REVIEW ARTICLE

Practical Experience Utilizing a Rapid Review Process for Nursing Practice Decision-Making on Pressure Injury Outcome Indicators.

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Abstract

Rapid review is a method to yield evidence in a timely and systematic manner. We used this method to identify internationally comparable outcome indicators for monitoring pressure injury. This paper aims to illustrate our experience with the rapid review methodology for decision-making in nursing practice. A rapid review (Review 1) on pressure injury outcome indicators was performed using four databases (PUBMED, CINAHLPlus, EMBASE, and MEDLINE) for publications from 2010 to 2019. Article screening was conducted independently by two reviewers using the PRISMA guideline. The views of the collaborative review team, local experts, and knowledge users were taken into account throughout the study. The evidence obtained from the rapid review was found to be insufficient, therefore, additional searches using reference lists (Review 2) and grey literature (Review 3) were required. Screening, data extraction, were conducted independently and verified. A narrative synthesis was performed based on the data extracted. This research investigates how to obtain nursing evidence efficiently using the rapid review method while adapting it to a specific context through supplementary searches. Although the rapid review is a cost-effective way to synthesize nursing evidence, it is crucial to collaborate closely with local experts and knowledge users to ensure its relevance. Effective decision-making relies on collaboration between the review team, stakeholders, and reviewers' ability to assimilate the rapid review process and adapt it appropriately to the local context, in order to obtain relevant evidence. This process highlighted the importance of a dynamic, contextualized, and collaborative approach in using research to inform decision-making.

Keywords: *decision-making, evidence-based practice, pressure injury, nursing practice, rapid review*

Introduction

Health systems (HSs) comprise a range of interconnected elements, including organizations, individuals, and activities whose roles are to promote, restore or maintain health. HSs need to make informed decisions based on the best available evidence. Evidence synthesis is the review of what is known from existing research using systematic and explicit methodologies in order to clarify the evidence foundation [1].

The best evidence for nursing practice can be retrieved using Systematic Reviews (SRs) and/or Meta-Analyses. SRs are highly regarded evidence synthesis methods, but the process is lengthy and limit its utility to satisfy the time-sensitive needs of stakeholders [2]. For example, decision-makers have an urgent need for evidence due to the emergence of the coronavirus, which could not be met through conventional SRs techniques [3]. However, with the constraints present it was decided that Rapid Reviews (RRs) would be the most practical option for this project.

Rapid reviews (RRs) refer to a method of synthesising knowledge that expedites the process of systematic reviews (SRs) by simplifying or excluding certain steps, resulting in the production of evidence for stakeholders in a more resource-effective manner [4] and has been widely accepted and used by physicians, managers of the health system, decision-makers, patients, health policy agencies, and the general public [5-9]. In addition, RRs can provide crucial data to help decision-making processes by synthesising and summarizing relevant evidence in a timely manner [10]. In the field of nursing, RRs have been used in various areas such as policy development or evaluation, nursing practice, nursing education, and evaluation of nurse training programs. This increased awareness of the RR approaches will facilitate their use in nursing practice [11].

There is evidence showing that RRs may enhance the accessibility and clarity of research evidence for decision-makers in the establishment of clinical guidelines, as well as be useful for guiding future research and for policy decision-making [5,12] especially in urgent and critical public health situations [3].

Embedding Rapid Reviews in Health Systems Decision-Making (ERA) is a process that involves integrating RRs of existing evidence into the decision-making processes in HSs [13].

The Alliance for Health Policy and Systems Research (AHPSR) is a global partnership dedicated to strengthening Health Policy and Systems Research (HPSR) [10]. AHPSR provided financial support for the Malaysian Alliance for Embedding Rapid reviews (MAera) in HSs decision-making from 2018 to 2020. MAera is a specific initiative in Malaysia that aims to promote the use of RRs in Malaysia HSs. MAera provided a platform for networking and collaboration among researchers, policy-makers, and practitioners. Over the course of two years, the MAera platform has successfully conducted ten Rapid Evidence Syntheses (RES), with two of these being requested by the Nursing Division [14].

The Ministry of Health Malaysia prioritized 13 patient safety goals in 2013, which are monitored by the Patient Safety Council whose roles include establishing targets for these safety goals. Corresponding with this safety goal, the Nursing Division implemented a key performance indicator (KPI) for the incidence of Healthcare Associated Pressure Ulcers. This KPI triggers necessary corrective and preventive measures, which are executed after conducting a root cause analysis. As part of a quality improvement initiative, the Nursing Division intended to assess the current performance indicators available for pressure injury (PI) and, if necessary, revise them. In support of this move, a RR was conducted to

identify international indicators for PI prevention. One of the challenges was the utilisation of different outcome indicators for monitoring PI, making comparisons and benchmarking difficult. As a result, the stakeholders commissioned our team to initiate an RR to identify the indicators used worldwide for monitoring PI and to compare our indicators with global standards.

Our objective for this paper is not to provide a detail of the review findings, but to appraise the methodology used. This evaluation includes addressing issues that arose, adaptations made during the research process, and decision-making with respect to the nursing context and purpose.

Problem Statement

Outcome indicators for pressure injury (PI) are monitored as a quality indicator in nursing. However, the use of different outcome indicators complicates comparisons and benchmarking against international standards.The purpose of this research is to identify internationally used indicators applicable to the local context. In view of constraints, the RR methodology was selected to provide the required evidence for stakeholders.

Methods

This study was commissioned by the Nursing Division of the Ministry of Health, Malaysia in 2019, with the intention to use the evidence in the process of re-evaluating the current outcome indicators for PI. Therefore, the emphasis of this study is on the methodology of the RR used to gather evidence to inform the Nursing Division to determine internationally used indicators that might be used for comparison. Literature searches were performed from 2010 to 2019 using databases sourced from PUBMED, CINAHL Plus, EMBASE, and MEDLINE.

A total of three reviews were carried out i.e., Review 1 (database search using rapid review), Review 2 (Reference list search) and Review 3 (Grey literature search), to yield the necessary data.

Results

Review 1 (Database search using rapid review)

Study design

Due to deadlines for making policy decisions, this study had to be completed within four months. As such, a complete systematic review (SR) was not a practical option. Two reviewers participated in this process and their roles and activities are as shown in Table 1. Several stages, including the search and selection phases, the quality evaluation, and the data synthesis, were streamlined.

Stakeholders, including the Nursing Division and wound care nurses were part of the initial expert group that was formed to provide input based on their requirements, priorities, experience and preferences. An overview of the RR approach is shown in Table 2.

Stage 1: Establishing the purpose of the rapid review and defining the research question

At the start of a RR process, identifying a clear question and context is crucial. The topics and the goals of the review were established from the outset during a consultative meeting with the representatives from the Nursing Department. The team then decided on the most appropriate research question which was: “What is/are the outcome indicators for monitoring pressure injury prevention?” Using the research question enabled the review process to be better defined and to be streamlined. This streamlining of the review was consistent with the principle of RR since it also retained the elements of systematic searching, data abstraction, and quality appraisal.

Stage 2: Conducting a search of the literature

A meeting was conducted for two days on the RR process for the stakeholders. The first step was to conduct a preliminary search of PubMed (MEDLINE) using keywords, subject headings, and alternative terminology related to the topic and articles. Second, a thorough search of four databases was undertaken. These databases

included PUBMED, CINAHL Plus, EMBASE, and MEDLINE. We needed to include data gathered from a variety of sources, such as secondary studies (systematic reviews and meta-analysis), and documents describing outcome indicators for PI to adult inpatients. All searches were restricted to English-language literary works and study types categorized as "reviews.". The timeline of the listed studies required were publications within the preceding ten years (i.e., from 2010 to 2019).

The search phrases were combined using the common Boolean Operators AND, OR, and NOT. The PCC framework was used as it was related to conceptual context rather than intervention and is frequently used in evidence-based nursing and medicine. “P” in the PCC framework stands for the patient, population, or problem. In this study, "P" referred to pressure injury, while "C" referred to concepts like measure, indicator, tool, quality or monitor. "C" stands for contexts, such as a hospital, ward, or inpatient setting [15] as in Table 3 (PCC search terms used). The PICO framework was not used as there were no interventions in our study.

Stage 3: Screening the Literature

In this study, we piloted the eligibility criteria on 10% of the studies including level 1 (title and abstract) and level 2 (full text) screening. The pilot was done until 90% inter-rater agreement was achieved. Two reviewers checked the citations (title and abstract) for eligibility. 10% of the screened documents were verified by a different reviewer. Any differences of opinion among reviewers were discussed to come to a consensus.

Screening of the full texts was done by two reviewers independently. Any disagreement among the reviewers was resolved by consensus. We utilised Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guideline, which is a reporting standard for SRs searches that can be adapted for RRs. The database contained 1,170 articles in all, of which a total of 14 papers were selected and reviewed. The process of searching and screening is as shown in Figure 1.

In a SR technique, titles would have been screened before abstracts. In our situation, we decided to combine the two procedures into one to save time as in Table 2. Additionally, it is advised that two or more reviewers separately conduct screening in SRs, and the results are then compared [16] but in RRs, this can be streamlined by using just one reviewer [3, 17].

Stage 4: Appraising the quality of included studies and conducting data abstraction.

The included studies were assessed for quality using the AMSTAR-2 tool. The AMSTAR-2 checklist consists of 16 items in total compared with 11 in the original. A specific score value was given for each item (e.g., “Yes = 1 point, “Partial Yes” = 0.5 point, or “No” = 0 point). For the purpose of analysis, we considered "partial yes" as a full yes if there was a consensus that it did not significantly limit the study or as a full, no if there were major concerns that could affect the understanding of the study. These scores were categorized into critically low, low, moderate, or high confidence levels [18]. All included articles were evaluated and extracted the data for synthesis using a data extraction table independently by two reviewers (K, GY), and any discrepancies were resolved through consensus. The quality of the data was considered in the data synthesis but papers were not excluded based on the quality assessment. Of the 14 articles included, only 28% (n=4) were high-quality articles and fulfilled all AMSTAR 2 criteria (16 items). Half of the articles (50%, n=7) were classified as moderate and 21% (n = 3) as low quality. The presence of lower quality studies could lead to bias and difficulties in reliability and deriving conclusions.

Stage 5: Conducting data synthesis

With the inclusion of a team member to work on data merging and synthesis across the areas, each team member who abstracted data also

contributed to its synthesis. A team member conducted data synthesis independently. This process was iterative with advice from experts. Narratives centered on the study issue were created utilizing the data abstraction tables. A "narrative synthesis" is the synthesis of findings from various studies that primarily rely on textual means to summarize and clarify the results, the key feature is the use of words to adopt a narrative approach in presenting and conveying the story of the findings derived from the studies included [19]. As the method of synthesising data was iterative and involved discussions among reviewers with input from experts on the procedure and results, this process took some time as the experts were located in other institutions and suitable timing had to be arranged for discussions.

Stage 6: Report production and dissemination

The findings of the review were presented to the stakeholders but based on their feedback these findings were insufficient for their utilisation. Further information was required regarding issues such as definitions, setting, duration of onset, staging, and monitoring frequency. As such the data obtained was insufficient to be used for adoption/adaptation in the local context.

Review 2 (Reference list search)

As a result, a second review was carried out using reference list search [20]. The same form from Review 1 was used, hence, no pilot was conducted for Review 2. We used the research question: “How do countries implement their outcome indicators for pressure injury monitoring and prevention?”. We hand-searched the reference lists of the 14 included studies from the previous review for relevant articles and national guidelines for PI monitoring to find additional materials. The keywords searched were “Outcome Indicators OR Criteria OR Incidence OR Prevalence” in the title or abstract. 10% (n=60) of documents were verified by another reviewer. 192 articles were subsequently excluded because they did not meet the eligibility and inclusion criteria. The three articles which were identified as potentially relevant were also excluded as there was no information on how the rates of pressure injury or how these are used as outcome indicators as in figure 2.

Review 3 (Grey literature search)

Nevertheless, the reference list search did not yield adequate information. Consequently, a grey literature search [21] was carried out, using the Google search engine. We also looked for documents from countries with HSs that performed better than Malaysia. The nations covered in the review were identified using the 2000 World Health Report [22]. "Country" AND "Prevalence OR Incidence" AND "Pressure ulcer OR Pressure injury" were the search terms utilized. For each search term, the first two pages of results were retrieved as shown in figure 3.

In both the reference list and grey literature search, documents that fulfilled the eligibility criteria data were extracted by one reviewer and verified by a second reviewer. Disagreements were resolved through discussion and consensus. No quality appraisal was conducted as the documents reporting of PI outcomes (e.g., prevalence rates) were heterogeneous.

Discussion

Based on this experience of conducting a RR on a health-related subject, it was crucial to adapt the PCC framework’s application to take into account the diversity of research, the usage of various databases, and supplemental search techniques in order to find relevant studies which would fulfill the needs of stakeholders. Important areas to consider include the preparation and planning, collaborative review team, and involvement of knowledge users.

Preparation and planning

Planning the searches is crucial for the entire preparation of RRs as results of systematic literature searches form the basis of a review. The

search processes for SRs and RRs are similar, so RRs teams should be familiar with the essential steps and procedures for systematic searching. In the process of developing a protocol, it is vital to create a well-defined plan for conducting a literature search. The involvement of an information specialist is ideal, as their expertise can significantly contribute to refining the research question, selecting appropriate search methods and resources, designing effective search strategies, and documenting the search methods used [2, 3, 23].

Given the need for speed in RRs, there are two approaches to expedite the search process. First, time can be saved by reducing the time spent on searches through the use of automation tools, reusing previous search strategies, or streamlining planning and quality assurance steps. Second, the size of the search results can be reduced by narrowing down the information sources, improving the accuracy of search strategies, and applying study design filters [3, 24]. The process of study selection, which involves screening the search results, typically requires more resources than the search itself, especially for issues that are complex [25]. Therefore, the second approach mentioned above may be more effective for the entire RRs process. Investing time in improving search completeness and precision can save time in the long run by reducing the workload associated with screening and selection. Preliminary or scoping searches play a crucial role in this approach as they help identify potentially relevant material and guide the selection of appropriate search strategies [3].

Collaborative review team

The collaborative review team needs to be carefully chosen to ensure that the studies are selected, evaluated, and synthesised accurately. Additionally, input from relevant technical specialists should be sought and the collaborative development of the protocol with relevant stakeholders, would prove useful in improving the methodology and reviewing the findings[3]. In our study, we included wound care specialists, hospital-based nurses, policy makers and Medical Officers from the Patient Safety Unit to assist with our project.

We discovered that it was crucial to recognise the competence and judgment of the reviewer. In our scenario, researchers were given their task according to their experience, e.g. experienced researchers handle complex literature appraisal while junior researchers conducted literature search. In addition, regular meetings and discussion were held to share issues arising which would indirectly lead to a supportive and collaborative environment. This became crucial during the review process as we evaluated the quality of the papers and thought about how relevant high-quality research was to the particular project that made up the larger framework of our work. Furthermore, we needed to take into account the limitations of the selected studies, which if not given attention to, would lead to erroneous findings. Reviewers should account for time for quality assurance procedures (such as search strategy peer review) and the handling of search results such as deduplication, and full-text retrieval while planning the search itself [24]. Furthermore, additional sources outside of databases such as personal connections, reference searches, and online scholarly search engines may be required. Finally, individuals who do RRs must be upfront about their methodology choices, included studies, and the limits of their findings [26].

It is important for people employing RRs findings in nursing (such as academics, leaders, and decision-makers) to take their purpose, advantages, and limits into account. Users should carefully review the findings taking into consideration their own context so as to ensure better informed decision-making. This involves being conscious of the likelihood of geographic and cultural bias so as to ensure contextual relevance [3].

Knowledge Users

Recent papers have highlighted the importance of the involvement of knowledge users in designing the RRs [3, 27, 28]. Knowledge users (KUs) refer to a person who is likely to use the knowledge created via research to make informed decisions regarding health policies, programmes, or practices [3].

The involvement of KUs at every stage of the process has been crucial for the successful execution of all the aforementioned processes. A recent paper [3] emphasised the recognition of KUs' roles and stressed the need for their involvement throughout various stages of the RRs process. This involvement should begin during the pre-planning phase and continue until the completion of the RRs process. During the pre-planning phase, it was essential to address important issues such as collaborative planning and identification of priority areas.

In our case, efforts were made to establish a relationship between researchers and various KUs to facilitate effective collaboration. In the initiation and planning stage of the RRs, KUs played a vital role in several aspects. They provided valuable insights in defining the research question, prioritizing and specifying the desired outcomes, and developing the protocol, which included determining key terms and eligibility criteria. Additionally, their input was sought during the literature search process. Throughout the conduct of the RRs, the input of KUs was necessary. They were involved in selecting appropriate studies and interpreting results and findings that were most relevant to them. At the conclusion of the RRs, the expertise of KUs was again required. They actively participated in the development of key messages and engaged in various knowledge translation activities, such as creating informative briefs and technical reports [3].

Currently, the evidence on the involvement of KUs in RRs is still limited as RRs are still developing. This may set to change as a recent paper on priority-setting partnership for RRs methodology reveal that identifying these KUs is of top priority. Another priority that was brought to attention was to identify the underserved stakeholder groups. With this in mind, KUs involvement will play greater importance as more evidence is available in the near future [26].

Learning from others

Other researchers have studied on the process on RR in nursing. O'Leary DF et al [29] illustrated the process of RR using an example for nursing. Our paper underwent the same process of RR to elicit evidence for outcome indicators for PI. However, in our study the process of RR was insufficient to generate the required data for stakeholders even after searching through four databases. As such we had to proceed further into Review 2 which looked at reference list search from the initial 14 papers reviewed in Review 1. After further feedback from the stakeholders this was still insufficient, hence we had to go through the third review using grey literature. Hence, our study illustrates the consecutive use of three different review techniques in a real-world situation. Reference list search has the advantage of easily retrieving papers provided a good start is identified to avoid bias [20]. On the other hand, search for grey literature is time consuming due to requirement of multiple search and engine and site but may produce a balance view as it may minimise bias [21].

Secondly, our study had slightly different methodologies due to differing needs. We highlighted the use of PCC framework instead of PICO as our work was related to conceptual context rather than intervention which would require the latter framework. Furthermore, some RRs do not perform any quality appraisal but in our case, we used AMSTAR-2 tool to assist in the identification of high-quality systematic reviews. Thirdly, to our knowledge, there is no publication on Rapid Evidence Synthesis for nursing in Malaysia. This paper highlights a practical experience in the local nursing scenario which

may prove useful to nursing practitioners who may want to embark into evidence synthesis.

Hence, this experience illustrates that when RR was still short in results, other methods needed to be employed to retrieve the required information. It is hoped that our experience would be a guide to practicing nurses on further options should they encounter similar situations in the future as the RR process may not be the final source in all studies.

Strengths & Limitations

There were several limitations to our review process. We were restricted to articles in English language only and we had to use grey literature as the information was inadequate after the initial search from databases. Additionally, we had to use the WHO World Health System Performance Ranking from the year 2000 as that was the best available benchmark which was available to us. These could introduce bias in the results obtained but was inevitable due to time and resource constraints. However, our RRs also had its strengths. Even though RRs are streamlined due to resource limitations we manage to source data from four databases, used two reviewers and performed quality appraisal to check the quality of the articles. In addition, we had the expertise of clinical experts in the field to provide input at various stages of the RRs process to ensure that the data extracted was fit for use.

Challenges

There were many challenges throughout the research process. In terms of researchers and co-researchers there was vast difference in experience in research methodologies as many were from the ministry whose core business were clinical nursing and not research. In addition, the coworkers were working in various locations and have different work profiles and schedules. During the process two team members were transferred and replacement had to be done. Similar issues were present for the experts and stakeholders which made arrangement for workshops and meetings challenging. However, these meets were needed to ensure the adequacy of competency of team members in addition to ensuring relevancy of retrieved data and direction of the research team. As illustrated above, RR was insufficient to produce the required information. This needed the feedback from stakeholders and local experts and additionally the need to go into a second and third review contributed to the project being prolonged to 10 months instead of four months.

Implication

This paper describes our approach and the challenges we faced, in the hopes that it will help others who face similar challenges. We are not suggesting that this is a definitive approach, but rather see it as an opportunity to provide greater detail about the process in a review. We would suggest that further detailed description and research on supplementary search and review methods would serve as a useful resource to those who wish to include supplementary search in their reviews. In addition, continual interaction with stakeholders throughout the process added to the advantages of this RRs strategy. The group was first consulted periodically during the RRs process to ensure that the final review was relevant to their objectives and goals. This kind of consultation has previously been emphasised as a typical quality of RRs and a benefit of the method over a SRs method [11]. In addition, throughout the brief study, local experts were consulted on a number of occasions. They offered comments on the data abstraction and synthesis processes as well as input on the search criteria and themes that were taken into consideration for the review. Their suggestions were crucial, and assisted in determining the relevancy and quality of our RR.

Conclusion

We were able to perform a methodologically rigorous RRs of a Patient Safety Goal with the Nursing Division. In general, our experience has revealed three crucial factors that are important to take into account while conducting a RRs in the

health sector: the need to modify suggestions and directives so that they are as pertinent to the nursing context as much as possible; the need to acknowledge the importance of reviewer skills and judgment in quality assessment; and the need to pay attention to collaborative review team processes. Our RRs experience reveals that this methodology holds promise for timely informed decision-making in nursing provided relevant adaptation and modification are applied to ensure the relevancy of evidence-based data.

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Ethical Approval

The study was conducted according to the guidelines of the Declaration of Helsinki, was registered under the National Medical Research Register (NMRR-19-1279-47643) and was reviewed by NIH Research Review Panel (JPP-NIH Panel), exempted from Medical Research & Ethics Committee (MREC) review. Data Availability Statement: The data presented in this study are openly available in Open Science Framework at https://osf.io/e37v8/ (accessed on 29 June 2023).

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Conflict of interest

All authors declare no conflicts of interest.

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Table 1. Activities and roles

Research question	Activity	Team member
What is/ are the outcome indicators for monitoring pressure injury prevention?	Literature search	SB, ZH
	Pilot	SB, ZH
	Title & Abstract screening	SB, ZH
	Verify	AZ
	Full paper screening	AM & S
	Data abstraction	K
	Review of data abstraction	GY
	Data synthesis	K

Table 2. Overview of the rapid review methodology

Stages	Activities
1. Establishing the purpose of the rapid review and defining the research question	The Nursing Division identified topic areas and together with wound care nurses established the purpose of the rapid review research team and then defined research questions related to the topic areas.
2. Conducting a search of the literature	Two team members, working together, conducted the literature search. Four electronic databases (PUBMED, CINAHL Plus, EMBASE, and MEDLINE) were sourced. The reference list of the relevant papers was hand-searched.
3. Screening the literature	We piloted the eligibility criteria form on 10% of studies included for level 1 and level 2 screening. There were two teams with two reviewers each. Two team members working together conducted the screening of the title and abstract. Papers related to the research questions were given to a team member for full-text screening.
4. Appraising the quality of included studies and conducting data abstraction	Two team members conducted data abstraction and two reviewers performed quality appraisals of included studies independently and any disagreements were resolved by consensus.
5. Conducting data synthesis	A team member conducted data synthesis independently. A narrative synthesis was carried out since the reporting of pressure injury outcomes was heterogeneous.
6. Report production and dissemination	The findings of the review were presented to the Nursing Division on 19th September 2019 and their feedback was noted.

Table 3. PCC search terms used in the review of the literature

Question	PCC	Search Terms
What is/ are the outcome indicators for monitoring pressure injury prevention?	P	“Pressure Ulcer*" OR "Pressure Injury" OR "Pressure Injuries" OR "Bedsore*" OR "Pressure Sore*"
		AND
	C	“Measure*" OR "Indicator*" OR "Tool*" OR “quality*“ OR “Monitor*"
		AND
	C	"Inpatient*" OR "Hospital*" OR "Ward*"
		AND
		"Review*"

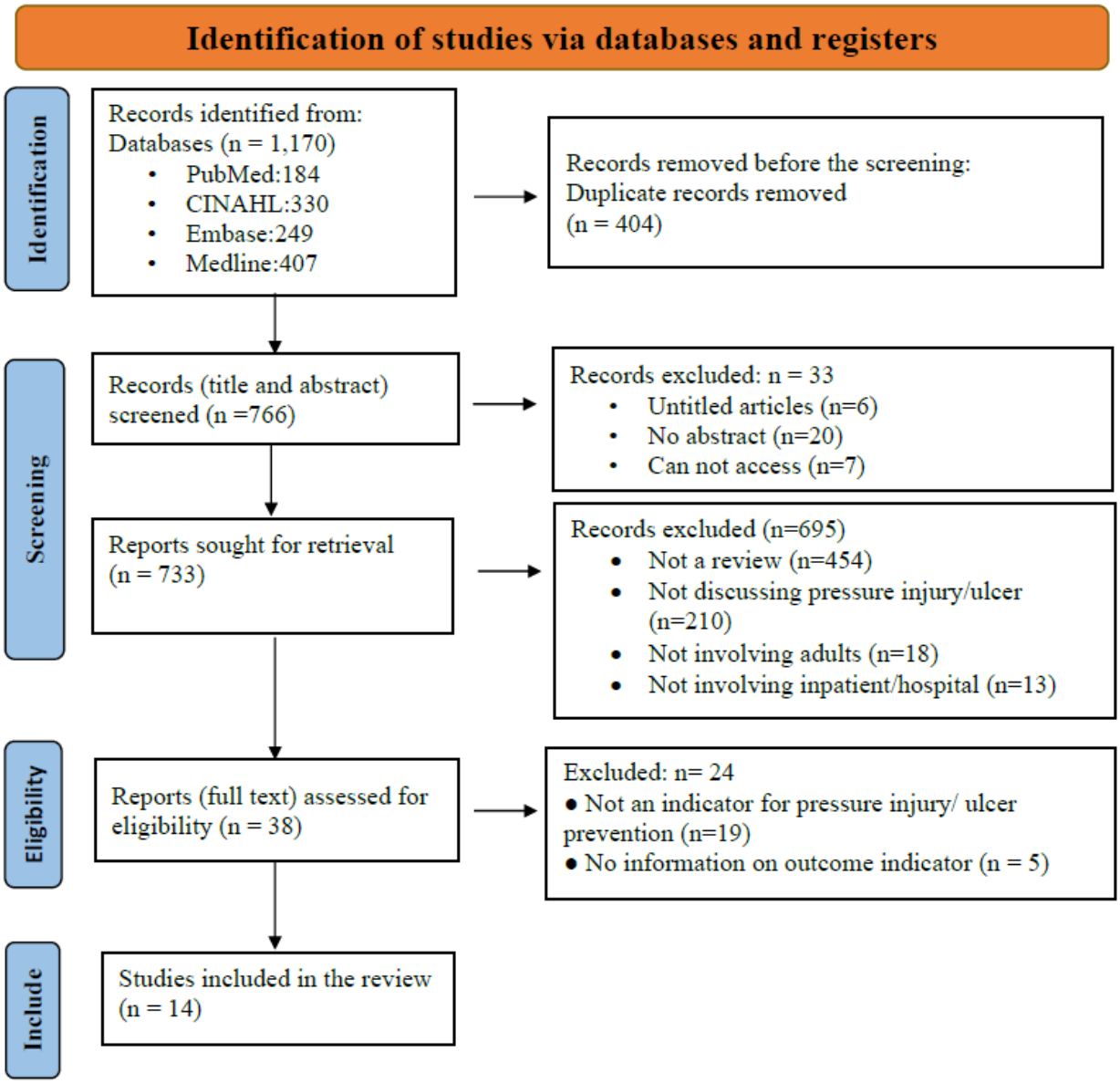

Figure 1. Review 1 (Database search using Rapid Review) PRISMA flow diagram of search

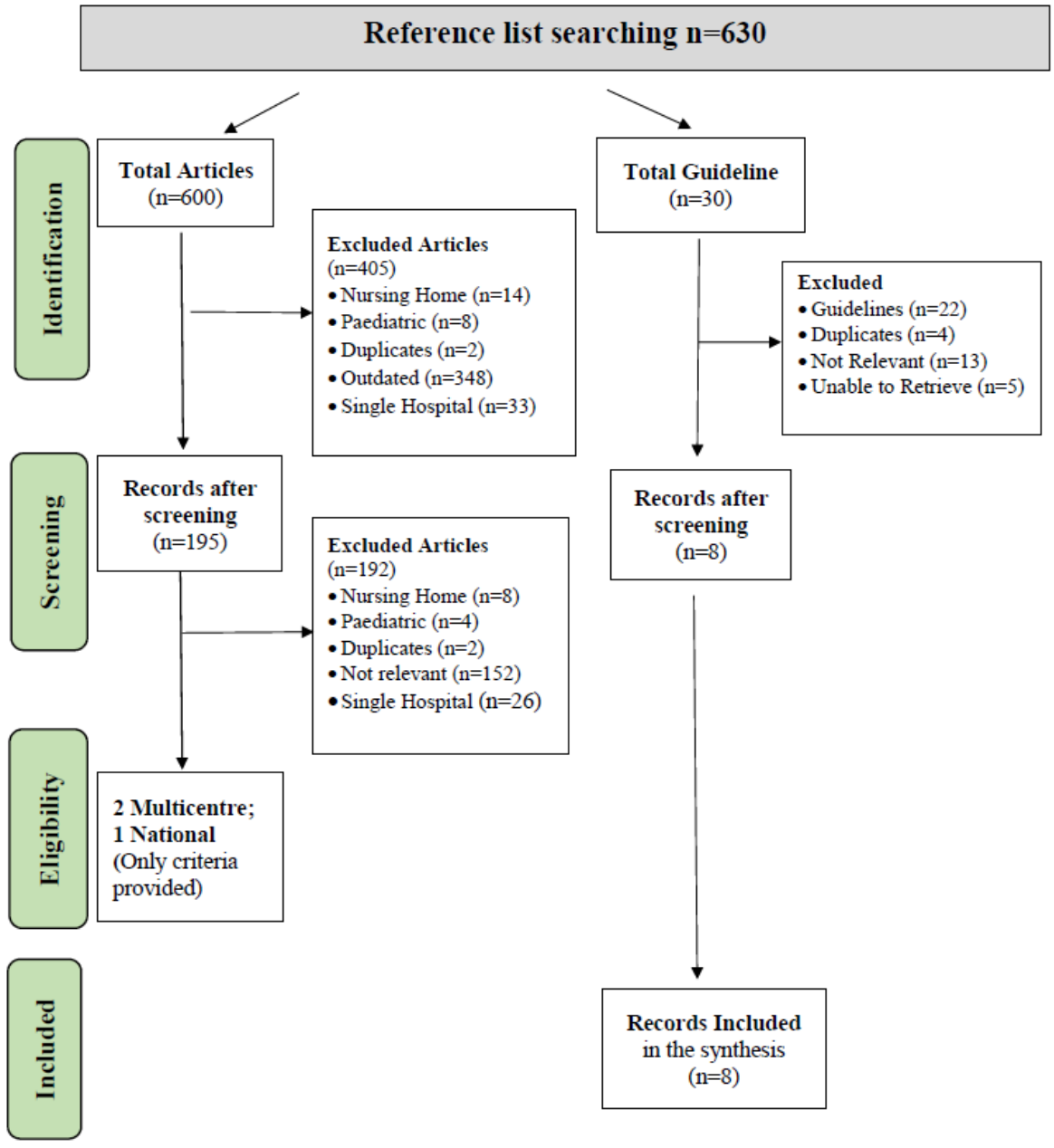

Figure 2. Review 2 (Reference List search) PRISMA flow diagram of supplementary search

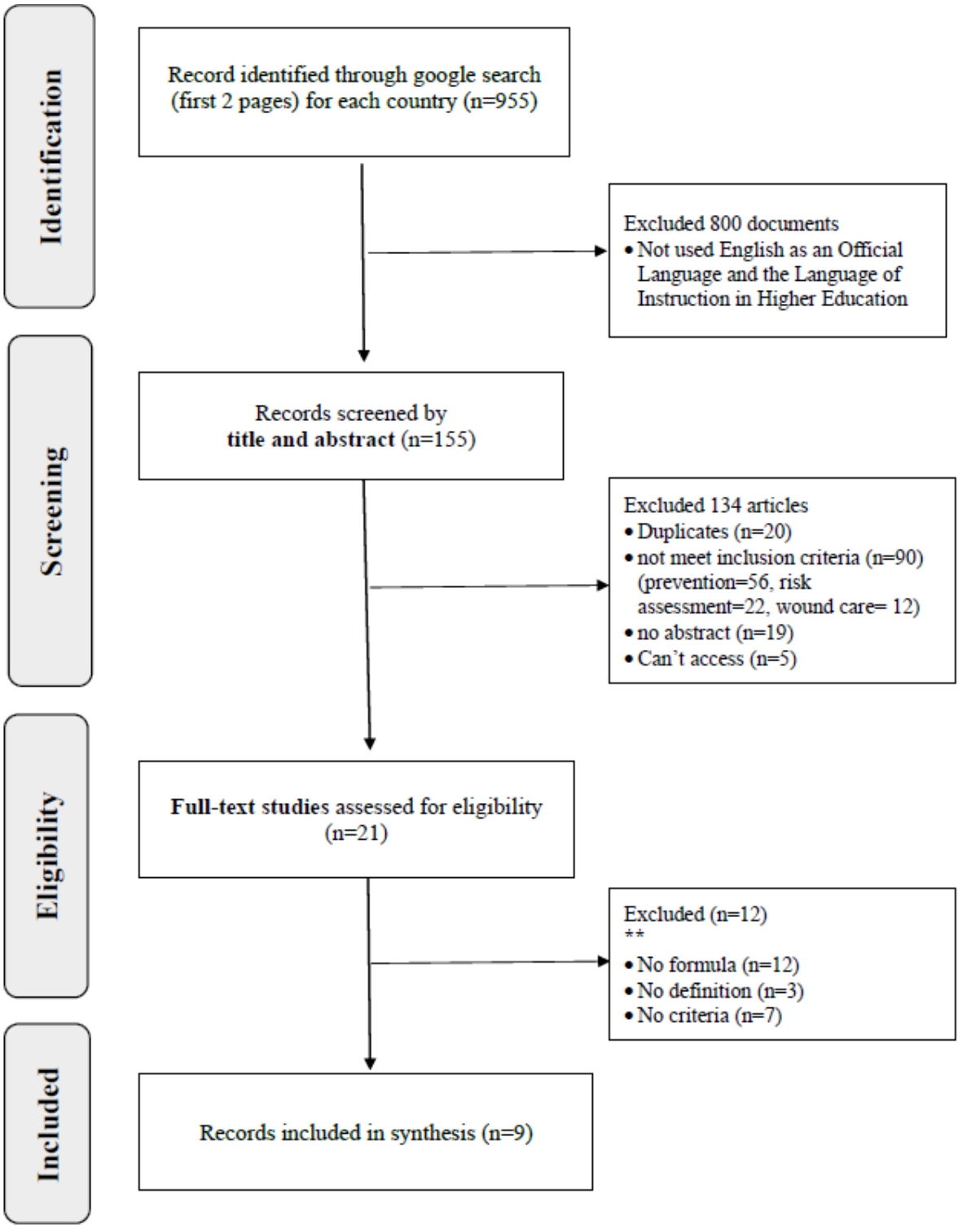

Figure 3. Review 3 (Grey Literature search) PRISMA flow diagram (country specific search)