Systematic Review vs Scoping Review: Systematic Review with ☸SAIMSARA.

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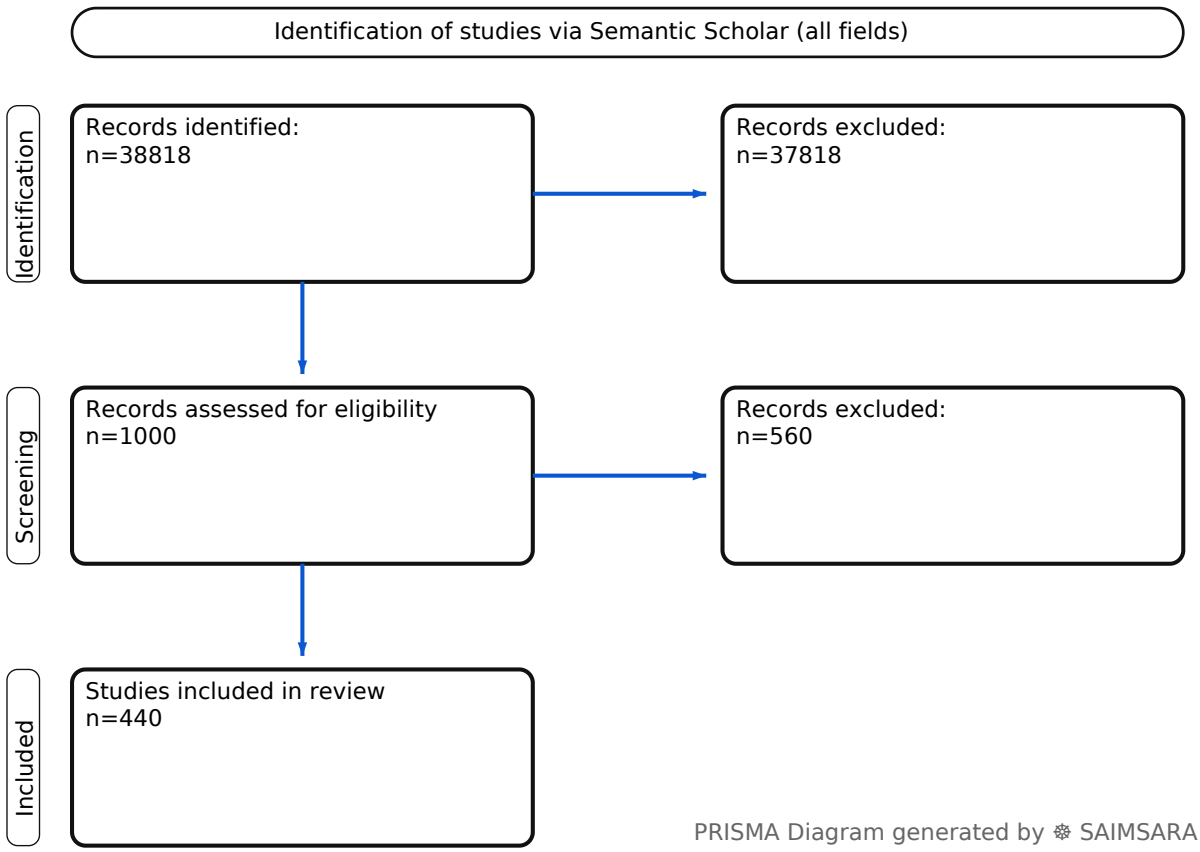
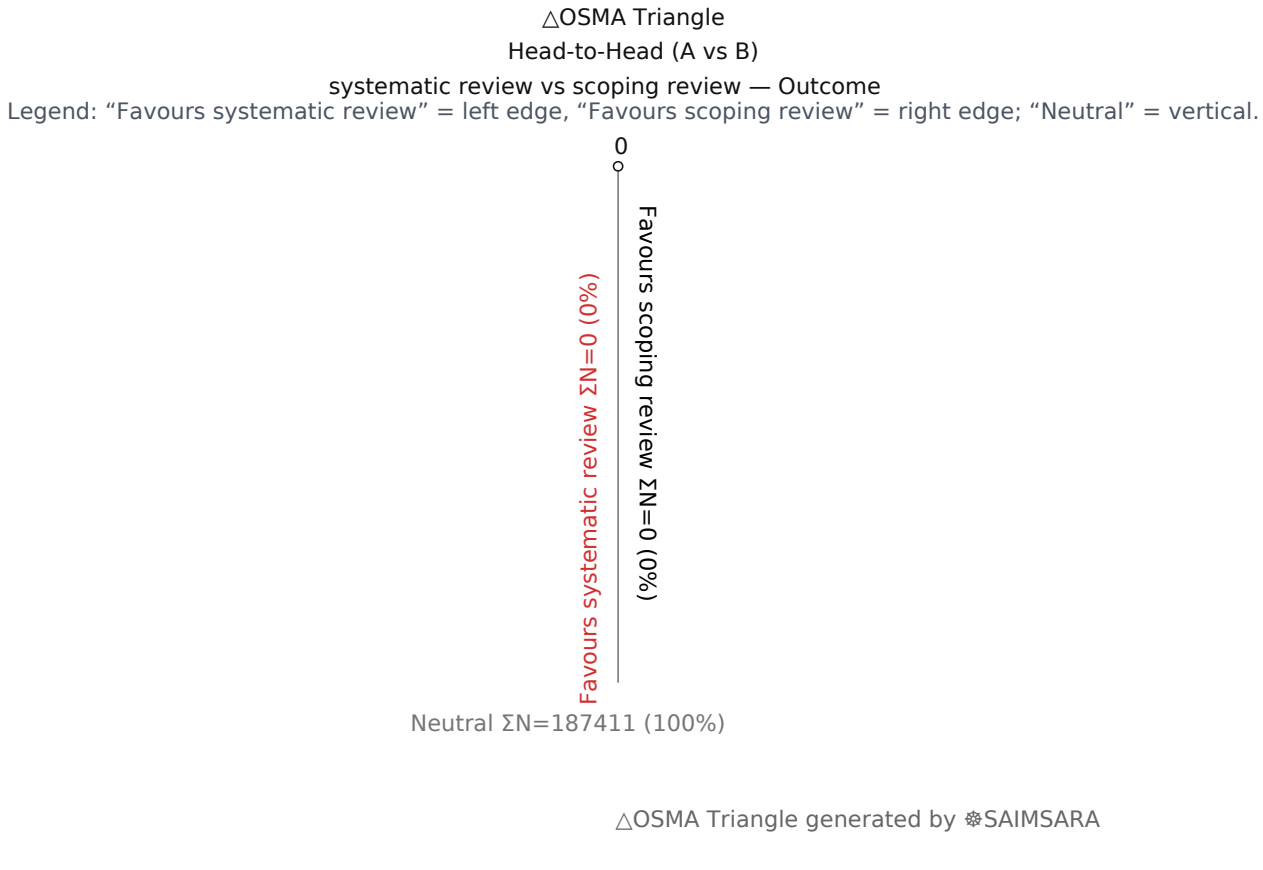
Abstract: To synthesize themes and numerical findings from extracted literature to delineate the characteristics, applications, and methodological considerations of systematic reviews and scoping reviews, and to identify key research gaps. The review utilises 440 studies with 187411 total participants (naïve ΣN). This paper synthesizes the current understanding of systematic reviews and scoping reviews, highlighting their distinct yet complementary roles in evidence synthesis. Scoping reviews are instrumental in mapping nascent or complex fields, clarifying concepts, and identifying research gaps, often serving as a precursor to more focused systematic reviews. In specific contexts, systematic reviews appear more frequently, with a median of 17.5 systematic reviews compared to 4 scoping reviews identified in umbrella reviews. A key limitation is the lack of direct comparative studies on the methodological efficacy of these review types. Future research should prioritize comparative methodological studies and the development of standardized reporting guidelines to enhance the rigor and utility of both systematic and scoping reviews in advancing scientific knowledge and informing practice.

Keywords: Scoping review; Systematic scoping review; Rapid review; Review methodology; Reporting guidelines; Evidence synthesis; Knowledge gaps; Review automation

Review Stats

- Generated: 2026-02-16 18:21:58 CET
- Plan: Pro (expanded craft tokens; source: Semantic Scholar)
- Source: Semantic Scholar
- Scope: All fields
- Keyword Gate: Fuzzy (≥60% of required terms, minimum 2 terms matched in title/abstract)
- Total Abstracts/Papers: 38818
- Downloaded Abstracts/Papers: 1000
- Included original Abstracts/Papers: 440
- Total study participants (naïve ΣN): 187411


Identification of studies via Semantic Scholar (all fields)
Identification
Records identified:
n=38818
Records excluded:
n=37818
Screening
Records assessed for eligibility
n=1000
Records excluded:
n=560
Included
Studies included in review
n=440
PRISMA Diagram generated by ☸ SAIMSARA


△OSMA Triangle
Head-to-Head (A vs B)
systematic review vs scoping review — Outcome
Legend: “Favours systematic review” = left edge, “Favours scoping review” = right edge; “Neutral” = vertical.
0
Favours scoping review ΣN=0 (0%)
Favours systematic review ΣN=0 (0%)
Neutral ΣN=187411 (100%)
△OSMA Triangle generated by ☸SAIMSARA

Outcome-Sentiment Meta-Analysis (OSMA): *(LLM-only)*

Frame: Head-to-Head (A vs B) • *Source*: Semantic Scholar

Comparators: A = systematic review; B = scoping review

Outcome: Outcome Typical timepoints: peri/post-op, 5-day. Reported metrics: %, CI, p.

Common endpoints: Common endpoints: complications, mortality, qol.

Predictor: systematic review vs scoping review — exposure/predictor. Routes seen: oral, topical, sc.

- **1) A favored (systematic review)** — Outcome with systematic review vs scoping review — — — ΣN=0
- **2) B favored (scoping review)** — Outcome with systematic review vs scoping review — — — ΣN=0
- **3) Neutral (no difference)** — Outcome with systematic review vs scoping review — [1], [2], [3], [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18], [19], [20], [21], [22], [23], [24], [25], [26], [27], [28], [29], [30], [31], [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42], [43], [44], [45], [46], [47], [48], [49], [50], [51], [52], [53], [54], [55], [56], [57], [58], [59], [60], [61], [62], [63], [64], [65], [66], [67], [68], [69], [70], [71], [72], [73], [74], [75], [76], [77], [78], [79], [80], [81], [82], [83], [84], [85], [86], [87], [88], [89], [90], [91], [92], [93], [94], [95], [96], [97], [98], [99], [100], [101], [102], [103], [104], [105], [106], [107], [108], [109], [110], [111], [112], [113], [114], [115], [116], [117], [118], [119], [120], [121], [122], [123], [124], [125], [126], [127], [128], [129], [130], [131], [132], [133], [134], [135], [136], [137], [138], [139], [140], [141], [142], [143], [144], [145], [146], [147], [148], [149], [150], [151], [152], [153], [154], [155], [156], [157], [158], [159], [160], [161], [162], [163], [164], [165], [166], [167], [168], [169], [170], [171], [172], [173], [174], [175], [176], [177], [178], [179], [180], [181], [182], [183], [184], [185], [186], [187], [188], [189], [190], [191], [192], [193], [194], [195], [196], [197], [198], [199], [200], [201], [202], [203], [204], [205], [206], [207], [208], [209], [210], [211], [212], [213], [214], [215], [216], [217], [218], [219], [220], [221], [222], [223], [224], [225], [226], [227], [228], [229], [230], [231], [232], [233], [234], [235], [236], [237], [238], [239], [240], [241], [242], [243], [244], [245], [246], [247], [248], [249], [250], [251], [252], [253], [254], [255], [256], [257], [258], [259], [260], [261], [262], [263], [264], [265], [266], [267], [268], [269], [270], [271], [272], [273], [274], [275], [276], [277], [278], [279], [280], [281], [282], [283], [284], [285], [286], [287], [288], [289], [290], [291], [292], [293], [294], [295], [296], [297], [298], [299], [300], [301], [302], [303], [304], [305], [306], [307], [308], [309], [310], [311], [312], [313], [314], [315], [316], [317], [318], [319], [320], [321], [322], [323], [324], [325], [326], [327], [328], [329], [330], [331], [332],

[333], [334], [335], [336], [337], [338], [339], [340], [341], [342], [343], [344], [345], [346], [347], [348], [349], [350], [351], [352], [353], [354], [355], [356], [357], [358], [359], [360], [361], [362], [363], [364], [365], [366], [367], [368], [369], [370], [371], [372], [373], [374], [375], [376], [377], [378], [379], [380], [381], [382], [383], [384], [385], [386], [387], [388], [389], [390], [391], [392], [393], [394], [395], [396], [397], [398], [399], [400], [401], [402], [403], [404], [405], [406], [407], [408], [409], [410], [411], [412], [413], [414], [415], [416], [417], [418], [419], [420], [421], [422], [423], [424], [425], [426], [427], [428], [429], [430], [431], [432], [433], [434], [435], [436], [437], [438], [439], [440] — ΣN=187411

1) Introduction

Systematic reviews and scoping reviews represent distinct yet complementary methodologies within evidence synthesis, each serving unique research objectives. While systematic reviews typically aim to answer specific, focused questions by critically appraising and synthesizing all relevant evidence, scoping reviews are generally broader in scope, designed to map existing literature, identify knowledge gaps, clarify concepts, or inform future research [1, 86, 157, 201, 298, 321, 333, 336, 426]. Despite their differing purposes, confusion regarding their application and methodological distinctions persists [201, 298, 321]. This paper explores the landscape of these review types, their characteristics, and their applications, drawing insights from a diverse body of literature.

2) Aim

To synthesize themes and numerical findings from extracted literature to delineate the characteristics, applications, and methodological considerations of systematic reviews and scoping reviews, and to identify key research gaps.

3) Methods

Systematic review with multilayer AI research agent: keyword normalization, retrieval & structuring, and paper synthesis (see SAIMSARA About section for details).

- **Bias:** The qualitative assessment of study designs reveals a significant proportion of reviews that do not specify a rigorous design (N/A) or employ mixed methods, potentially introducing variability in methodological rigor. Several studies explicitly highlight concerns about low methodological quality, risk of bias, or suboptimal adherence to reporting guidelines [58, 102, 119, 158, 238, 421, 422].

4) Results

4.1 Study characteristics: The extracted literature primarily comprises systematic reviews and scoping reviews, often referred to as systematic scoping reviews (SSR), with a notable number of mixed-design studies. Many studies do not specify a particular study design (N/A). Populations and settings are highly diverse, frequently focusing on health-related contexts such as mental health, healthcare workers, specific patient groups (e.g., adolescents, older adults, cancer patients), and digital health interventions. Follow-up periods are often not specified for the reviews themselves, but primary studies within these reviews can have follow-up durations, such as 1.5 years for psychological well-being in children during the COVID-19 pandemic [137].

4.2 Main numerical result aligned to the query:

In specific contexts where both systematic reviews and scoping reviews were identified within a larger synthesis, the number of systematic reviews was notably higher than scoping reviews. For instance, one umbrella review identified 20 systematic reviews and 4 scoping reviews [260], while another assessment for treatment recommendations involved 15 systematic reviews and 4 scoping reviews [440]. Across these instances, the median number of systematic reviews identified was 17.5 (range 15–20), compared to a median of 4 (range 4–4) for scoping reviews.

4.3 Topic synthesis:

- **Review Methodology and Purpose:** Scoping reviews are used for identifying knowledge gaps, clarifying concepts, investigating research conduct, and can precede systematic reviews [1, 86, 157, 201, 298, 321, 333, 336, 426]. They explore broader questions and map evidence, while systematic reviews summarize and assess evidence strength [298]. Some studies combine both approaches [2, 5, 6].
- **Reporting Quality and Guidelines:** Reporting quality is often low for systematic reviews in engineering [14] and for health app-focused reviews [8]. Suboptimal adherence to reporting guidelines was reported in 86.0% of studies [238]. PRISMA-ScR is a specific reporting guideline for scoping reviews [136, 154], with ongoing efforts to update PRISMA extensions for various review types [3].
- **Automation in Review Processes:** Automation techniques are being developed for all systematic review stages, though real-world adoption is limited [11]. Large Language Models (LLMs) have 53 identified use cases in automating educational tasks [13]. Semi-automated machine learning tools like Research Screener can reduce abstract screening burden by 60–96% [429].
- **Artificial Intelligence (AI) in Healthcare:** Digital mental health services using AI are associated with reductions in depressive and anxiety symptoms (standardized mean difference -0.49 to -0.66) [2]. Ethical issues, such as limited examination of ethical principles

and lack of practical tools, are prevalent in AI application in healthcare [21]. AI in primary care may impact health inequity through algorithmic bias and access issues [27]. Racial bias in clinical machine learning models was present in 67% of studies, with inconsistent fairness metrics [168].

- **Digital Health and mHealth Interventions:** Mobile health (mHealth) interventions show promise for chronic disease management, with 41% of apps based on behavioral theory and 24% measuring maintenance of behavior change [358]. Telehealth interventions for Opioid Use Disorder (OUD) are associated with higher patient satisfaction, comparable retention, and reduced costs [372]. However, mHealth apps face problems related to use and adherence, and usability [172].
- **Mental Health Outcomes:** Digital mental health interventions show some clinical benefit for depression and anxiety in adolescents and young adults [303]. Fear of COVID-19 infection prevalence ranged from 18.1–45.2%, with increased risk for females, younger adults, and healthcare workers [200]. Disordered eating prevalence in male elite athletes was up to 32.5% [219]. Farmers' mental health research frequently measured stress (41.9%), suicide (33.1%), and depression (32.6%) [204].
- **Healthcare Workforce and Practice:** Workplace violence against healthcare workers is a significant concern, with education and training consistently supported as strategies [34]. Moral distress in physicians involves conflicts within personal beliefs and values [33]. Pandemics increase healthcare providers' workloads, including more care required and higher patient-to-nurse ratios [144].
- **Vulnerable Populations and Health Equity:** Studies on Indigenous mental health link outcomes to meteorological factors and seasonality [64]. Financial risk protection from out-of-pocket health spending in low- and middle-income countries (LMICs) often focuses on India and China, lacking comprehensive measurement [189]. Racial and ethnic disparities affect access to palliative and end-of-life care due to social-environmental barriers [123].
- **Environmental and Social Determinants of Health:** High screen time is associated with unfavorable psychological outcomes, while green time is linked to favorable outcomes in young people [49]. Elevated ambient temperature during pregnancy increases the risk of adverse outcomes, with pre-term birth being the most common (n=30) [190]. Urban agriculture has positive impacts on food security, nutrition, and mental health, with 38% of studies from North America and 37% from Sub-Saharan Africa [209, 237].
- **Specific Health Conditions and Interventions:** Pharmacist-led medication reviews show mixed evidence of effectiveness, with a risk ratio of 0.93 for reduced hospital readmissions and an odds ratio of 3.11 for achieving diabetes control [15]. Long COVID presents controversies in definition, with predominant symptoms including fatigue, breathlessness, and arthralgia [22, 198]. Cochlear implantation is beneficial for most adults with severe-to-profound hearing loss, improving average word perception ability from 8.2% to 53.9% [378].

5) Discussion

5.1 Principal finding: In specific contexts where both systematic reviews and scoping reviews were identified within a larger synthesis, systematic reviews were more frequently observed, with a median of 17.5 (range 15–20) systematic reviews compared to a median of 4 (range 4–4) scoping reviews [260, 440]. This suggests a higher prevalence or perhaps a more established role for systematic reviews in synthesizing evidence for specific recommendations.

5.2 Clinical implications:

- **Digital Mental Health Integration:** Digital mental health services show promise in reducing depressive and anxiety symptoms, suggesting they can be integrated into clinical workflows to support patient care [2].
- **Standardized Reporting for Apps:** The inconsistent or unclear reporting in health app-focused reviews [8] necessitates consensus reporting standards to ensure reliability and facilitate clinical decision-making regarding health apps.
- **Addressing Health Inequities in AI:** AI implementation in primary care requires careful consideration of its impact on health inequity, including access, trust, and algorithmic bias, to avoid exacerbating existing disparities [27].
- **Workplace Violence Prevention:** Education and training are consistently supported strategies for preventing workplace violence in healthcare settings, indicating a clear need for their consistent implementation to protect healthcare providers [34].
- **Targeted Mental Health Support:** Given the high prevalence of stress, suicide, and depression among farmers [204] and the increased risk of fear of COVID-19 in specific populations like healthcare workers [200], targeted mental health interventions and support systems are crucial.

5.3 Research implications / key gaps:

- **Comparative Methodological Efficacy:** There is a need for studies directly comparing the efficiency, comprehensiveness, and potential biases of systematic reviews versus scoping reviews for similar research questions, especially given the observation of similar conclusions from rapid reviews to systematic reviews but a lack of bias comparison [300].
- **Standardized Outcome Measures:** Research on interventions for conditions like cancer-related fatigue [284] and loneliness in older adults [361] highlights a critical need for standardized outcome measures to enable robust comparisons and synthesis of evidence.
- **Longitudinal and Causal Studies:** Many areas, such as digital public health surveillance [44] and flow research [181], suffer from a paucity of longitudinal and experimental studies, limiting understanding of causal structures and long-term impacts.

- **Culturally Adapted Tools:** For conditions like mental health stigma in Nepal [193] and autism spectrum disorder in Arab countries [87], there is a significant gap in culturally adapted assessment tools and intervention research.
- **Real-World AI Implementation:** While AI applications in various fields like hand surgery [164] and manufacturing [362] show promise, their implementation largely remains within experimental studies, necessitating research on real-world adoption, benefits, and challenges.

5.4 Limitations:

- **Lack of Direct Comparison** — The structured summary does not provide head-to-head comparisons of outcomes or methodological rigor *between* systematic reviews and scoping reviews.
- **Heterogeneity of Sample Sizes** — The "Sample Size (N)" field often refers to different entities (primary studies, populations, or other reviews), making direct quantitative comparison across studies challenging.
- **Qualitative Bias Inference** — Bias assessment was qualitatively inferred from study design descriptions (e.g., N/A, Mixed) rather than explicit, standardized risk of bias assessments for each included study.
- **Predominance of Health Sciences** — The majority of extracted studies fall within health-related fields, limiting the generalizability of findings to other scientific disciplines.
- **Reporting Quality Issues** — Several studies highlight poor or inconsistent reporting quality in both systematic and scoping reviews, which can affect the reliability and reproducibility of synthesized findings.

5.5 Future directions:

- **Comparative Methodological Studies** — Conduct studies directly comparing the efficiency, comprehensiveness, and potential biases of systematic reviews versus scoping reviews for similar research questions.
- **Standardized Reporting Guidelines** — Develop and enforce universal reporting guidelines for all review types, building on initiatives like PRISMA-ScR [3, 136, 154].
- **Automated Review Tool Adoption** — Further develop and integrate AI-powered tools for all stages of literature review to enhance efficiency and reduce human burden [11, 13, 429].
- **Rigorous Intervention Effectiveness** — Focus on rigorous comparative effectiveness research for interventions identified in scoping reviews, particularly in areas with sparse

evidence [34, 218].

- **Broader Disciplinary Application** — Encourage the application of both systematic and scoping review methodologies across a wider range of scientific disciplines, beyond predominantly health-related fields.

6) Conclusion

This paper synthesizes the current understanding of systematic reviews and scoping reviews, highlighting their distinct yet complementary roles in evidence synthesis. Scoping reviews are instrumental in mapping nascent or complex fields, clarifying concepts, and identifying research gaps, often serving as a precursor to more focused systematic reviews. In specific contexts, systematic reviews appear more frequently, with a median of 17.5 systematic reviews compared to 4 scoping reviews identified in umbrella reviews [260, 440]. A key limitation is the lack of direct comparative studies on the methodological efficacy of these review types. Future research should prioritize comparative methodological studies and the development of standardized reporting guidelines to enhance the rigor and utility of both systematic and scoping reviews in advancing scientific knowledge and informing practice.

References

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Figure 1. Publication-year distribution of included originals

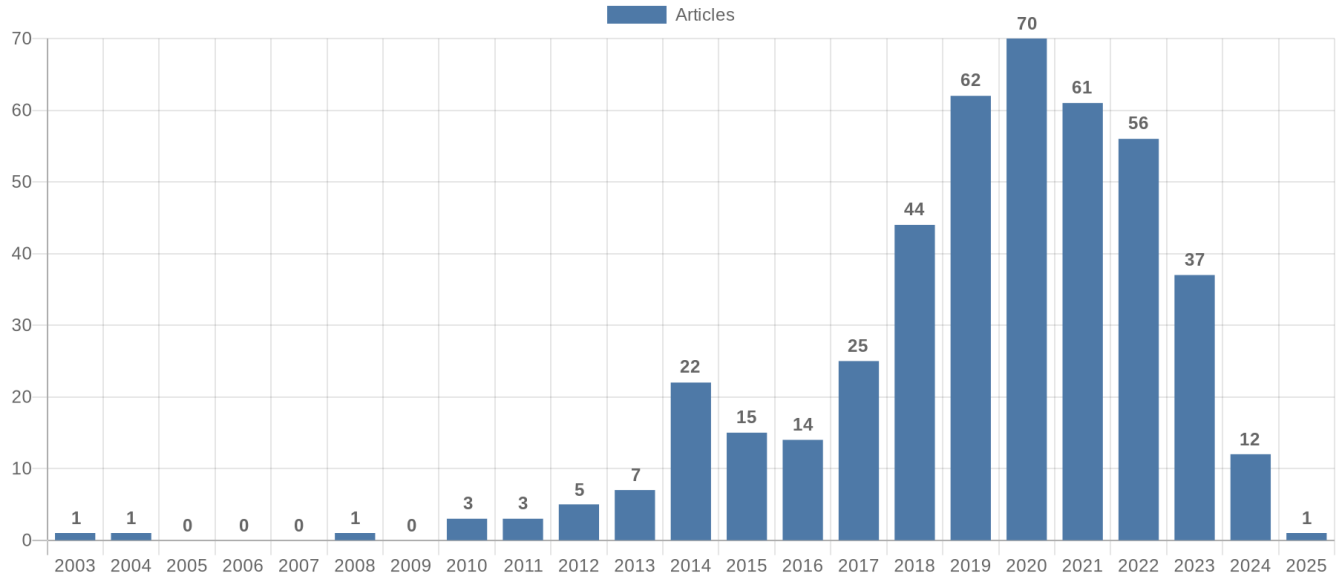

Figure 2. Study-design distribution of included originals

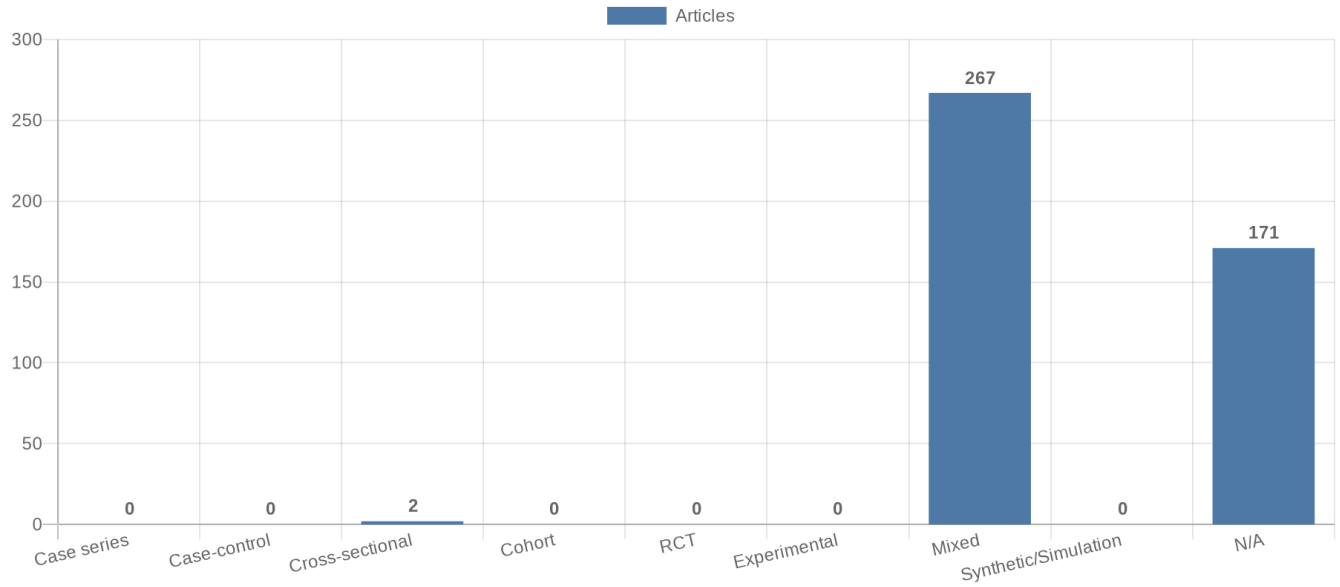

Figure 3. Study-type (directionality) distribution of included originals

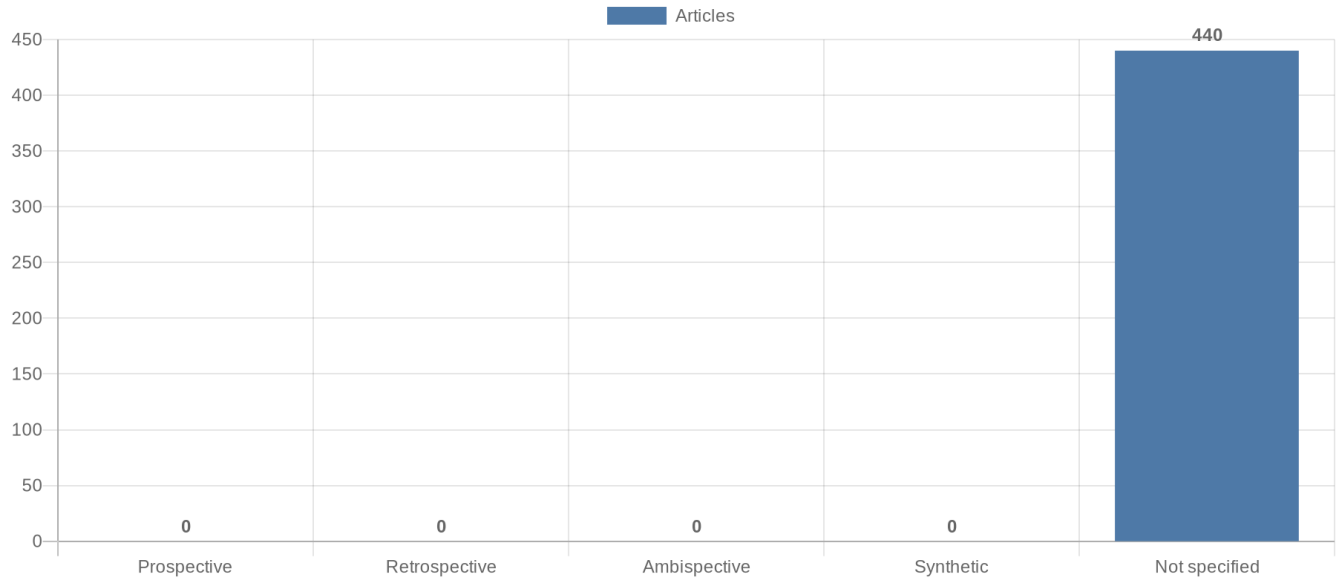

Figure 4. Main extracted research topics

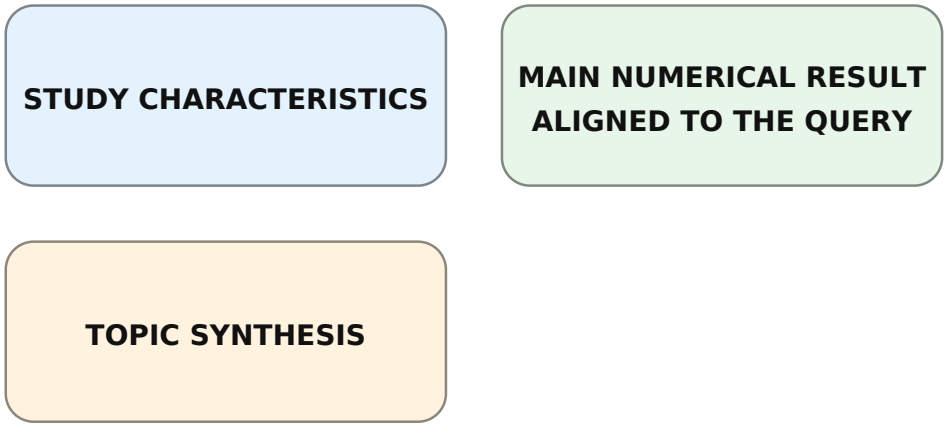

Figure 5. Limitations of current studies (topics)

Figure 6. Future research directions (topics)