PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Title (p.1).
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Abstract (p.1). (Structured summary of objectives, data sources, study counts (N=113; N=929), major domains, and key conclusions.)
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Section 1. Introduction (p.1–p.2).
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Abstract (p.1) and Section 1. Introduction (p.1–p.2). (Objective stated as mapping mechanisms, methodological evolution, and governance implications using dual datasets.)
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Section 3.2 (Inclusion/exclusion criteria) (p.6) and Section 3.3 (Eligibility and exclusion reasons at full-text stage) (p.6–p.7).
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.	Section 3.2 (Databases and date of last search) (p.6) and Data Availability Statement (replicability constraints for WoSCC export) (p.21).
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Section 3.2 (Illustrative query + limits) (p.6) and Supplementary Materials: Table S1 (full search strategies and filters) (referenced on p.21).
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.	Section 3.3 (Identification → Screening → Eligibility → Inclusion; deduplication rules; screening counts; no automation tools) (p.6–p.7) and Figure 2 PRISMA flow diagram (p.7).
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Section 3.3 (standardized extraction + cross-check during full-text verification) (p.7) and Section 3.6 (cross-verification and item-by-item checks) (p.8).(data extraction sheet); and Methods 3.1/3.6: “We did not contact study authors for missing information and used no automation tools for extraction.”; Supplementary Table S4 (random QC audit of screening consistency, n=100).
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.	Methods §3.5 (pp.7–8) and Supplementary File S1 (extracted/coded dataset; MH outcomes and definitions).
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Section 3.5 (study design, sample/region, exposure measures, modeling approaches) (p.7–p.8) and Supplementary Materials (Tables S3–S4 referenced on p.21).



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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.	Section 3.6 (Risk of bias/quality appraisal statement: no formal RoB tool applied; rationale and alternative safeguards) (p.8).
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.	N/A (No meta-analysis or pooled effect estimation was conducted; the review focuses on mapping mechanisms and methodological trends rather than estimating summary effect sizes; see Section 3.6, p.8).
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)).	Section 3.1 (dual-dataset design: N=929 bibliometric corpus; N=113 qualitative synthesis sample) (p.5–p.6) and Section 3.5 (coding scheme and synthesis steps) (p.7–p.8).
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Section 3.4 (field standardization; Excel/Python preprocessing; format conversion for VOSviewer) (p.7–p.8) and Section 3.6 (cross-verification of extracted fields) (p.8).
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Section 3.4 (visualization tools, thresholds, export/post-processing) (p.7–p.8) and Results figures/tables (Figures 1–6; Tables 1–3) (p.5, p.7, p.9–p.19).
	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.	Section 3.5 (four-step synthesis logic + six mechanistic pathways + method evolution and policy translation) (p.7–p.8).
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	N/A (No quantitative heterogeneity exploration such as subgroup/meta-regression was applicable because no meta-analysis was performed; the review uses structured qualitative/thematic synthesis; see Section 3.5–3.6, p.7–p.8).
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Section 3.6 (threshold perturbation and sensitivity checks for bibliometric robustness) (p.8).
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	N/A (No synthesis-level reporting-bias assessment was undertaken because no meta-analysis/pooled estimates were produced; scope is mapping review with bibliometric + qualitative synthesis; see Section 3.6, p.8).
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	N/A (No GRADE or formal certainty-of-evidence rating was performed due to the scoping/mapping objective and absence of pooled effect estimation; see Section 3.6, p.8).
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.	Methods 3.3 (record counts, exclusions, full-text assessment, final inclusion) (p.6–p.7) and Figure 2 PRISMA flow diagram (p.7).
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain	Methods 3.3 (pp.6–7) and Supplementary Table S2 (full-text exclusions with citations and reasons; n=2).



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		why they were excluded.	
Study characteristics	17	Cite each included study and present its characteristics.	Methods 3.5 (coded study characteristics) (p.7–p.8) and Supplementary Materials (Tables S3–S4: included study list and coded/extracted fields referenced on p.21).
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	N/A (Formal study-level risk-of-bias ratings were not produced; rationale and alternative quality safeguards are stated in Section 3.6, p.8).
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Section 2 (mechanistic pathways synthesis) (p.2–p.4) and Sections 4–6 (methodological and intervention evidence synthesis with representative cases/tables) (p.8–p.19); Supplementary Materials (coded dataset referenced on p.21).
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Section 3.5 (synthesis structure and domains) (p.7–p.8) and Section 3.6 (quality safeguards and rationale for no RoB tool) (p.8).
	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.	N/A (No meta-analysis/statistical pooling was conducted; synthesis is bibliometric mapping + structured qualitative synthesis; see Sections 3.4–3.6 and Sections 4–6, p.7–p.19).
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	N/A (No investigations of heterogeneity were conducted because no pooled quantitative synthesis was performed; see Methods 3.6, p.8).
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Section 3.6 (bibliometric parameter sensitivity/threshold perturbation) (p.8).
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	N/A (Not assessed because no synthesis-level pooled estimates were produced; mapping review scope; see Section 3.6, p.8).
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	N/A (No formal certainty rating (e.g., GRADE) was conducted due to mapping objective and absence of pooled effect sizes; see Section 3.6, p.8).
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Sections 5–7 (interpretation and outlook) (p.14–p.20).
	23b	Discuss any limitations of the evidence included in the review.	Section 5. Research Challenges and Methodological Reflections (p.14–p.16).
	23c	Discuss any limitations of the review processes used.	Section 5 (limitations and methodological reflections) (p.14–p.16) and Data Availability Statement (database licensing constraints for raw export redistribution) (p.21).
	23d	Discuss implications of the results for practice, policy, and future research.	Section 6 (policy and intervention pathways) (p.17–p.19) and Section 7 (conclusions and future directions) (p.19–p.20).

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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.	Section 3.1 (Registration statement) (p.5): "This review was not registered in PROSPERO/OSF, and no public protocol was published."
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	N/A (No public protocol was published; stated in Section 3.1, p.5).
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	N/A (Not registered and no protocol; therefore no amendments to report; see Section 3.1, p.5).
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Funding (p.20) and Acknowledgments (p.21).
Competing interests	26	Declare any competing interests of review authors.	Conflicts of Interest (p.21).
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.	Data Availability Statement (p.21) and Supplementary Materials description (p.21: Table S1, File S1, Tables S3–S4; plus licensing restriction statement for WoSCC raw records).

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