

Does blood transfusion education identify the emotional-components of transfusion care? A scoping review protocol

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Key Words: *Blood transfusion; holistic care; patient experience; patient perspective, transfusion education; quality improvement.*

Abstract

Aim: The aim of this scoping review protocol is to explore the current blood transfusion administration training and education system within the United Kingdom (UK) for healthcare professionals and if it identifies or includes the emotional components of transfusion care such as empathy and compassion. **Background:** Blood transfusions are commonly performed procedures within healthcare and carry significant safety related responsibilities for those administering them, with potentially significant emotional and psychological consequences for recipients. The emotional and relational aspects of blood transfusion education for healthcare professionals in the UK remains underexplored whilst technical competence is widely discussed in literature. There can be emotional responses to receiving a blood transfusion and this protocol will review the inclusion of a patient's emotional experience of receiving a blood transfusion within contemporary training. **Design:** This scoping review protocol is guided by the JBI methodology for scoping reviews using the Population, Concept and Context (PCC) framework to define inclusion and exclusion criteria. This protocol has been uploaded to the Open-Source framework. A protocol is the first stage of a scoping review preceding a research study on the project. **Method & analysis:** A comprehensive search of e-databases will be conducted including the following e-databases: CINAHL Complete, Embase, Scopus, MEDLINE (via PubMed), Web of Science, and ERIC. The searches will include educational materials, reports, and research articles available in English language. The inclusion criteria are broad to include any material referencing blood transfusion training that does not fit into straight forward categorisation. This scoping review protocol will use the PCC template to guide identification and selection of relevant search terms, ensuring a systematic and structured search by three independent reviewers. An initial search to test the viability of the hypothesis found n=307, reduced to n=11

and after application of the inclusion and exclusion criteria reduced to n=3, reinforces the need for a scoping review.

Introduction

There are approximately 1.8 million blood and blood components transfused within England each year (NHSBT, 2025) the standards of which are governed by the Blood Safety and Quality Regulations (Statutory Instruments, 2005) and administration and guidance recommendations from the British Society for Haematology (2017) and the National Blood Transfusion Committee (2016). The term blood transfusion is defined as the therapeutic use of whole blood or its components (Booth et al., 2021, p.238), with the goal to restore adequate tissue perfusion for recipients (Ackfeld et al., 2022). Blood transfusion carries significant safety related responsibilities for those administering and receiving them, with complications such as reactions, and with potential for non-adherence to protocols risking fatalities (Nayeri et al., 2022).

The concept of competence and safety around blood transfusion is of notable concern (Emmanuel et al., 2024). Studies show that practices of care during blood transfusions can vary in standards and maintaining competence is linked to regular exposure (Brown & Brown, 2023). Blood transfusion administrations are carried out by nurses, midwives and health care professionals in the UK, however wider professionals may also perform this role (UK & Ireland Blood Transfusion Network, 2022). Despite this, it is noted that the care of patients during transfusion should be managed by a licensed professional such as a nurse holding current registration by the Nursing and Midwifery Council or by a doctor registered by the General Medical Council at some National Health Service (NHS) Trust sites (Rotherham & Doncaster NHS Trust, 2025).

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There are continuous initiatives to improve quality and patient safety during blood transfusions through research and policy development (Serious Hazards of Transfusion, 2025; Vickers et al., 2025) with emphasis noted around the clinical skill and knowledge required to administer the procedure safely. With evidence suggesting variance in practices, and range of professional roles administering blood transfusions, it is understandable that the literature consistently emphasises safety, and research appears to have concentrated on the procedural elements to ensure safety.

There can be emotional responses to receiving a blood transfusion (Volkmer et al., 2022) however, most evidence relates to transfusion dependent patients, and it is recognised that emotional responses are not a well-understood aspect of blood transfusion (Gnanaraj et al., 2021). Abdul-Aziz et al. (2017) identified that it would be beneficial to have greater emphasis given to discussions that address patients concerns about having blood transfusions and that perceptions may vary between regularly transfused patients and those receiving one off transfusions, which further highlights that patient concerns need to be viewed holistically.

Garraud et al. (2018), found that patients' anxiety around receiving a blood transfusion could be considered as a complication of the procedure, where patients receive information that may over emphasise the risks they could suffer. Interestingly the term 'person-focused' used within effective blood management medical guidance refers to information giving in respect to treatment options, ethics, patient choice and consent. There is no acknowledgement of the emotional response despite physician patient relationships being fundamental to developing trust in transfusion care (Isbister et al., 2022).

Patients should be involved in decision making about their blood transfusion (Booth et al., 2021), and the awareness of the value of consent in the process is reported in literature (Zeller et al., 2023). The importance of listening to patients in relation to blood transfusion is essential, hence the Serious Hazards Of Transfusion (SHOT) "My Transfusion" patient app was developed to empower patients questioning ability throughout this process (Toh & Buggins, 2025). Whilst these initiatives recognise that improving safety standards may lie in patient education (Brown & Brown, 2023), there remains no reference to their emotional state.

Patient satisfaction with the information they are given about blood transfusion is the desired outcome from the quality guidance (British Society for Haematology, 2017; National Blood Transfusion Committee, 2016). However, Braester et al. (2022) report 60% of patients preferred a passive role in transfusion decision making. Commensurate to the recognition of safety concerns is the acknowledgement that people donating and receiving blood transfusions may face significant emotional and psychological concerns (Broccolo et al., 2017; Hoogerwerf et al., 2015).

Patients' benefit significantly when care encompasses both the clinical and emotional aspects (Bradshaw et al., 2022), and an emphasis on safety around blood transfusion inadequately prepares staff administering blood and blood components to encompass the patient's emotional response. Organisations have increasing awareness of the impact of the clinical environment on patient's perception of their healthcare experience (Majeed & Kim 2023). However, communication and courtesy are identified as key factors in determining their overall perception (Godovykh & Pizam, 2023).

A scoping review protocol precedes a full scoping review and later research study. A protocol was chosen to map the existing literature and identify current educational materials. A preliminary search of MEDLINE, the Cochrane Database of Systematic Reviews and JBI Evidence Synthesis was conducted and no current or under-way systematic reviews or scoping reviews on the topic were identified. The emotional and relational aspects of blood transfusion education for healthcare professionals remains underexplored whilst technical competence is widely discussed in literature. As this study is not measuring the effectiveness of contemporary blood transfusion care in relation to emotional aspects, instead, how this concept is addressed in education is likely to identify gaps. In line with JBI's guidance for scoping reviews, this study aims to explore the potential for a new area of research and map the existing educational content (Campbell et al., 2023).

Review question

Does blood transfusion education identify the emotional components of transfusion care?

Inclusion criteria:

- Participants: Pre and post registration nurses, midwives and healthcare professionals undertaking blood transfusion education or training within the UK and Ireland.

Exclusion criteria

- Studies or materials where the primary focus is on medical consent, which is often conducted by doctors, where the education is focused on bio-medical ethical elements.
- Studies that focus on patients declining blood transfusion for religious reasons unless those materials also include healthcare professionals emotional or communicative responses.
- Public awareness campaigns where the focus is not HCP's education. Sources outside of the UK and Ireland are not included due to cultural and organisational differences.
- Exclusion criteria – materials designed only for non-nursing staff

- Any studies or materials not related to blood transfusion education

Concept

The core concept under review is the inclusion or absence of emotional and relational components in blood transfusion education. That education specific to blood transfusion and blood component administration do not adequately incorporate the recipient's emotional experience. More specifically the review seeks to identify whether empathy and compassion are identified in the teaching of healthcare professionals administering blood transfusion.

Context

Nurses, midwives and healthcare professionals' education settings in the United Kingdom (UK) and Ireland (Universities, NHS training environments, simulation labs, continuing professional development programmes).

Types of sources

The scoping review will consider all available formats and delivery routes of blood transfusion training in pre and post graduate nurse education, NHS, and independent healthcare establishments, including both national and local level training. It will include publicly accessible supporting resources, guidelines, recommendations, and reports relating to blood transfusion administration.

Methods

The proposed scoping review will be conducted in accordance with the JBI methodology for scoping reviews (Peters et al., 2020).

Search strategy (see Figure 1)

A comprehensive search of e-databases will include the below e-databases:

- CINAHL Complete
- Embase
- Scopus
- MEDLINE (via PubMed)
- Web of Science
- ERIC

The scoping review will use the Population, Concept and Context (PCC) template to guide identification and selection of relevant search terms, ensuring a systematic and structure search.

Population- pre and post registration nurses, midwives and healthcare professionals completing transfusion education.

Concept- there is a need to consider the patient's emotional experience of blood transfusion.

Context- educational materials / training resources do not adequately incorporate this.

Study selection inclusion criteria:

- Studies focused on NHS in the UK, and Ireland.
- Studies discussing emotions, experiences.
- Peer-reviewed articles, reports, and grey literature published in English.
- Studies, articles, reports, and grey literature for aged 18.
- Studies related to pre and post registration nurses, midwives and healthcare professionals undertaking blood transfusion education or training within the UK and Ireland.

The scoping review will consider all available formats and delivery routes of blood transfusion training in pre and post graduate nurse education, NHS, and independent healthcare establishments, including both national and local level training. It will include supporting resources, guidelines, recommendations, and reports relating to blood transfusion administration. Search terms will be developed based on PCC, refined through Boolean operators, and controlled vocabulary using MeSH terms where relevant.

The scoping review will consider both experimental and quasi-experimental study designs including randomised controlled trials, non-randomised controlled trials, before and after studies and interrupted time-series studies. In addition, analytical observational studies including prospective and retrospective cohort studies, case-control studies and analytical cross-sectional studies will be considered for inclusion. This review will also consider descriptive observational study designs including case series, individual case reports, and descriptive cross-sectional studies for inclusion.

Qualitative studies will also be considered that focus on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography, qualitative description, action research, and feminist research. Text and opinion papers will also be considered for inclusion in the scoping review.

Government, policy, and professional organisational websites will be searched for, for example, Department of Health, NHS England, NHS improvement, National Audit Office, Care Quality Commission, Nursing and Midwifery Council, Royal College of Nursing, professional and advocacy (e.g. PALS) bodies related to healthcare professionals involved in blood transfusion services.

Think tanks and research institutes most cited by Governments related to the search terms e.g., The King's Fund, Nuffield Trust, Health Foundation, Institute for Public Policy Research, RAND corporation, The Health Foundation, Institute for Fiscal Studies.

ProQuest dissertations and Global thesis and search for unpublished research studies. August 2025: Pilot to test search terms using EBSCOhost CINAHL ULTIMATE, Eric, Scopus, web of science, Medline (via PubMed).

The pilot test search terms included combinations of keywords such as: “Blood and transfusion” and “patient experience” and “United Kingdom or UK or Britain or Scotland or Wales or norther Ireland” between 2013 and 2025.

Advanced test search: Full text, abstract, English text, United Kingdom, and Ireland (research studies and peer reviewed removed from the search to open it up). All publication types and all journal subsets. Limitations will be applied in relation to literature in English or English for academic purposes.

The date range to search the literature referring to blood transfusions will be 2012 to 2025. The rationale for this is following a shift in an emphasis towards compassion since the 290 findings of the Mid Staffordshire Report (2013), and the nursing and midwifery response in Compassion in Practice (DH, 2012). More recently, reports of poor maternal and neonatal care in the Morecambe Bay Investigation (Kirkup, 2015) and East Kent Inquiry (Kirkup, 2025) reported emotional and physical neglect to mothers and neonates.

The scoping review, as has been stated, will include all research studies incorporating any research methodology and case reports or studies. All eligible literature will be uploaded to a web-based Rayyan ©, and duplicates removed. Screening will be as follows: full text available, abstract read and follow best practice recommendations

for scoping reviews (Peters et al., 2020). To reduce the risk of pre-conceived bias there will be a second and third reviewer reviewing every 10 alternate studies and make notes via intext comments for acceptance and final deletion.

Exclusion criteria:

- Articles not addressing the emotional impact of blood transfusion
- Studies, articles reports and grey literature for under 18’s
- Exclusion criteria – materials designed only for non-nursing staff
- Any studies or materials not related to blood transfusion education
- The focus of a scoping review is to map existing evidence, trends and identifying gaps in the research, therefore secondary research commonly found in systematic reviews such as Cochrane Database of Systematic Reviews, JBI Evidence Synthesis and NICE guidelines will be excluded
- Infected blood inquiry

Research and protocol study evidence selection

Following the search, all identified studies will be collated and uploaded into reference management software tool Rayyan © to remove duplicates.

Following a pilot test, title, and abstract screening to reduce identified studies from the literature search prior to full text screening will be undertaken by three inde-

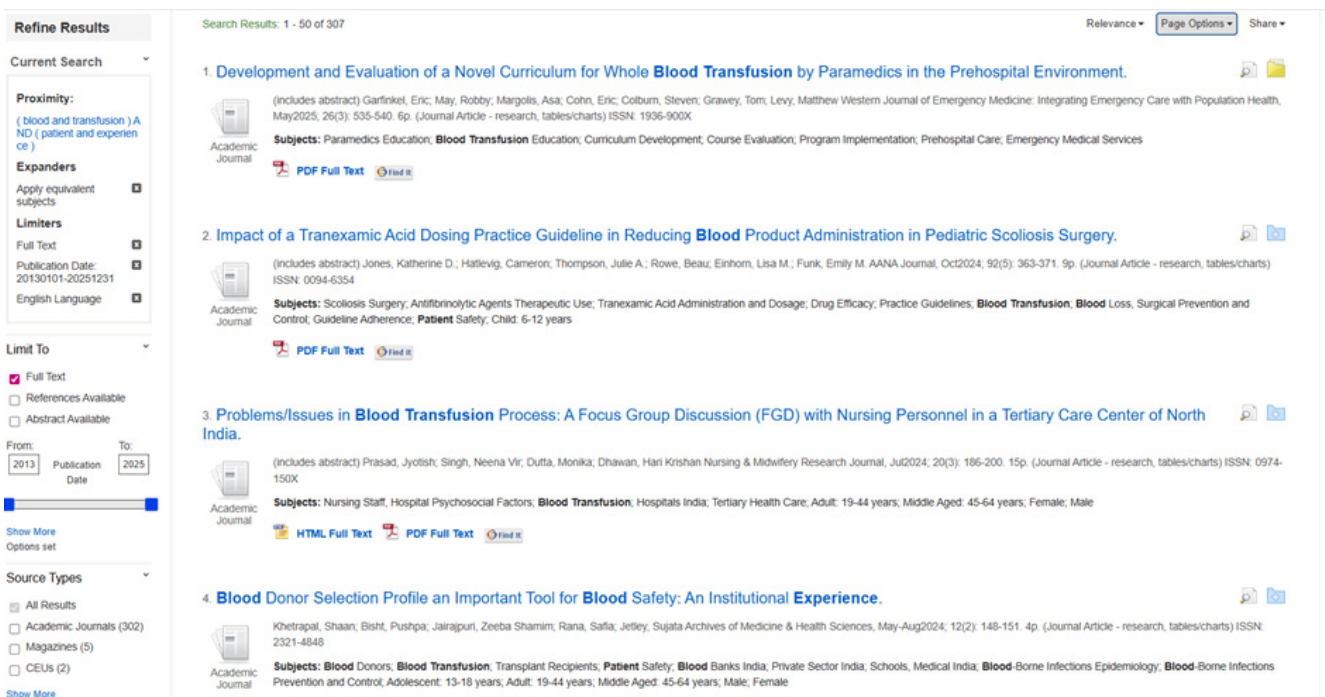


Figure 1. Search Strategy
 Database: CINAHL Ultimate via EBSCOhost (Search conducted on 19/8/25)
 Search Terms: (blood and transfusion) AND (patient and experience)
 English Language from 1/1/13 – current 2025 allowing all sources with full text
 Number retrieved = 307

Table 1. Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist (blank copy)

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Title			
Title	1	Identify the report as a scoping review.	
Abstract			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	
Methods			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	
Results			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	
Discussion			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	
Limitations	20	Discuss the limitations of the scoping review process.	
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	
Funding			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where sources of evidence (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with information sources (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco, A.C., Lillie, E., Zarin, W., O'Brien, K.K., Colquhoun, H., Levac, D., et al. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med*, 169:467-473. doi: 10.7326/M18-0850

pendent reviewers using an abstract screening tool to minimise bias (Polanin et al., 2018). To reduce “coder drift,” described by Lipsey and Wilson (2001) as a risk of unreliable decision making by screeners, weekly meetings will be held to discuss abstract screening which further reduces the risk of bias (Polanin et al., 2018). Any sources that do not meet the inclusion criteria will be excluded and the reasons documented. Once the team identifies studies that might be relevant after title/abstract screening the full text will be retrieved and full citation details imported to Rayyan.

In addition to peer reviewed literature, it is necessary to search for grey literature sources, specifically educational and training materials. Screening of these sources will not be feasible due to the nature of educational resources; they typically do not include abstracts. As the review aims to evaluate transfusion related educational contents specifically, any found will be deemed relevant and included in the full scoping review.

The full text of selected citations will be assessed in detail against the inclusion criteria by three independent reviewers. Reasons for exclusion of sources of evidence at full text that do not meet the inclusion criteria will be recorded and reported in the scoping review. Any disagreements will be resolved through discussion, or the advice of additional reviewers will be sought. The final scoping review will contain a full account of the search results using the Preferred Reporting Items for Systematic Reviews and Meta-analysis extension for scoping review (PRISMA-ScR) flow diagram [see Table 1] (Tricco et al., 2019).

Data extraction

Three independent reviewers will extract data from the studies selected for the final scoping review. The data extraction tool developed by JBI (Pollock et al., 2023) will be used and modified to the specific review topic. The modifications include information relevant to identifying the professional role of the person administering the transfusion in response to acknowledging this may not be isolated to nurses only. The clinical setting of the source study is included as this may inform of any current practice that relates to the research question. Emotional and or humanistic aspects considered within training are included as this is the central focus of this review question.

All reviewers will pilot the draft extraction form; two papers will be selected, and each reviewer will complete test data extraction. Once completed all reviewers will meet to discuss any issues found and ensure parity in completion.

A draft extraction form is provided (see Table 2). The draft data extraction tool will be modified and revised as necessary during the process of extracting data from each evidence source. Any modifications will be detailed

in the final scoping review. As previously outlined, any disagreements that arise between the reviewers will be resolved through discussion, or with an additional reviewers. Critical appraisal of the value of each source selected is not required under a scoping review guide (Pollock et al., 2023) and will therefore not be included in the final scoping review.

Table 2. Data extraction instrument

Authors/year	Population	Concept	Setting	Methodology	Outcomes

Data analysis and presentation

Following Pollock et al. (2023), all papers and sources included in the scoping review will be analysed by at least two of the independent reviewers to increase rigour. The data extraction table (see Table 2) will be completed and reviewed by peer discussion to confirm findings. Presentation of the final scoping review’s findings will be completed using a detailed description that indicate whether emotional aspects of patient experience are included within educational materials or considered with academic papers. The key themes found to be included in the scoping review will be mapped on a thematic table to summarise findings accompanied with a narrative summary that explores the content of blood transfusion education and discourse.

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