatment option among available alternatives, often triggered by uncertainty, conflicting values, or insufficient support [7].

Understanding these various facets of decision regret is essential for devising effective interventions to prevent or manage it, particularly in patients with NCDs [8]. Emotional amplification, which may be more pronounced in this patient group, further complicates the landscape, necessitating heightened awareness and response strategies from clinicians (e.g., physicians, nurses, and other allied healthcare professionals) and healthcare providers [9]. This complexity is mirrored in fields like oncology, where decision regret is notably prevalent due to the abundance of similarly effective treatment options [10]. Substantial decision regret has been observed, particularly in contexts where multiple oncological treatment options, such as for breast or prostate cancer, offer similar efficacy [10,11].

Aligning treatment decisions with patient preferences, values, and expectations is critical [12]. The higher prevalence of decision regret in NCDs due to diverse therapeutic choices underscores the need to address these factors to improve outcomes and healthcare quality [13]. In this context, Shared Decision-Making (SDM) [13], a collaborative approach where healthcare professionals—including doctors, senior nurses, and other clinicians—and patients jointly make decisions based on the best evidence and patient values, has been effective in mitigating decisional regret [14]. Early and active patient involvement through SDM could help prevent decision regret, ensure adherence to treatment plans, and foster a trustful patient-healthcare provider relationship [15].

Despite the recognized importance of addressing decision regret in NCDs, the literature remains fragmented, and descriptive data is scarce [5]. This shortage of cohesive and comprehensive information is a critical barrier to developing effective interventions and policies. For this reason, this study aimed to map the spectrum of decision regret experienced by patients with NCDs and construct a detailed and all-encompassing framework that encapsulates every significant facet of the phenomenon.

2. Methods

2.1. Design

This scoping review is designed in strict accordance with the Joanna Briggs Institute (JBI) methodology [16,17]. Adhering to a previously published protocol [5], this review systematically collates and analyzes literature on decision regret in patients with NCDs. The choice of a scoping review is pivotal in this context due to its effectiveness in exploring broad topics where the existing research is varied and not comprehensively synthesized [16,17]. This approach is ideal for identifying key concepts, types of evidence, and notable gaps in the current research landscape. To ensure methodological rigor and clarity in reporting, this review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) [18]. The research question guiding the study is: “What is the spectrum of decision regret experienced by patients with NCDs, and how does this mapping facilitate the construction of a comprehensive framework that encapsulates the key facets of this phenomenon, including population characteristics, conceptual elements, and contextual influences?”.

2.2. Search strategy

The search strategy for this scoping review was based on the “Population, Concept, Context” (PCC) framework [17], as shown in Table 1.

The population is patients with NCDs, including individuals with predispositions to certain NCDs, such as those with cancer predisposition genes [19]. This broader definition allows for the exploration of decision regret in a spectrum of scenarios, ranging from those actively managing an NCD to those considering preventive measures for diseases they are at high risk for, thus encompassing a wider array of decision-making contexts within the field of NCDs.

The concept in defining the queries pertains to “decision regret” as experienced by the population in relation to a specific health-related decision. Decision regret is defined as a multifaceted emotional and cognitive response that occurs when patients feel dissatisfaction or distress regarding a healthcare decision they have made [4]. This includes various dimensions of decision regret, such as outcome regret, which arises when patients feel dissatisfied with the results of their decision; process regret, which is related to dissatisfaction with the decision-making process itself, including how information was presented and choices were made; and chosen option regret, which involves second-guessing the selected treatment option among available alternatives [5,6]. Additionally, our review examines how the quality of patient-clinician communication influences these aspects of decision regret, the extent of patient involvement in the decision-making process, and the alignment of the decisions with patient values and preferences. The role of SDM is also a critical focus as we explore how SDM practices could mitigate decision regret by ensuring that patients are well-informed, actively engaged, and supported throughout their healthcare journey. For this reason, SDM is considered a proxy concept in our analysis, representing the efficacy of communication and decision support in reducing decision regret.

The context in this review relates to any healthcare setting where decision regret might occur in patients with NCDs. This includes a wide range of healthcare environments, such as hospitals, outpatient clinics, and community care settings, where patients with NCDs make critical health-related decisions. The review considers various types of medical interventions, from surgical procedures and pharmacological treatments to lifestyle modifications and preventive measures. Additionally, the context encompasses diverse geographical regions and healthcare systems, acknowledging that decision regret may manifest differently depending on cultural, socioeconomic, and healthcare infrastructure

Table 1
Overview of the PCC Framework.

PCC Component	Description
Population	Patients with NCDs, including individuals predisposed to certain NCDs (e.g., those with cancer predisposition genes). This encompasses patients actively managing an NCD and those considering preventive measures for high-risk diseases.
Concept	Decision regret experienced by patients in relation to specific health-related decisions. This includes outcome regret (dissatisfaction with the results), process regret (dissatisfaction with the decision-making process), and chosen option regret (second-guessing the selected treatment). The concept also explores how these aspects are influenced by patient-clinician communication, patient involvement in decision-making, and alignment with patient values and preferences. SDM is considered a proxy for effective communication and decision support, playing a crucial role in mitigating decision regret.
Context	Any healthcare settings where decision regret might occur among patients with NCDs, including hospitals, outpatient clinics, and community care settings. The review also considers the impact of different types of medical interventions, geographical regions, and healthcare systems. This broad context helps to capture how cultural, socioeconomic, and healthcare infrastructure factors influence the experience of decision regret.

factors. According to the research question of this study, this review aims to capture a comprehensive understanding of how different healthcare settings and conditions influence the experience and impact of decision regret among patients with NCDs by examining decision regret across these varied contexts.

These components guided the development of specific queries for each database, including PubMed, Embase, CINAHL, Cochrane Library, Google Scholar, and Scopus, ensuring a comprehensive and focused search. The search strategy was tailored to each database, employing a combination of MeSH terms, Emtree terms, and text words relevant to NCDs and decision regret. A detailed outline of these database-specific search strategies, including the precise queries used, is provided in Supplementary File 1. In constructing the search queries, a comprehensive approach was adopted, encompassing a wide range of NCDs as defined by the thesaurus of each database. This inclusive strategy involved combining various NCD terms with 'OR' to capture the extensive spectrum of conditions within the population category. Similarly, each term within the concept of 'decision regret' was integrated using 'OR'. The query did not define the context to add sensitivity over specificity in the final search. To cohesively link the elements under the PCC framework (i.e., population and concept), 'AND' was utilized. This approach ensured adequate degrees of specificity to the search, capturing diverse aspects of decision regret across different NCDs in all healthcare scenarios. The searches were performed up to January 2024.

2.3. Inclusion/exclusion criteria

Inclusion criteria included studies focusing on adult patients with NCDs or cancer predisposition genes and research addressing decision regret in the context of health-related decisions. The literature review was not limited to English language publications; it also considered studies in other languages, provided they are available in HTML format to facilitate internet-based translation. The inclusion criteria also cover a range of document types, including research articles, reviews, and grey literature, such as conference papers and dissertations. Exclusion criteria involved studies not directly related to NCDs or decision regret, and literature that did not offer analysis or theoretical insights into decision regret was excluded.

2.4. Study selection

All identified articles were collected and uploaded to the reference manager Zotero [20], with duplicates removed post-search. Two independent reviewers screened titles and abstracts against the review inclusion criteria using Rayyan [21]. Subsequently, the two reviewers assessed the full texts of selected papers in detail, in line with the inclusion criteria. Reasons for excluding full-text studies that did not meet these criteria were recorded and reported. Any disagreements between reviewers were resolved through discussion or, when necessary, consultation with the study team. The results of this search and selection process have been comprehensively reported in the final scoping review, in accordance with the PRISMA-ScR guidelines.

2.5. Data extraction and synthesis

Data was extracted from the included papers in the scoping review by two independent reviewers using a specially developed data extraction tool. This tool allowed for the collection of specific details about the population, concept, context, study methods, and key findings, all pertinent to the review's objectives. The tool was modified and revised as necessary throughout the data extraction process. Any modifications made are detailed in the full scoping review report. Disagreements between reviewers were resolved through discussion or, if required, consultation with the study team. In some cases, authors of the papers were contacted for missing or additional data. In line with the JBI guidelines, the extracted data was presented in diagrammatic and tabular forms, aligning with the objectives of the scoping review. The data was descriptively summarized, focusing on organizing results to reflect the review question and specific subquestions. A narrative summary accompanied the tabulated or charted results, elucidating how these results relate to the review's aims and objectives.

This study utilised a mind map to systematically organize and connect the data extracted from the literature [22]. This methodology was strategic in identifying key themes and patterns, subsequently forming the basis of the developed conceptual framework. Careful categorization of these themes ensured the robustness and comprehensiveness of the framework: initially, relevant themes from the included studies were identified and discussed by two authors who agreed to group these themes logically, and the grouped themes were discussed with a third author who provided an evaluation and then shared with the entire group of authors. The transition from the mind map to a structured framework was guided by the interrelationships among the identified themes and a consensus discussion among authors. Visual representations of both the mind map and the conceptual framework were included to enhance clarity and understanding, illustrating the intricate connections and insights central to the study's findings.

3. Results

3.1. Study selection

The PRISMA 2020 flow diagram was utilized to chart the study selection process (Fig. 1). Initially, 12 records were identified through citation searching. In the database search, 82 records were identified: 15 from PubMed, 51 from Embase, 4 from CINAHL, 3 from Cochrane, 7 from Google Scholar, and 2 from Scopus. After removing 23 duplicate records, 59 records were screened. Of these, 33 records were excluded for not focusing on decision regret (15 records) or non-communicable diseases (18 records).

The remaining 26 records were sought for retrieval and assessed for eligibility. Three were excluded for not focusing on decision regret. Ultimately, 28 reports of included studies were identified and analyzed for the scoping review [10,23–49].

3.2. Study characteristics

As described in Table 2, the distribution of included articles showed that most were published between 2015 and 2023, accounting for 89.3 % of the total [23–29,32,33–43,45,46–49], while a smaller portion, 10.7 %, was published from 2005 to 2014 [10,30,31,44].

Geographically, as shown in Fig. 2, the articles primarily originated from North America (46.4 %) [27,28,30,32,33,35,36,38,39,42,44,45,49], and Europe (39.3 %) [24–26,29,31,34,37,40,41,43,48] with additional contributions from Australia & New Zealand (10.7 %) [23,46,47] and Asia (3.6 %) [10].

According to the World Bank country classification by income level, the articles predominantly came from high-income countries [23–49], comprising 96.4 % of the total, with a single article (3.6 %) from an upper-middle-income country [10]. The majority were journal articles [10,23–25,27,29–32,34,35,37–44,46,47–49], representing 82.1 % of the total, while conference proceedings or abstracts made up 17.9 % [26,28,33,36,45]. In terms of study design, observational studies were the most common at 60.7 % [23,30–36,38,39,40,42,43,44,46,47,49], followed by qualitative studies (14.3 %) [27,28,41,48], experimental designs (10.7 %) [24–26,45], and literature reviews (14.3 %) [10,29,37]. Supplementary File 1 presents a consolidated table summarizing the papers included in the review.

3.3. Patient regret

Drawing from the findings of the included publications, the concept of patient regret emerged as a multifaceted and complex issue within the

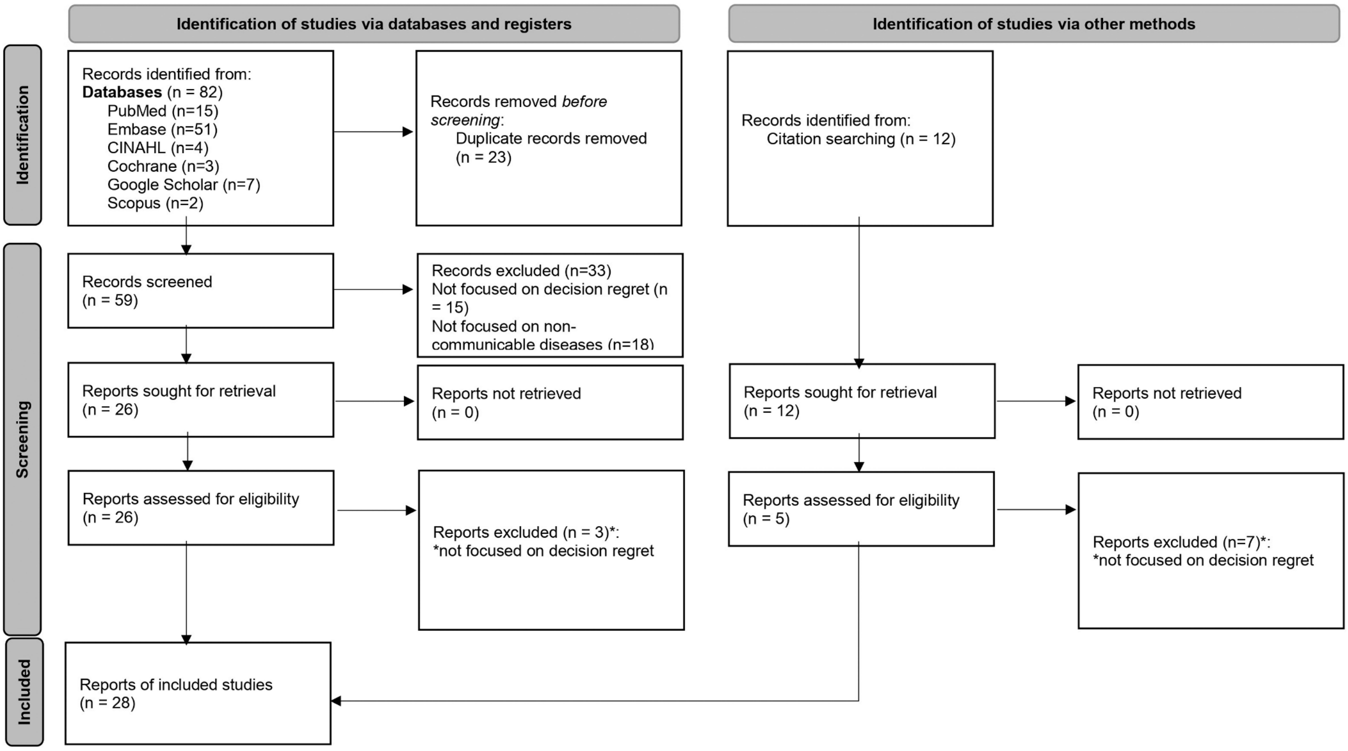

Fig. 1. PRISMA 2020 flow diagram.

Table 2
Document characteristics.

	Included articles ($n = 28$)	
	Count	*%*
Years of publication		
2005 to 2014	3	10.7
2015 to 2023	25	89.3
Geographic region		
Asia	1	3.6
Australia & New Zeland	3	10.7
Europe	11	39.3
Middle East	0	0
North America	13	46.4
Country economy		
Upper middle income	1	3.6
High Income	27	96.4
Type of publication		
Journal article	23	82.1
Conference proceeding or abstract	5	17.9
Study design		
Literature review	3	10.7
Observational	17	60.7
Experimental design	4	14.3
Mixed methods	0	0
Qualitative	4	14.3

context of medical decision-making and outcomes [10,23–49]. Patient regret in the healthcare context was defined in the included publications as a multifaceted emotional and cognitive response that occurs when patients feel dissatisfaction or distress about a medical decision they have made or participated in [10,23–49]. It typically arises from a discrepancy between a patient's expectations and the actual outcome of a healthcare intervention, whether it be a surgical procedure, treatment plan, or any other medical decision. This regret is not only about the outcome itself but also encompasses feelings about the decision-making process, including factors such as inadequate information, perceived lack of control, or misaligned expectations.

This phenomenon often stems from the intricate interplay between patients' expectations, the realities of medical procedures, and the aftermath of healthcare decisions [10,25,29,37–39,42]. Central to this issue is the observation that patients, when confronted with significant healthcare choices, may not always possess a comprehensive understanding or awareness of potential outcomes [24,26,28,33,35,40,45,46]. This knowledge gap could lead to feelings of regret, particularly if the actual results of a medical procedure fall short of their initial expectations [28,40]. The included literature underscored the prevalence of this experience across various healthcare settings.

Moreover, the significance of the patient-clinician relationship in mitigating feelings of regret is a recurring theme in these studies [10,24,26,34,35,48,49]. "Clinicians" refers to all healthcare professionals, including doctors, nurses, and allied health providers, who foster effective communication and support patients through decision-making. Effective communication between healthcare providers and patients is crucial. It involves disseminating detailed information about risks and outcomes and understanding patients' values, fears, and aspirations [38]. This empathetic approach could help align medical advice with patient expectations, reducing the likelihood of regret [30,32,36,38,44].

Another critical aspect highlighted in these studies is the role of patient autonomy and informed consent [31,45,48]. Regret is often tied to situations where patients feel their decisions were not fully informed or voluntary. Ensuring that patients are thoroughly informed and genuinely consenting to procedures is essential in fostering a sense of control and satisfaction with their healthcare choices.

The emotional and psychological dimensions of patient regret also play a significant role [24–26,29,31,32]. The data reveals a nuanced landscape where psychological factors heavily influence how patients perceive and react to medical outcomes. Addressing these emotional aspects, possibly through counseling or support groups, is vital in helping patients cope with regret and make more informed decisions in the future [24–26,29,31,32].

Patient regret in healthcare is a complex issue that requires a comprehensive approach. It calls for enhanced communication, empathetic patient care, respect for patient autonomy, and attention to psychological well-being [10,23–49]. Addressing these aspects can lead to

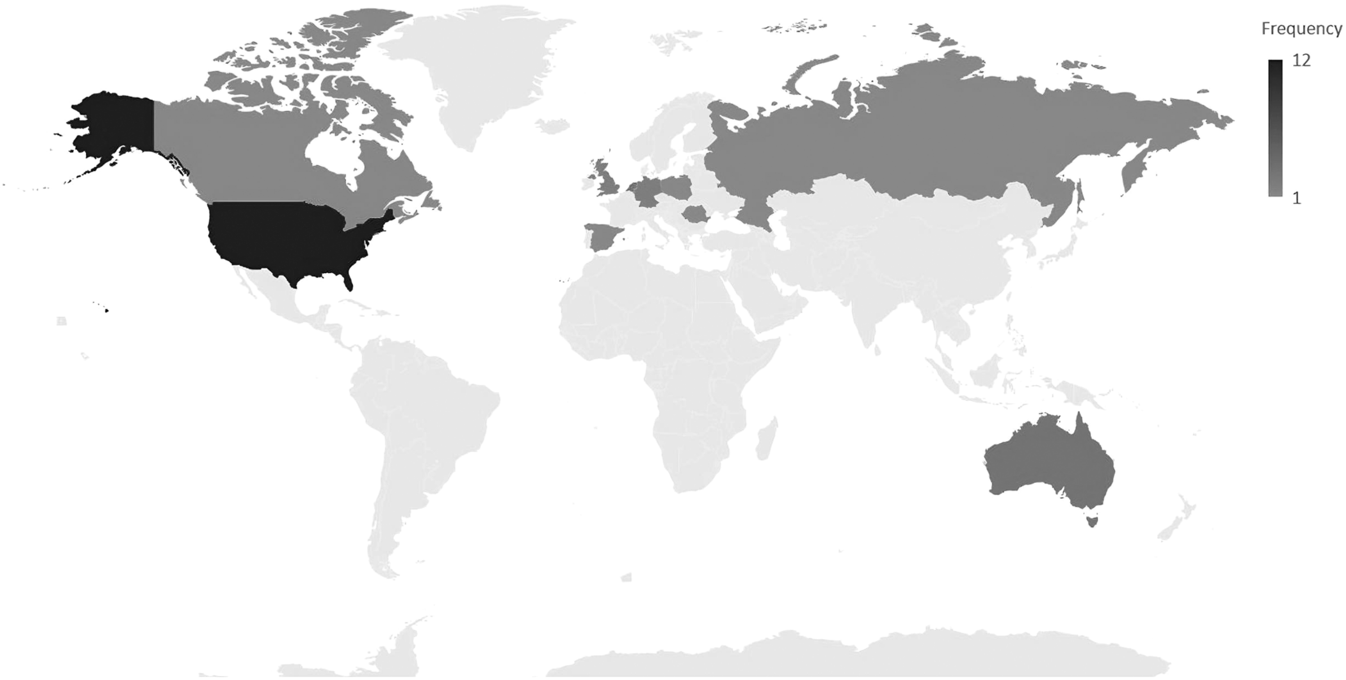

Fig. 2. Heatmap of Decision Regret Studies.

more positive patient experiences and outcomes, ultimately reducing the instances and impact of regret in healthcare decisions.

3.4. Medical procedures and outcomes

Medical procedures' efficacy and outcomes are critical to patient satisfaction and overall well-being. For instance, a study by Adogwa et al. revealed that a significant majority, 77%, of participants expressed confidence in their treatment, underscoring the importance of patient trust in medical interventions. However, it is crucial to note that medical procedures are challenging. Approximately 21% reported negative surgical outcomes, highlighting the inherent risks and complexities associated with surgeries.

The impact of medical procedures extends beyond immediate results to long-term quality of life. For example, one year after surgery, the health-related quality of life was notably evaluated, indicating the lasting effects of medical interventions on patients' daily lives [26]. This is further corroborated by findings that show an average improvement in Boston Carpal Tunnel Questionnaire scores post-treatment, suggesting measurable benefits in patient health status [49].

Interestingly, the data also reveals a significant correlation between patient satisfaction and treatment outcomes [10,49]. In Aversano et al.'s (2022) study, 94% reported symptom relief, and 86% were satisfied with their treatment, demonstrating a positive trend in patient responses post-procedure [49]. However, the absence of a direct link between pre-operative expectations and post-operative satisfaction suggests that patient satisfaction is a multifaceted issue influenced by various factors beyond just the surgical outcome.

The data on medical procedures and outcomes paints a picture of a healthcare landscape where patient experiences are largely positive but not without challenges [4,41]. The findings emphasize the need for a balanced approach in medical practice, where patient expectations are managed realistically, and efforts are made to maximize positive outcomes while minimizing negative ones. The intricate relationship between procedure efficacy, patient satisfaction, and quality of life remains pivotal to patient care.

3.5. Comparative analyses

Comparative analysis is essential for evaluating various treatments and understanding diverse patient experiences. Considering the included research, a study by Heiniger et al. explored the experiences of women who underwent risk-reducing mastectomy compared to those who opted for breast-conserving therapy [47]. This comparison provides crucial information on patient outcomes and satisfaction levels in the context of preventive surgeries for breast cancer.

Muehlschlegel et al. also contributed to this theme by examining differences in outcomes for patients undergoing different medical procedures [45]. Their finding of no significant differences in certain outcomes is particularly enlightening, as it challenges preconceived notions about the efficacy of specific treatments over others. In another study, Steenbeek et al. (2021) focused on patients' experiences one year after undergoing risk-reducing salpingo-oophorectomy [25]. Their comparative analysis offers a longitudinal perspective on patient outcomes, shedding light on the long-term effects of preventive surgical interventions. Lastly, Tolby et al. (2021) provided insights into comparing different medical treatments and their impact on patient outcomes [42]. Their finding of no significant differences in certain metrics further underscores the complexity of treatment efficacy and the importance of personalized healthcare.

3.6. Emerging mind map and framework for patient regret

Fig. 3 depicts the academic discourse surrounding patient regret within the healthcare continuum, which was used to develop a mind map and a framework. The current academic discourse provides a comprehensive understanding that explores the multifaceted journey from initial decision-making influenced by the patient-clinician relationship to the implications of medical procedures and psychological and emotional aspects, culminating in shaping decision regret [10, 23–49].

The discourse commences at the juncture of decision-making in healthcare, where a patient's initial expectations and patient-clinician relationship play a pivotal role as determinants of decision-making [10,25,29,37–39,42]. These expectations and relationships, forged from

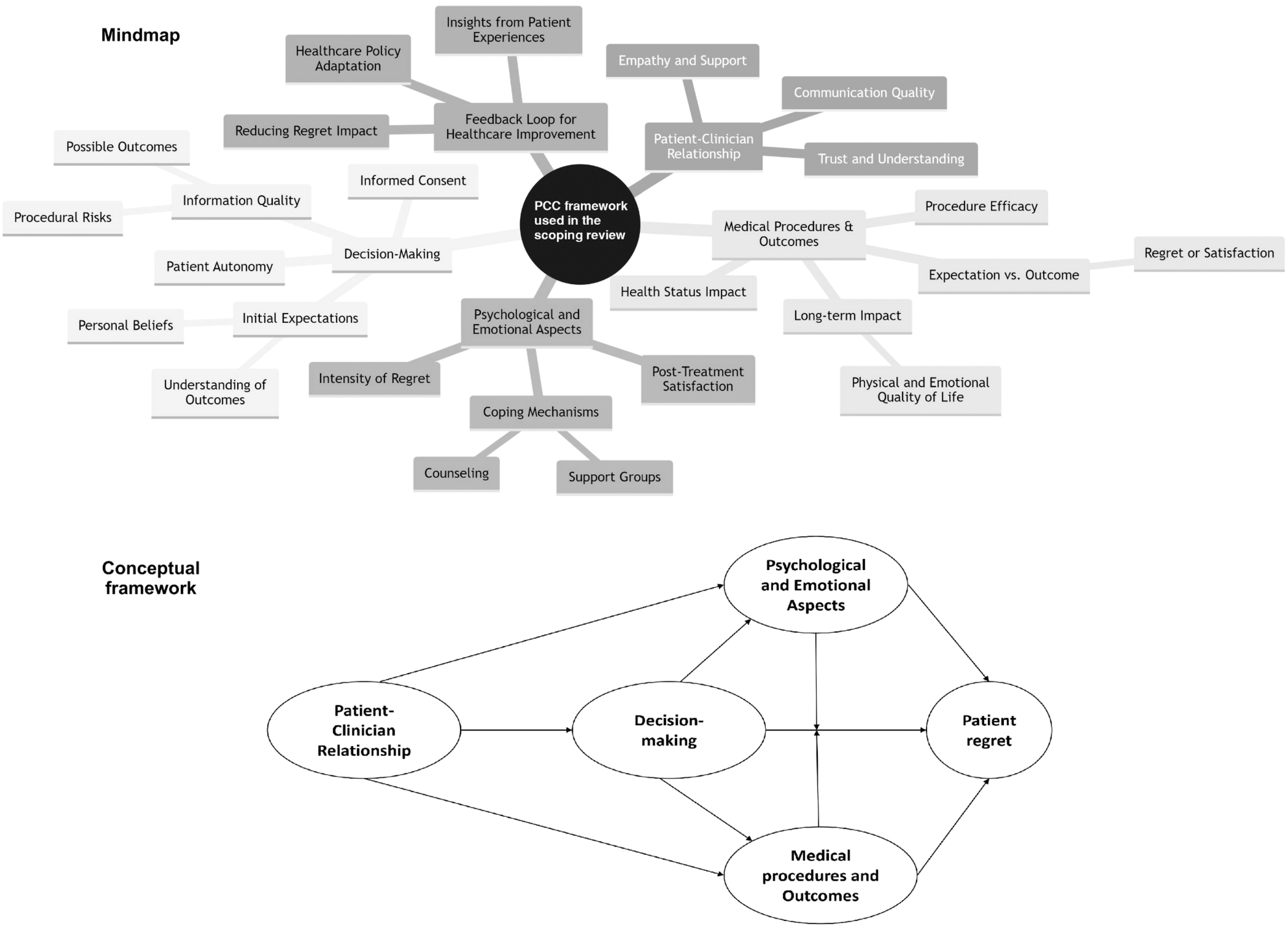

Fig. 3. Mindmap and conceptual framework.

personal beliefs and understandings of potential outcomes, set the stage for the ensuing healthcare experience [10,25,29,37–39,42]. Paramount in this phase is the quality and extent of information relayed to the patient, encompassing procedural risks and possible outcomes, which critically influence patient decisions. The embodiment of patient autonomy and informed consent further cements this stage, ensuring that patients are not merely passive recipients of healthcare but active, informed participants in their treatment trajectory. The patient-clinician relationship asserts itself as a fundamental aspect of this narrative [4,41,49]. The caliber of communication between healthcare providers and patients establishes the foundation of trust and understanding, transcending mere information exchange. Equally significant is the level of empathy and support healthcare professionals provide, which assists patients in navigating the complexities and uncertainties inherent in their healthcare journey.

Progressing through the discourse emerging from literature, the focus shifts to the medical procedures, their outcomes, and their psychological and emotional aspects [24–26,33]. As per medical procedures, the efficacy of the procedure itself emerges as a crucial determinant of patient regret. The long-term impact of the treatment, particularly its effect on the patient's quality of life, both physically and emotionally, is an integral consideration in this context. Interpreting the results collected by the included studies [24–26,33], medical procedures and their outcomes might affect the relationship derived from decision-making to patient regret. Likely delving into the psychological and emotional fields, patient satisfaction or dissatisfaction post-treatment becomes a barometer of the overall healthcare experience [10]. The intensity of regret, influenced by a multitude of factors ranging from the decision-making process to the outcomes of treatment, varies significantly among patients. The employment of coping mechanisms, including counseling or support groups, emerges as a vital strategy for patients in managing their feelings of regret and may affect the relationship from decision-making to patient regret [29].

4. Discussion and conclusion

In the scoping review, a thorough examination of the literature on decision regret in patients with NCDs revealed critical insights. The findings indicate a multifaceted nature of decision regret, encompassing various dimensions such as emotional responses, patient-clinician dynamics, and the complexities inherent in the decision-making process [10,23–49]. Particularly notable is the prevalence of decision regret across diverse healthcare settings, highlighting its significance in the patient experience. These results underscore the complexity of medical decision-making in NCDs and emphasize the importance of factors like communication, patient autonomy, and emotional support in mitigating decision regret. The key findings of this review elucidate an emerging framework for understanding decision regret in the context of NCDs. This framework encapsulates a range of factors from the initial medical decision-making process to the post-treatment outcomes and emotional responses. Central to this framework is the dynamic interplay between patient expectations, the quality of the patient-clinician relationship, and the impact of medical interventions on patient well-being. It highlights the crucial role of effective communication, informed consent, and emotional support in shaping patient experiences and responses to healthcare decisions.

In interpreting and comparing the findings with existing literature, this scoping review aligns with studies like those by O'Connor et al., which emphasize the role of decision aids in managing decision regret [50]. However, our review goes further, providing a broader perspective by integrating emotional and psychological aspects. This holistic view is more aligned with the works of Elwyn et al., which advocate for patient-centered approaches in healthcare decision-making [12]. The review thus fills a gap identified in earlier studies like those by Stacey et al., which called for more comprehensive research into the multifaceted nature of decision regret in healthcare [13].

This scoping review paves the way for an integrated approach to studying and understanding patient regret, offering a comprehensive overview of the interplay of factors that should be considered in future research planning. It broadens the narrative found in literature, such as the work by Kahneman and Tversky, which delves into the psychological underpinnings of regret [51]. In other words, this review sets a precedent for future studies to adopt a more holistic approach by incorporating a wide array of elements, from emotional responses to patient-provider dynamics. It suggests the necessity of interdisciplinary research that combines medical, psychological, and social perspectives to grasp the complexity of decision regret in healthcare fully. It is possible to examine an alignment between the emerging framework that operationalizes the concepts around patient regret and Kahneman and Tversky's theory, which may further enrich the understanding of decision regret in healthcare with future empirical explorations [51,52].

Prospect theory elucidates the intricacies of decision-making under risk, a concept mirroring the challenging choices faced by patients with NCDs. It underscores the emotional gravity of perceived losses versus gains, resonating with how patients may perceive and react to healthcare outcomes [53]. Furthermore, the framing effect described in prospect theory is crucial in healthcare settings, where the presentation of information could significantly sway patient decisions. This intersection of psychological theories with medical decision-making emphasizes the need for an integrated approach that considers the clinical aspects and the psychological and emotional dimensions of patient experiences [50–53]. This review, therefore, advocates for a comprehensive, interdisciplinary approach to research in this domain, ensuring a more nuanced understanding of decision regret among patients.

A critical aspect of mitigating decision regret is the role of SDM [4, 41,49]. SDM is a collaborative process where clinicians and patients work together to make healthcare decisions that align with the patient's values and preferences, taking into account specific circumstances [13]. In this regard, SDM serves as a key mechanism in reducing decision regret by ensuring that patients are fully informed and actively engaged in decision-making. The findings of this review underscore the importance of SDM in fostering patient autonomy, enhancing communication, and providing emotional support—factors that are crucial in minimizing the likelihood of decision regret. Healthcare providers could help patients tackle the complexities of medical decisions by integrating SDM into clinical practice to reduce the emotional burden associated with regret and improve overall patient satisfaction and well-being [10, 23–49]. This linkage between SDM and decision regret reinforces the theoretical underpinnings of considering SDM a proxy concept of decision regret as it reflects the efficacy of communication and decision support in reducing decision regret.

The findings of this review have significant implications for both clinical practice and health policy. They underscore the need for healthcare systems to adopt more patient-centered approaches, as per previous research [54], emphasizing effective communication, shared decision-making, and emotional support. These findings suggest that clinicians should be trained to understand the psychological aspects of patient decision-making, tailoring their communication strategies accordingly. For policymakers, these findings highlight the importance of creating and sustaining frameworks that support empathetic patient engagement and informed consent processes. Implementing these changes could improve patient satisfaction, reduce decision regret, and enhance healthcare outcomes.

The strengths of this scoping review include its comprehensive search strategy and adherence to the rigorous JBI methodology [16–18], ensuring a thorough exploration of the existing literature on decision regret in NCDs. Including a diverse range of studies also contributes to the breadth and depth of the findings. However, limitations include potential biases in the selected studies and the exclusion of non-English articles without HTML formats, which might have restricted the scope of the review. Additionally, as with most literature reviews, the findings are subject to the quality and context of the included studies, which might vary. In fact, a notable limitation is the geographical and demographic skew of the studies, mostly conducted in Western countries with limited focus on racially and ethnically diverse groups. This skew, mirroring the demographics prevalent in NCD research, may not represent the global population affected by these conditions. Consequently, the findings might have limited generalizability to non-Western populations, individuals from diverse racial and ethnic backgrounds, or those speaking languages other than English. This underrepresentation necessitates caution in applying the review's conclusions universally and underscores the need for future research to include more diverse and representative populations. Additionally, in line with the methodology of scoping reviews [16–18], the current literature was not appraised for quality. This approach aligns with the primary aim of mapping the breadth of literature rather than assessing the quality of individual studies. Hence, future outcome-specific systematic reviews, which include a detailed quality appraisal of studies, are needed to provide a more robust understanding of the impacts of decision regret in the context of NCDs. This will ensure a more nuanced and reliable evidence synthesis, contributing to a stronger foundation for clinical practice and policy development.

4.1. Conclusion

This scoping review has provided a comprehensive overview of the existing literature on decision regret in patients with NCDs. It highlights the multifaceted nature of decision regret, encompassing emotional, psychological, and relational dynamics in the healthcare context. The findings emphasize the importance of patient-centered care approaches, effective communication, and the acknowledgment of emotional and psychological aspects in healthcare decision-making. The review also underscores the need for more diverse and inclusive research to enhance the generalizability of findings. Future studies should focus on systematic, outcome-specific investigations with quality appraisals to strengthen the evidence base, aiding in the development of effective strategies to mitigate decision regret in healthcare settings.

4.2. Practice implications

The implications of this review for clinical practice and health policy are important. Understanding the psychological and emotional dimensions of patient decision-making is crucial for clinicians. This knowledge should be integrated into clinical training to enhance communication strategies that align with patient values and expectations. Clinicians should prioritize effective communication and shared decision-making to mitigate decision regret. This involves providing comprehensive information about potential outcomes and supporting patients throughout their decision-making process. For policymakers, the findings underscore the necessity of developing frameworks that support empathetic patient engagement and robust informed consent processes. Future research should focus on more diverse populations to ensure the generalizability of these findings and further refine strategies for mitigating decision regret in healthcare settings. Researchers should focus on developing and refining strategies to mitigate decision regret across various demographic and cultural contexts in healthcare settings.

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CRediT authorship contribution statement

Alice Brera: Writing – original draft, Methodology, Investigation, Conceptualization. **Cristina Arrigoni:** Writing – original draft, Methodology, Investigation. **Rosario Caruso:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization. **Silvia Belloni:** Writing – original draft, Project administration, Methodology, Investigation. **Luigi Bonavina:** Writing – review & editing, Methodology, Conceptualization. **Arianna Magon:** Project administration, Methodology, Formal analysis. **Gianluca Conte:** Writing – original draft, Visualization, Conceptualization. **Marco Alfredo Arcidiacono:** Writing – review & editing, Validation, Investigation. **Malgorzata Pasek:** Writing – review & editing, Validation, Supervision, Conceptualization. **Galyna Shabat:** Writing – review & editing, Methodology, Investigation, Conceptualization.

Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Rosario Caruso reports financial support was provided by IRCCS Policlinico San Donato. Rosario Caruso reports a relationship with IRCCS Policlinico San Donato that includes employment. Other authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.pec.2024.108478.

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