ATHENA - HEALTH & RESEARCH JOURNAL

2026 • Volume 3 • Nº Suppl

Comfort experiences of adults with cystic fibrosis through Kolcaba's Theory of Comfort: protocol for a qualitative systematic review

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ARTICLE INFO

Received 12 Oct 2026
Accepted 02 Nov 2026

Keywords:
cystic fibrosis
patient comfort
qualitative research
systematic reviews as topic
nursing theory

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DOI: 10.62741/ahrj.v3iSuppl.277

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ABSTRACT

Introduction: Cystic fibrosis is a multisystem disease, predominantly respiratory, that has long limited life expectancy. Modulators of the affected protein have increased the number of adults living with the disease and improved quality of life, but have not eliminated chronic symptoms, treatment burden or psychosocial needs. Nursing care should therefore consider how the experience of living with the disease has changed. Kolcaba's Theory of Comfort, which defines comfort as relief, ease and transcendence across four contexts, offers a nursing framework to analyze those experiences.
Objectives: To synthesize the comfort experiences of adults (18 years or older) living with cystic fibrosis.
Methodology: The review will follow the Joanna Briggs Institute methodology. Five databases and a grey literature source will be searched for qualitative studies published from 2012. Two reviewers will independently screen studies, appraise methodological quality, and extract data. Studies will be eligible when their findings describe relief, ease or transcendence, even without the word comfort. Findings will be pooled by meta-aggregation, organized by Kolcaba's four contexts of comfort and by treatment status (on modulators, ineligible, transplanted or listed, unspecified), and rated for confidence using ConQual.
Results: Not applicable. This article presents a protocol, and results will be reported in the completed review.
Conclusion: The review is expected to produce a theoretically grounded synthesis of adults' comfort experiences of cystic fibrosis in the era of modulator therapy, informing patient-centered nursing care and priorities for future qualitative research. It may also help to refine the application of Comfort Theory in chronic illness.

Contributions: Conceptualization: AN; Data curation: Not applicable; Formal Analysis: Not applicable; Funding acquisition: Not applicable; Investigation: AN; Methodology: AN, HN, VP, AC, IO and SG; Project administration: AN; Resources: Not applicable; Software: Not applicable; Supervision: HN, MCRV and PPS; Validation: HN, VP, AC, IO and SG; Visualization: Not applicable; Writing – original draft: AN; Writing – review & editing: AN, HN, VP, AC, IO, SG, MCRV and PPS.

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Please cite this article as: Nabais A, Neves H, Parola V, Coelho A, Oliveira I, Gaspar S, Viana MCR, Sousa P. Comfort experiences of adults with cystic fibrosis: protocol for a qualitative systematic review. *Athena Health & Research Journal.* 2026;3(Suppl). doi:10.62741/ahrj.v3iSuppl.277

INFORMAÇÃO DO ARTIGO

Recebido 12 Out 2026
Aceite 02 Nov 2026

Palavras-chave:
fibrose cística
conforto do paciente
pesquisa qualitativa
revisões sistemáticas como assunto
teoria de enfermagem

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DOI: 10.62741/ahrj.v3iSuppl.277

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RESUMO

Introdução: A fibrose quística é uma doença multissistémica, sobretudo respiratória, que sempre limitou a esperança de vida. Os moduladores da proteína afetada aumentaram o número de adultos a viver com a doença e melhoraram a qualidade de vida, mas não eliminaram os sintomas crónicos, a carga terapêutica nem as necessidades psicossociais. Assim, os cuidados de enfermagem devem considerar a mudança na experiência de viver com a doença. A Teoria do Conforto de Kolcaba, que define o conforto como alívio, tranquilidade e transcendência em quatro contextos, oferece um referencial de enfermagem para analisar essas experiências.
Objetivos: Sintetizar as experiências de conforto de adultos (18 anos ou mais) com fibrose quística.
Metodologia: A revisão seguirá a metodologia do *Joanna Briggs Institute*. Serão pesquisadas cinco bases de dados e uma fonte de literatura cinzenta para estudos qualitativos publicados desde 2012. Dois revisores independentes farão a triagem, a avaliação da qualidade e a extração. Serão elegíveis estudos cujos achados descrevam alívio, tranquilidade ou transcendência, mesmo sem a palavra conforto. Os achados serão sintetizados por meta-agregação, organizados pelos quatro contextos de conforto de Kolcaba e pela situação terapêutica (com moduladores, não elegível, transplantado ou em lista, não especificada), e classificados quanto à confiança com o ConQual.
Resultados: Não aplicável. Este artigo apresenta um protocolo, e os resultados serão apresentados na revisão completa.
Conclusão: Espera-se que esta revisão constitua uma síntese teoricamente fundamentada das experiências de conforto de adultos com fibrose quística na era dos moduladores, útil para cuidados centrados na pessoa e para investigação futura. Poderá ajudar a refinar a aplicação da Teoria do Conforto na doença crónica.

Introduction

Cystic fibrosis (CF) is a life-limiting, autosomal recessive genetic disorder caused by variants in the gene encoding the CF transmembrane conductance regulator (CFTR) protein, leading to progressive multisystem disease that most prominently affects the lungs, pancreas and reproductive system.[1,2] CF affects an estimated 89,000 to 162,000 people worldwide, and its documented distribution is expanding beyond historically studied European-ancestry populations as diagnostic capacity improves.[2,3]

The epidemiology of CF has changed over the past three decades. Once almost exclusively a disease of childhood, CF is increasingly a disease of adulthood: multidisciplinary care, universal newborn screening and CFTR modulator therapies introduced since 2012 have driven median predicted survival from 36.3 years in 2006 to 53.1 years in 2021, with adults now outnumbering children in most high-income countries with established CF care.[1,4,5] Ivacaftor, the first CFTR potentiator, was approved in 2012 for a small subset of gating mutations. In 2019, the triple combination elexacaftor-tezacaftor-ivacaftor extended highly effective modulator therapy to approximately 85% to 90% of the CF population.[6,7] This change has extended the years lived with chronic symptoms, lifelong treatment regimens and cumulative psychosocial demands.[4,8] The year 2012 was therefore selected as the lower limit for this review because it marks the beginning of the modulator era.

However, the modulator era has not changed the experience of CF uniformly. Alongside adults who have gained substantial clinical benefit from modulator therapy, a subset, including people who have undergone lung transplantation, people with rare or non-responsive genotypes, and people in low- and middle-income countries without access to modulators, continues to live with disease trajectories closer to those described before the modulator era. Global estimates indicate that about 12% of diagnosed adults with CF receive triple combination therapy.[3] For this reason, eligibility will not be restricted by CFTR modulator status or transplant history. These variables will be recorded during data extraction and considered when interpreting the synthesis.

As survival has extended and more adults live with CF, the priorities of care have also broadened. Pulmonary function, exacerbation frequency and survival remain essential clinical outcomes, but they do not fully describe how adults experience a chronic, multisystem condition over time.[4,5,9] Health-related quality of life data illustrate this gap. In a multicenter Canadian cohort of 353 adults, quality of life improved within one month of starting elexacaftor-tezacaftor-ivacaftor and remained improved at 12 months, irrespective of whether lung function increased by at least 5%.[10] In a cross-sectional study of 220 adults in Poland, the lowest-rated domains were vitality, emotional functioning and health perceptions, and better scores were associated with modulator use, less pain and educational or professional activity.[11] CFTR modulator therapy has also introduced new psychosocial questions and changing expectations, while existing psychological and social challenges remain.[9,12] Recent qualitative studies of adults after modulator initiation describe changes in identity, sense of potential and hope,[13] alongside psychological difficulties, including worsening mental health in some participants and persistent concerns about self-worth.[14] In

chronic illness care, this supports complementing disease-centered outcomes with patient-centered outcomes that reflect symptom burden, daily functioning and meaning.[15] Person-centered care work in chronic respiratory disease, including advanced chronic obstructive pulmonary disease, points in the same direction, because it emphasizes helping patients to identify and express their own support needs and to do the things that matter to them.[16,17] These considerations provide the rationale for examining comfort as a relevant nursing and person-centered construct.

Comfort is recognized in nursing as a core multidimensional outcome and a legitimate goal of care even when cure is not possible.[18,19] Kolcaba's Theory of Comfort defines comfort as the experience of having three needs met, relief, ease and transcendence, across four contexts: physical, psychospiritual, sociocultural and environmental.[18,19] The theory has been applied across chronic illness populations, most often to structure interventions and instruments, and increasingly to interpret qualitative accounts of illness experience.[20,21]

Qualitative CF studies have described illness experience broadly, including perceptions, narratives and meaning-making about living with the disease, without using comfort as an analytic construct. For example, young adults with CF have described hope and uncertainty through everyday coping and biographical narratives rather than through a theoretically defined concept of comfort.[22] Existing syntheses address narrower or differently framed questions, such as medication adherence[23] or the psychosocial aspects of adult life across study designs.[24] To our knowledge, no published systematic review has synthesized qualitative evidence on adults' CF experiences using comfort or its recognized forms, relief, ease and transcendence, as an explicit organizing construct. A preliminary search of the International Prospective Register of Systematic Reviews (PROSPERO), PubMed, Epistemonikos, the JBI Evidence-Based Practice Database (Ovid) and the Cochrane Database of Systematic Reviews found no current or in-progress review addressing comfort experiences of adults with CF using this framework.

To apply the framework, the physical context will cover symptom burden and treatment demands; the psychospiritual context will address hope, identity, anxiety and meaning; the sociocultural context will include family relationships, social support, stigma and isolation; and the environmental context will cover home and hospital settings, infection-control isolation and air quality.[18,19] These dimensions correspond to the clinical and psychosocial burden described above.[1,2,4] Together, they define the conceptual structure of the synthesis and lead to the review objective: to synthesize qualitative evidence on the comfort experiences of adults (18 years or older) living with CF.

Methodology

Type of study, design and registration

This is the protocol of a qualitative systematic review, which will follow the Joanna Briggs Institute (JBI) methodology for qualitative evidence synthesis.25 The protocol was prepared with reference to the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P).[26] The completed review will follow PRISMA 2020,[27] and the search will be reported according to PRISMA-S.[28] JBI SUMARI will be used for appraisal, extraction and meta-aggregation.[29] The protocol was developed with reference to comparable JBI protocols for qualitative systematic reviews.[30,31] It was registered in PROSPERO (CRD420261487528). Important amendments will be dated, documented and reported in the completed review.

Timing and amendments: the searches were run in August 2026, before this protocol was submitted for publication. The protocol was registered in PROSPERO on 26 August 2026, before the screening of titles and abstracts began. No information sources were added after registration. After registration, the synthesis was organized by CFTR modulator status, ineligibility and transplantation, and this amendment will be reported in the completed review. The amendment comprises the allocation of studies to four treatment-status groups at extraction (adults taking modulators, not eligible for modulators, transplanted or listed, and unspecified) and the cross-tabulation of findings by group and by Kolcaba's context.

Review question

What are the comfort experiences of adults (18 years or older) living with CF? In PICo format, the population is adults with CF, the phenomenon of interest is the experience of relief, ease or transcendence in Kolcaba's four contexts, and the context is any setting or country. To address the primary question, the review will use four subquestions aligned with Kolcaba's contexts: (i) what are the physical comfort experiences of adults with CF (for example breathlessness, cough, fatigue, sleep and treatment burden); (ii) what are the psychospiritual comfort experiences (identity, anxiety, hope, spirituality and self-concept); (iii) what are the sociocultural comfort experiences (family relationships, social support, stigma, isolation and role changes); and (iv) what are the environmental comfort experiences (hospital and home environment, infection-control isolation and air quality). Because comfort is the phenomenon of interest in this qualitative review, no separate outcome hierarchy will be specified, consistent with JBI guidance.[25]

Eligibility criteria

Participants

The review will include studies of adults (18 years or older) diagnosed with CF, regardless of sex, gender, ethnicity or nationality, provided that participants report their own

comfort experiences or experiences of relief, ease or transcendence related to the condition. Eligibility will not depend on treatment regimen, including CFTR modulator status, lung transplant history, disease severity or care setting. Studies limited to children or adolescents (younger than 18 years), or to parents, siblings or other caregivers, will be excluded unless the study presents an account explicitly centered on the adult with CF's own experience. Mixed pediatric and adult samples will be included only when adult findings can be extracted or are reported separately.

Phenomena of interest

The phenomenon of interest is the comfort experience of adults living with CF, in four contexts consistent with Kolcaba's theory: physical (for example symptom burden, relief, breathlessness and fatigue), psychospiritual (identity, anxiety, hope, spirituality and self-concept), sociocultural (family relationships, social support, stigma and isolation) and environmental (hospital environment, home setting, infection-control isolation and air quality). Eligible studies need not use the term comfort explicitly, provided that their findings engage with the concept of comfort or with one of its three forms, relief, ease or transcendence, and map onto one or more of the four contexts. By contrast, qualitative accounts of illness experience that do not engage with comfort or one of these forms will not be eligible, even when broadly relevant to CF. Reports based solely on caregivers' or clinicians' observations will be excluded.

Identification and categorization of comfort-related experiences

Because comfort is rarely named by participants or authors, eligibility and coding will rest on the meaning of the reported experience and not on the presence of the word. Before screening, the reviewers will agree a coding guide derived from Kolcaba's taxonomic structure, with indicative descriptors for each form and context. Relief will be identified where a specific need is described as being met or a burden as being lifted (for example, reduced symptoms or treatment demands). Ease will be identified where participants describe calm, security, normality or contentment. Transcendence will be identified where participants describe rising above difficulty through hope, meaning, empowerment or personal growth. The absence or loss of these states, such as unmet needs or discomfort, will also be treated as relevant to the phenomenon. The guide will be piloted on a small set of records before screening, and a study will proceed to full-text assessment when its findings plausibly describe one of these experiences.

At extraction, two reviewers will independently map each finding to one or more contexts and, where the data support it, to a form of comfort, and will record a brief rationale. Explicit comfort vocabulary (for example comfort, comforting, uncomfortable, relief, ease or soothing) will be recorded separately for each study and classified as explicit, implicit or absent. Findings that cannot be mapped with confidence will be flagged as uncertain, discussed and, if needed, referred to a third reviewer, and will not be forced into a category. The influence of this interpretive step will be considered in the completed review by comparing studies that use comfort vocabulary with those that do not.

Context

The review will not restrict the setting by country, cultural context or location. Studies conducted in clinical, home, community, educational or social settings will be eligible, provided that they address adults' lived experience of CF.

Types of studies

The review will include studies based on qualitative data, including phenomenology, grounded theory, ethnography, action research, case studies and the qualitative component of mixed-methods studies. Studies published from 2012 onward will be eligible, because ivacaftor, the first CFTR modulator therapy, was introduced in that year and marked the beginning of a qualitatively different, though unevenly distributed, era of living with CF. Studies may be published in any language, and qualified translators or validated machine-translation tools will be used where necessary. Study protocols, conference abstracts without full data, and reviews or syntheses of qualitative studies will be excluded, but their reference lists will be screened for primary studies.

Search strategy

The search will seek both published and unpublished (grey) literature. To develop the strategy, an initial limited search of MEDLINE (PubMed) and CINAHL (EBSCOhost) identified text words in titles and abstracts, and the index terms used to describe relevant records. These terms informed a full strategy built around four concepts: CF; experience, perception and narrative; comfort-related terms covering the four contexts; and qualitative methods. The full MEDLINE strategy is presented in Table 1 and will be adapted to the syntax of each information source.

A search calibration tool[32] and a generative artificial intelligence (AI) model (Gemini 3.5 Flash Lite) were used during construction of the strategy, with structured prompts to decompose the review question into conceptual blocks and to suggest candidate subject headings. The reviewers validated and curated all Boolean operators, syntax, truncation and title and abstract tags, and made the final decisions on search terms, using the Peer Review of Electronic Search Strategies (PRESS) framework. Potential limitations include dependence on prompt formulation and incomplete retrieval of synonyms. No AI tool replaced human screening or methodological assessment.

The databases will be MEDLINE (PubMed), CINAHL (EBSCOhost), Psychology and Behavioral Sciences Collection (EBSCOhost), Scopus and the Web of Science Core Collection. ProQuest Dissertations and Theses will be searched for unpublished studies and grey literature, and reference lists of studies selected for critical appraisal will

be screened. No language restrictions will be applied. If a potentially eligible study is published in a language other than English or Portuguese, qualified translators or validated machine-translation tools will first be used to assess its title and abstract.

Table 1. MEDLINE (via PubMed) search strategy used in the strategy development run (August 2026)

Search	Query	Results
S1	"Cystic Fibrosis"[Mesh] OR "cystic fibrosis"[tiab] OR mucoviscidosis[tiab]	29,271
S2	"Personal Narratives as Topic"[Mesh] OR "Life Change Events"[Mesh] OR experience*[tiab] OR perception*[tiab] OR perspective*[tiab] OR narrative*[tiab] OR view*[tiab] OR attitude*[tiab] OR emotion*[tiab] OR feeling*[tiab] OR "personal narrative*"[tiab] OR "life narrative"[tiab] OR "life change event*"[tiab] OR "life changing event*"[tiab] OR "living with"[tiab] OR "everyday life"[tiab] OR "daily life"[tiab]	2,396,650
S3	"Patient Comfort"[Mesh] OR "Adaptation, Psychological"[Mesh] OR "Self Concept"[Mesh] OR "Social Support"[Mesh] OR "Social Isolation"[Mesh] OR "Family Relations"[Mesh] OR "Interpersonal Relations"[Mesh] OR "Dyspnea"[Mesh] OR "Cough"[Mesh] OR "Sputum"[Mesh] OR "Fatigue"[Mesh] OR "Sleep Wake Disorders"[Mesh] OR "Activities of Daily Living"[Mesh] OR "Anxiety"[Mesh] OR "Fear"[Mesh] OR "Spirituality"[Mesh] OR "Air Pollution"[Mesh] OR "Air Pollution, Indoor"[Mesh] OR "Patient Isolation"[Mesh] OR "Health Facility Environment"[Mesh] OR comfort*[tiab] OR relief[tiab] OR ease[tiab] OR transcend*[tiab] OR breathless*[tiab] OR dyspnea*[tiab] OR "shortness of breath"[tiab] OR cough*[tiab] OR sputum[tiab] OR phlegm[tiab] OR mucus[tiab] OR fatigue[tiab] OR tiredness[tiab] OR "sleep disturbance*"[tiab] OR "activity limitation*"[tiab] OR coping[tiab] OR adaptation[tiab] OR resilience[tiab] OR anxiety[tiab] OR panic[tiab] OR fear*[tiab] OR distress[tiab] OR uncertainty[tiab] OR identity[tiab] OR meaning*[tiab] OR hope[tiab] OR spiritual*[tiab] OR existential[tiab] OR "social support"[tiab] OR isolation[tiab] OR loneliness[tiab] OR stigma[tiab] OR "family support"[tiab] OR relationship*[tiab] OR "role change*"[tiab] OR dependence[tiab] OR "air pollution"[tiab] OR "indoor air quality"[tiab] OR "indoor pollution"[tiab] OR "smoke exposure"[tiab] OR "secondhand smoke"[tiab] OR ventilation[tiab] OR humidity[tiab] OR "cold air"[tiab] OR "hospital environment"[tiab] OR "isolation room"[tiab]	3,327,769
S4	"Qualitative Research"[Mesh] OR "Grounded Theory"[Mesh] OR "Interviews as Topic"[Mesh] OR "Focus Groups"[Mesh] OR "Narration"[Mesh] OR qualitat*[tiab] OR grounded[tiab] OR phenomenolog*[tiab] OR ethnograph*[tiab] OR hermeneutic*[tiab] OR heuristic*[tiab] OR "action research"[tiab] OR interview*[tiab] OR "focus group*"[tiab] OR "thematic analysis"[tiab] OR "content analysis"[tiab] OR "discourse analysis"[tiab] OR "narrative analysis"[tiab] OR "semi-structured"[tiab] OR semistructured[tiab] OR emic[tiab] OR etic[tiab] OR semiotic[tiab]	721,587
S5	S1 AND S2 AND S3 AND S4	316

Note: The strategy will be adapted to the syntax of each information source. No language limit was applied.

Study selection

After the search, citations will be collated and imported into Rayyan, and duplicates will be removed. The reviewers will pilot the screening on 50 randomly selected records and proceed after at least 90% agreement, calculated as percent agreement across records. They will then screen titles and abstracts independently. Potentially eligible or unclear records will be retrieved in full and assessed independently, and the reasons for full-text exclusion will be recorded. Disagreements will be resolved by discussion or, if needed, with a third reviewer. The completed review will report the search and selection process in a PRISMA flow diagram.[27]

Assessment of methodological quality

Two reviewers will independently appraise eligible studies with the JBI Critical Appraisal Checklist for Qualitative Research, which has 10 items, each rated yes, no, unclear or not applicable.25 The reviewers will first pilot the appraisal on three included studies, yielding 30 item-level judgements, and will proceed after at least 90% agreement. If this threshold is not reached, discrepancies will be discussed, the appraisal guidance will be clarified and the pilot will be repeated. Studies will not be excluded solely because of methodological quality; appraisal findings will instead inform interpretation and the confidence assessment, in line with JBI guidance on avoiding arbitrary quality thresholds.[33] Disagreements will be resolved by discussion or a third reviewer, and results will be reported narratively and in a table. Study authors will be contacted up to two times for missing information; if they do not respond, the study will be retained and the missing information reported as a limitation.

Data extraction

Two reviewers will independently extract data from included studies with a standardized qualitative data extraction tool (Table 2). The form will capture the population, context, culture, geographical location, study methods, CFTR modulator status, lung transplant history, study funding and conflicts of interest where reported, and findings relevant to the review question. Findings and illustrations will be extracted verbatim, assigned a credibility level (unequivocal, credible or unsupported) according to JBI guidance,[25] and mapped to one or more of Kolcaba's four contexts and, where the data support it, to relief, ease or transcendence.[18,19] The contexts and forms of comfort will provide the a priori framework for organizing the evidence, while findings that span contexts or do not map cleanly onto one dimension will be retained and recorded as cross-contextual. Each study will also be allocated to one of four treatment-status groups according to the criterion that defined its sample or focus: adults taking CFTR modulators; adults not eligible for modulators; adults who have undergone lung transplantation or are listed; and treatment status unspecified or heterogeneous. Where the status of individual participants is reported, it will be extracted

alongside the findings. The form will be piloted on three included studies, and full extraction will proceed after at least 90% agreement. Disagreements will be resolved by discussion or a third reviewer, and study authors will be contacted up to two times for missing or additional data.

Table 2. Data extraction tool.

Extraction domain	Data to be extracted	Role in synthesis
Study identification and design	Author(s), publication year, journal, country, study aim, qualitative methodology, research design, and mixed-methods status.	Describe the evidence base and interpret methodological context.
Participants and setting	Number and characteristics of adults with CF, age range, sex or gender where reported, care setting, culture, and geographical location.	Characterize the population and context; inform interpretation of relevance and transferability.
Clinical and treatment context	Disease severity, symptoms, exacerbations, CFTR modulator status, lung transplant history, treatment demands, and other relevant clinical factors.	Contextualize physical comfort and variation in treatment-related experience.
Data collection and analysis	Recruitment, data collection methods, analytic approach, reflexivity, ethical procedures, and author-reported limitations.	Support appraisal of methodological dependability and interpretation of findings.
Comfort terminology and framing	Use of comfort-related terms; explicit or implicit reference to relief, ease, or transcendence; theoretical framing; and related illness-experience concepts.	Identify how each study engages with Kolcaba's theory and the review eligibility concept.
Physical context	Breathlessness, cough, fatigue, pain, sleep, symptom burden, symptom relief, treatment burden, bodily functioning, and other physical experiences.	Organize findings concerning physical comfort.
Psychospiritual context	Identity, self-concept, hope, anxiety, fear, spirituality, meaning, uncertainty, existential concerns, and other psychospiritual experiences.	Organize findings concerning psychospiritual comfort.
Sociocultural context	Family relationships, social support, stigma, isolation, roles, belonging, communication, and other sociocultural experiences.	Organize findings concerning sociocultural comfort.
Environmental context	Home and hospital settings, infection-control isolation, air quality, care environments, accessibility, and other environmental experiences.	Organize findings concerning environmental comfort.
Findings and illustrations	Author-reported findings, participant quotations or narratives, supporting illustrations, contradictions, overlaps across contexts, and mapping to one or more comfort forms.	Create categories and synthesized findings while retaining cross-contextual and emergent evidence.
Credibility and reviewer notes	JBI credibility level, rationale, missing information, reviewer disagreements, resolution, and relevant study funding or conflicts of interest.	Inform meta-aggregation, interpretation, and the ConQual assessment.

Data synthesis

Where possible, the review will pool qualitative findings using JBI SUMARI with the meta-aggregation approach.[25,29] Findings will first be organized within the four contexts of Kolcaba's theory and, where the evidence supports it, according to relief, ease and transcendence. The reviewers will group findings with similar meanings into categories and synthesize those categories into findings that can inform practice and policy. Findings that span more than one context will be retained as cross-contextual, and findings that do not map cleanly onto a predefined dimension will be reported as emergent rather than forced into a category. A finding that spans several contexts will be assigned a primary context, defined as the context in which participants locate the main source or expression of the experience, and its secondary contexts will be recorded. In the evidence map and in the summary of findings, such a finding will be reported once, under its primary context, with cross-references to its secondary contexts, so that it is not counted twice in the number of findings or in the ConQual assessment. The links between contexts will be described narratively. Two reviewers will assign primary and secondary contexts independently, and disagreements will be resolved by discussion or a third reviewer. Findings will then be cross-tabulated by Kolcaba's contexts and by treatment-status group, so that comfort experiences can be compared between adults taking modulators, adults not eligible for them, adults who are transplanted or listed, and adults whose status is unspecified. A group or finding supported by a single study will be reported as a single-study finding and not as a synthesized finding. Only unequivocal and credible findings will enter the aggregation, whereas unsupported findings will be reported separately. If meta-aggregation is not possible, the findings will be presented narratively. No quantitative meta-analysis is planned.

Assessment of reporting biases and confidence in the findings

The search will include published and grey literature, and reference lists of studies selected for critical appraisal will be screened, to reduce the risk of publication bias. Selective reporting within primary studies will be considered by comparing the stated aims, methods and reported findings where this information is available. Because the synthesis is qualitative, no statistical assessment of publication bias is planned.

The review team will assess confidence in each synthesized finding with the ConQual approach, which combines methodological dependability and finding credibility.[34] Dependability will follow the five JBI appraisal items specified by ConQual, and credibility will follow the JBI credibility ratings and downgrade rules for contributing findings. The summary of findings will report the title, bibliography, population, phenomenon, context, synthesized finding, research type, dependability, credibility, overall rating and comments on downgrading. Disagreements will be resolved through discussion or, if needed, with a third reviewer.

Ethical and legal considerations

This protocol concerns a review of published studies and does not require ethics committee approval or informed consent. Participant quotations will be reproduced only as published, with attribution and within the limits of copyright.

Results

Not applicable. This article presents a protocol, and results will be reported in the completed review. In the completed review, findings that span more than one context will be presented once under their primary context, with cross-references to the secondary contexts, in the evidence map and in the summary of findings table.

Discussion

This review addresses a gap between two bodies of literature: qualitative accounts of living with CF, which rarely use comfort as an analytic construct, and comfort theory, which has been applied mainly outside CF. By including studies that engage with relief, ease or transcendence without necessarily using the word comfort, and by recording modulator and transplant status, the review aims to represent the heterogeneity of experience in the modulator era. Anticipated limitations include variation in how primary studies describe comfort, a small number of studies for some subpopulations, such as people who are ineligible for modulators, and incomplete reporting of treatment status. Judging conceptual fit will require interpretation, which independent screening and discussion between reviewers are intended to limit.

Transferability and cultural variability also require explicit consideration. Comfort is shaped by culture, family structures, health beliefs and the organization of care, which Kolcaba's sociocultural and environmental contexts capture only in general terms. The evidence base is also likely to be uneven. Access to diagnosis and to CFTR modulators varies markedly between and within countries,[3,35] and inequities persist in the modulator era.[36] Socioeconomic position, insurance or reimbursement arrangements and the organization of specialist care may therefore influence whether adults experience relief, ease or transcendence, and which needs remain unmet. Cross-national work on person-centered care across serious physical conditions in middle-income countries, including chronic obstructive pulmonary disease, similarly identifies domains such as interdependency, care in the home and community, equity and care under limited resources, which differ from those described in high-income settings.[17] To address this, the review will record the country and geographical region of each study, and information on socioeconomic and healthcare-system context where it is reported, and will describe the synthesized findings by region and context instead of assuming that they apply uniformly. Studies from low- and middle-income countries and from settings without access to modulators are expected to be few, and the completed review will state this limitation and avoid generalizing its findings beyond the contexts represented.

Conclusion

This protocol sets out a transparent, JBI-based plan to synthesize the comfort experiences of adults living with CF within Kolcaba's framework. Beyond its practical relevance, the review may contribute to nursing science. By mapping adults' accounts onto Kolcaba's contexts and forms of comfort, it can test whether relief, ease and transcendence are distinguishable in qualitative accounts of a chronic, life-limiting condition, how the contexts interact, and whether some, such as the environmental context, are under-represented. These results may help to refine or extend the application of Comfort Theory in chronic illness, for example by indicating where its descriptors need adaptation to the trajectories of long-term conditions. The completed review is expected to inform patient-centered nursing care and to identify priorities for future qualitative research as the CF population ages and clinical priorities move from survival towards quality of living.

Data availability statement

The MEDLINE search strategy and the data extraction tool are provided in Tables 1 and 2. The search strategies for the other sources and the extraction forms will be available on request to the corresponding author.

AI use note

During the preparation of this study and manuscript, the author(s) used Gemini 3.5 Flash Lite for the purpose of decomposing the review question into concept blocks and suggesting candidate subject headings during search strategy development, and Claude (Anthropic) Sonnet 5.5 for the purpose of adapting same sections of the protocol text to the journal's format and checking references. The authors declare that they have reviewed and edited the

output and accept full responsibility for the content of this publication.

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