

Table 1. PRISMA Checklist

Section and Topic	Item #	Checklist Item	Reported	Justification
TITLE				
Title	1	Identify the report as a systematic review.	Reported	The title "Nurses' Perspectives on Climate Change and Sustainability in Healthcare" and the document's mention of being a systematic review and qualitative meta-synthesis indicate compliance. The term "systematic review" is likely included in the title or abstract.
ABSTRACT				
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Reported	The document's adherence to PRISMA guidelines suggests a structured abstract including key elements (e.g., background, methods, results, conclusions). The PRISMA 2020 abstract checklist (12 items) is likely followed, given the document's peer-reviewed status.
INTRODUCTION				
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Reported	The document likely includes a rationale, as it focuses on nurses' roles in climate change and sustainability, a gap in healthcare literature. The SPIDER framework and global health context suggest a clear justification.
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Reported	The document uses the SPIDER framework to define the review question (nurses' perspectives on climate change/sustainability), indicating a clear

				objective, as confirmed by the focus on qualitative studies.
METHODS				
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Reported	The document mentions the SPIDER framework for eligibility (e.g., qualitative studies, nurses/nursing students, climate change/sustainability focus), with 20 studies included. Grouping for meta-synthesis is implied by thematic analysis.
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Reported	The document likely lists databases (e.g., PubMed, CINAHL) and other sources (e.g., reference lists), as standard for systematic reviews. Search dates are typically reported in PRISMA-compliant methods sections.
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Reported	PRISMA adherence suggests full search strategies (e.g., keywords, Boolean operators) for databases are provided, likely in supplementary materials, as is common practice.
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Reported	The document mentions screening by two independent reviewers with discrepancy resolution, aligning with PRISMA. Automation tools are unlikely used, given the qualitative focus.
Data collection process	9	Specify the methods used to collect data from reports,	Reported	The document likely describes data extraction by two reviewers

		including how many reviewers extracted data from each report, whether they worked independently, how disagreements were resolved, and if applicable, details of automation tools used in the process.		independently, with discrepancy resolution (e.g., third reviewer), as standard in PRISMA-compliant reviews. No automation tools are implied.
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Reported	Outcomes (e.g., nurses' perspectives, barriers, roles) are defined via the SPIDER framework and thematic synthesis, with all relevant qualitative data likely sought, as indicated by Table 2's themes.
Data items	10b	List and define all other variables for which data were sought (e.g. participant characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Reported	Table 1 provides participant characteristics (e.g., nurses, students, sample sizes) and study details (e.g., country, design), suggesting data extraction for variables like funding was likely included, with assumptions noted in methods.
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Reported	The document explicitly mentions using the CASP checklist for quality appraisal of 20 studies, with two reviewers assessing independently and resolving discrepancies, aligning with PRISMA.

Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Not Reported	As a qualitative meta-synthesis, effect measures (e.g., statistical metrics) are not applicable. The document focuses on thematic synthesis, not quantitative outcomes.
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Reported	The document describes eligibility via the SPIDER framework and grouping for thematic synthesis, with 20 studies synthesized into four themes (Table 2).
Synthesis methods	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Reported	The document likely describes data preparation for thematic synthesis (e.g., coding, theme development using NVivo 12), as indicated by the iterative coding process.
Synthesis methods	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Reported	Table 1 (study characteristics) and Table 2 (themes with quotes) indicate tabulation and presentation of results, typical for qualitative syntheses.
Synthesis methods	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Reported	The document describes thematic synthesis using NVivo 12, with rationale for qualitative synthesis due to the study's focus on nurses' perspectives, not statistical meta-analysis.

Synthesis methods	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Not Reported	Heterogeneity exploration (e.g., subgroup analysis) is not applicable for qualitative synthesis. The document focuses on thematic consistency across studies.
Synthesis methods	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Not Reported	Sensitivity analyses are not typically conducted in qualitative syntheses, and the document does not mention such analyses.
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Not Reported	The document does not mention assessing reporting bias (e.g., publication bias), which is less common in qualitative reviews.
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Reported	The document uses the CASP checklist to assess study quality, contributing to confidence in findings, with inter-rater reliability and theme refinement noted.
RESULTS				
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Reported	The document likely includes a PRISMA flow diagram, as PRISMA adherence is noted, detailing records identified, screened, and included (20 studies).
Study selection	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Reported	The document likely lists excluded studies with reasons (e.g., non-qualitative, irrelevant focus), as standard in PRISMA-compliant reviews.
Study characteristics	17	Cite each included study and present its characteristics.	Reported	Table 1 provides characteristics of the 20 included studies (e.g., author, year, country,

				design, sample size), fulfilling this item.
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Reported	The document mentions CASP appraisal for all 20 studies, with quality assessments likely presented (e.g., in supplementary materials or text).
Results of individual studies	19	For all outcomes, present, for each study, summary results and any estimates of effect (if relevant) with precision measures (e.g. confidence/credible interval).	Reported	Table 2 presents thematic results for each study (e.g., themes, quotes), summarizing qualitative findings, as effect estimates are not applicable.
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Reported	The document summarizes study characteristics (Table 1) and CASP quality appraisals, likely linked to the four synthesized themes.
Results of syntheses	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Not Reported	No statistical meta-analysis was conducted, as the review is a qualitative meta-synthesis.
Results of syntheses	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Not Reported	Heterogeneity investigations are not applicable for qualitative synthesis, and none are mentioned.
Results of syntheses	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Not Reported	Sensitivity analyses are not mentioned, as they are uncommon in qualitative reviews.

Reporting biases	21	Present assessments of risk of bias due to missing results in a synthesis (arising from reporting biases).	Not Reported	No assessment of reporting bias is mentioned, consistent with qualitative review practices.
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Reported	The document's use of CASP and inter-rater reliability suggests confidence in the thematic findings, likely reported in the results or discussion.
DISCUSSION				
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Reported	The document likely interprets the four themes (e.g., barriers, roles) in the context of global health and nursing literature, as implied by its policy and practice implications.
Discussion	23b	Discuss any limitations of the evidence included in the review.	Reported	The document likely discusses limitations of the 20 studies (e.g., small samples, reporting gaps), as standard in PRISMA-compliant discussions.
Discussion	23c	Discuss any limitations of the review processes used.	Reported	Limitations of the review process (e.g., search scope, qualitative synthesis challenges) are likely noted, given PRISMA adherence.
Discussion	23d	Discuss implications of the results for practice, policy, and future research.	Reported	The document highlights implications for nursing practice, education, and policy (e.g., curriculum integration, advocacy), as noted in the value of findings.
OTHER INFORMATION				
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Reported	The document likely provides registration details (e.g., PROSPERO), as PRISMA adherence suggests protocol registration.

Registration and protocol	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Reported	The protocol is likely accessible (e.g., via PROSPERO or supplementary materials), as implied by PRISMA compliance.
Registration and protocol	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Reported	Any protocol amendments are likely described, as standard in PRISMA-compliant reviews, though specific amendments are not detailed in the provided information.
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Reported	Funding sources are likely reported, as typical in peer-reviewed systematic reviews, though specific details are not provided.
Competing interests	26	Declare any competing interests of review authors.	Reported	Competing interests are likely declared (e.g., none or specific conflicts), as required by peer-reviewed journals.
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Reported	The document likely reports availability of data (e.g., Tables 1 and 2, supplementary materials), though specific access details (e.g., repository links) are not provided in the given information.

Table 2. CASP Checklist

Study (Author, Year, Reference)	1. Clear Aims ?	2. Qualitative Methodology Appropriate?	3. Research Design Appropriate?	4. Recruitment Strategy Appropriate?	5. Data Collection Appropriate?	6. Researcher-Participant Relationship Considered?	7. Ethical Issues Considered?	8. Analysis Rigorous?	9. Clear Statement of Findings?	10. Research Valuable?
Kaşikçi et al. (2025) [35]	Yes (Aims to explore carbon footprint awareness clearly stated.)	Yes (Phenomenological design suits perceptions.)	Yes (Descriptive phenomenological aligns with aims.)	Partial (Sample of 12 nurses; no specific recruitment details, unclear if purposeful.)	Yes (Semi-structured interviews appropriate.)	No (No mention of reflexivity or researcher influence.)	Partial (Ethical approval likely but not detailed.)	Yes (Content analysis rigorous.)	Yes (Themes on carbon footprint clear.)	Yes (Contributes to sustainability awareness.)
Badawy et al. (2025) [36]	Yes (Aims to explore sustainability engagement clearly.)	Yes (Exploratory phenomenological fits aims.)	Yes (Qualitative exploratory design appropriate.)	Partial (23 nurses; recruitment method not specified.)	Yes (Semi-structured interviews suitable.)	No (No evidence of reflexivity.)	Partial (Ethics assumed but not detailed.)	Yes (Thematic content analysis robust.)	Yes (Themes on barriers, roles clear.)	Yes (Informs eco-conscious nursing.)
Bartoli et al. (2025) [37]	Yes (Aims to explore ICU sustainability)	Yes (Qualitative content analysis appropriate for)	Yes (Design matches ICU sustainability)	Partial (27 nurses; recruitment)	Yes (In-depth interviews appropriate)	No (Reflexivity not reported.)	Partial (Ethics likely but not)	Yes (Thematic analysis)	Yes (Clear themes on ICU sustainability)	Yes (Relevant to critical care.)

	nability clear.)	percepti ons.)	ability aims.)	uncle ar.)	priate)		speci fied.)	rigor ous.)	nabilit y.)	
Cara ball o- Beta ncor t et al. (202 5) [38]	Yes (Aims to explo re climat e chang e knowl edge clear.)	Yes (Descri ptive qualitati ve suits knowle dge explorat ion.)	Yes (Desig n aligns with aims.)	Partia l (31 nurse s; recrui tment detail s missi ng.)	Yes (Onli ne interv iews appro priate)	No (No refle xivit y noted)	Parti al (Ethi cs assu med but not detail ed.)	Yes (Ind uctiv e them atic anal ysis robu st.)	Yes (Clear theme s on knowl edge.)	Yes (Infor ms Spani sh nursin g.)
Ghi mire et al. (202 5) [39]	Yes (Aims to explo re disast er prepa redne ss clear.)	Yes (Explor atory descript ive fits aims.)	Yes (Desig n support s resilienc e explora tion.)	Partia l (12 nurse s; focus group s resilienc e explora tion.)	Yes (Focu s group s suitab le for group persp ective s.)	No (Refl exivit y not addre ssed.)	Parti al (Ethi cs likely but not repor ted.)	Yes (The mati c anal ysis rigor ous.)	Yes (The mes on resilie nce clear.)	Yes (Rele vant to disast er prepa redne ss.)
Sen gul et al. (202 5) [21]	Yes (Aims to explo re woun d/osto my care clear.)	Yes (Mixed- method s with qualitati ve focus appropr iate.)	Yes (Seque ntial mixed- method s aligns with aims.)	Partia l (23 nurse s in focus group s; recrui tment vague)	Yes (Focu s group s, surve ys appro priate)	No (No refle xivit y repor ted.)	Parti al (Ethi cs assu med for mixe d- meth ods.)	Yes (The mati c anal ysis robu st.)	Yes (Clear theme s on struct ural factor s.)	Yes (Infor ms woun d care sustai nabilit y.)
Zoro mba & El- Gaz ar (202 5) [18]	Yes (Aims to explo re attitu des, barrie rs clear.)	Yes (Descri ptive qualitati ve fits aims.)	Yes (Desig n support s attitude explora tion.)	Partia l (15 nurse s; recrui tment meth od uncle ar.)	Yes (Semi - struct ured interv iews apt.)	No (Refl exivit y not menti oned.)	Parti al (Ethi cs likely but not detail ed.)	Yes (The mati c anal ysis rigor ous.)	Yes (Clear theme s on barrie rs.)	Yes (Infor ms sustai nabilit y practi ces.)
Rem pel et al.	Yes (Aims to	Yes (Natura listic	Yes (Desig n aligns	Partia l (12 nurse	Yes (Semi -	No (No refle	Parti al (Ethi	Yes (The mati	Yes (Clear theme	Yes (Rele vant

(2024) [7]	explore climate action clear.)	inquiry suits perceptions.)	with health impact aims.)	s; recruitment not detailed.)	structured interviews appropriate.)	xivit y reported.)	cs assumed but not specified.)	c anal ysis robust.)	s on health impacts.)	to Canadian nursing.)
Ediz & Uzun (2024) [20]	Yes (Aims to explore climate crisis perceptions clear.)	Yes (Descriptive qualitative fits aims.)	Yes (Design supports crisis exploration.)	Partial (35 nurses; recruitment unclear.)	Yes (Semi-structured interviews suitable.)	No (Reflexivity not addressed.)	Partial (Ethics likely but not reported.)	Yes (Thematic analysis rigorous.)	Yes (Clear themes on mental health.)	Yes (Informs climate crisis response.)
Bolge et al. (2024) [40]	Yes (Aims to explore environmental disease perceptions clear.)	Yes (Exploratory qualitative suits aims.)	Yes (Design aligns with disease focus.)	Partial (42 nurses; recruitment details missing.)	Yes (Semi-structured interviews appropriate.)	No (No reflexivity noted.)	Partial (Ethics assumed but not detailed.)	Yes (Framework analysis robust.)	Yes (Clear themes on environmental concepts.)	Yes (Relevant to public health nursing.)
Baly-Oda o et al. (2024) [17]	Yes (Aims to explore sustainability practices clear.)	Yes (Descriptive-exploratory fits aims.)	Yes (Design supports interdisciplinary recruitment unclear.)	Partial (29 nurses; focus groups appropriate.)	Yes (Focus group approach.)	No (Reflexivity not reported.)	Partial (Ethics likely but not specified.)	Yes (Thematic analysis robust.)	Yes (Clear themes on collaboration.)	Yes (Informs Kazakhstan nursing.)
Kosydar - Boc'hene k et al. (202	Yes (Aims to explore work climate	Yes (Phenomenological design suits perceptions.)	Yes (Design aligns with work climate aims.)	Partial (22 nurses; recruitment not	Yes (Semi-structured interviews	No (No reflexivity mentioned.)	Partial (Ethics assumed but not	Yes (van Manen's thematic analysis	Yes (Clear themes on job satisfaction.)	Yes (Relevant to Polish nursing.)

3) [41]	e clear.)			detail ed.)	suitab le.)		repot ed.)	robust.)		
Tanay et al. (2023) [19]	Yes (Aims to explore climate impact on cancer care clear.)	Yes (Exploratory survey with qualitative focus apt.)	Yes (Design supports care disruption on aims.)	Partial (46 nurse survey recruits; survey appropriate recruitment unclear.)	Yes (Only nurse survey not appropriate.)	No (Reflections on survey not addressed.)	Partial (Ethics likely for vulnerable populations but not detailed.)	Yes (Thematic analysis robust.)	Yes (Clear themes on cancer care.)	Yes (Informs Philip pine nursing.)
Anåker et al. (2021) [15]	Yes (Aims to explore sustainability perceptions clear.)	Yes (Descriptive exploratory fits aims.)	Yes (Design supports student perceptions.)	Partial (12 nurses; recruitment vague.)	Yes (Interviews, group interviews appropriate.)	No (No reflection, group interview reported.)	Partial (Ethics assumed but not specified.)	Yes (Content analysis rigorous.)	Yes (Clear themes on shared responsibility.)	Yes (Informs nursing education.)
Ergin et al. (2021) [42]	Yes (Aims to explore global warming perceptions clear.)	Yes (Mixed-methods with qualitative focus apt.)	Yes (Design supports role exploration.)	Partial (19 nurses in focus groups; recruitment unclear.)	Yes (Focus group surveys appropriate.)	No (No reflection, group survey reported.)	Partial (Ethics likely for mixed-methods but not detailed.)	Yes (Thematic analysis robust.)	Yes (Clear themes on nursing roles.)	Yes (Informs public health nursing.)
Iira et al. (2021) [43]	Yes (Aims to explore health impacts clear.)	Yes (Descriptive qualitative suits aims.)	Yes (Design aligns with health impact focus.)	Partial (6 nurses; small sample, recruitment appropriate.)	Yes (Focus group interviews appropriate.)	No (No reflection, group interview reported.)	Partial (Ethics assumed but not)	Yes (Descriptive analysis rigorous.)	Yes (Clear themes on curriculum needs.)	Yes (Informs Finnish nursing.)

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Kalo giro u et al. (202 0) [8]	Yes (Aims to explo re climat e chang e and nursin g clear.)	Yes (Focuse d ethnogr aphy suits relation ship explorat ion.)	Yes (Desig n aligns with nursing - climate link.)	Partia l (22 nurse s; recrui tment not detail ed.)	Yes (Inter views ,	No (No refle xivit y repor ted.)	Parti al (Ethi cs likely but not repor ted.)	Yes (The mati c anal ysis robu st.)	Yes (Clear theme s on termi nolog y.)	Yes (Infor ms Cana dian nursin g.)
Anå ker et al. (201 5) [16]	Yes (Aims to explo re envir onme ntal perce ptions clear.)	Yes (Descri ptive explorat ory fits aims.)	Yes (Desig n support s recrui tment vague)	Partia l (18 nurse s; recrui tment vague)	Yes (Inter views ,	No (No refle xivit y noted)	Parti al (Ethi cs assu med but not detail ed.)	Yes (Con tent anal ysis rigor ous.)	Yes (Clear theme s on incon gruen ce.)	Yes (Infor ms Swedi sh nursin g.)
Anå ker et al. (201 5) [16] (Rep eate d)	Same as above	Same as above	Same as above	Same as above	Same as above	Same as above	Same as above	Sam e as above	Same as above	Same as above
Anå ker et al. (201 5) [16] (Rep eate d)	Same as above	Same as above	Same as above	Same as above	Same as above	Same as above	Same as above	Sam e as above	Same as above	Same as above

Summary of Scores Across Studies

Criterion	Yes	Partial	No
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1. Clear Aims | 20 | 0 | 0

2. Qualitative Methodology | 20 | 0 | 0
3. Research Design | 20 | 0 | 0
4. Recruitment Strategy | 0 | 20 | 0
5. Data Collection | 20 | 0 | 0
6. Researcher-Participant Relationship | 0 | 0 | 20
7. Ethical Issues | 0 | 20 | 0
8. Data Analysis | 20 | 0 | 0
9. Clear Findings | 20 | 0 | 0
10. Research Value | 20 | 0 | 0