

A Meta-Synthesis of Qualitative Studies on the  
Motivation and Psychological Experience of Unrelated  
Donors in Hematopoietic Stem Cell Transplantation

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ADMINISTRATIVE INFORMATION

**Support** - No support.

**Review Stage at time of this submission** - Completed but not published.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202590100

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 September 2025 and was last updated on 25 September 2025.

INTRODUCTION

**Review question / Objective** The purpose of this study is to systematically evaluate the motivations and psychological experiences of unrelated hematopoietic stem cell donors, providing guidance for clinical supportive care practice. Methods: Qualitative studies related to the motivations, inner experiences, feelings, and supportive needs of unrelated hematopoietic stem cell donors were retrieved from the JBI Evidence-Based Health Care International Collaboration Library, Cochrane Library, PubMed, Embase, Scopus, Web of Science, CINAHL, American Psychological Database, China National Knowledge Infrastructure (CNKI), and China Biomedical Literature Database, with the search period ranging from database inception to August 2025. The quality of the studies was assessed using the JBI Critical Appraisal Checklist for Qualitative Research from the Australian JBI Centre for Evidence-Based Health Care, and results were synthesized using Meta-integration.

**Condition being studied** Hematopoietic stem cell transplantation (HSCT) is a therapeutic procedure that involves the intravenous infusion of healthy hematopoietic stem cells into a patient to reconstruct their hematopoietic and immune systems. This treatment is typically administered after the patient undergoes high-dose radiotherapy and/or chemotherapy, aiming to repair functional impairments caused by hematologic diseases or certain solid tumors. It is currently a key curative approach for such conditions. According to data from the official website of the China Marrow Donor Program, as of August 31, 2025, the number of patients applying for HSCT has exceeded 130,000, while the number of hematopoietic stem cell donations is only slightly over 20,000. The number of unrelated donors falls far short of the number of patients in need of HSCT. Moreover, the technical process for collecting hematopoietic stem cells that meet transplantation standards is highly complex. This process not only involves certain drug-induced reactions triggered by mobilizing agents but also requires managing a

series of complications that may arise during the collection procedure, such as bone pain, fatigue, nausea, vomiting, low-grade fever, headache, myalgia, and insomnia. These issues often lead to negative emotions and physical suffering in unrelated donors, resulting in varying degrees of psychological stress, including fear, anxiety, and distress. This can directly lead to unwillingness to proceed with donation, affecting donor compliance and even resulting in "donor attrition." Statistics show that the attrition rate after initial matching is as high as 20% in China, nearly 50% in the United States, and approximately 60% in Asia.

The psychological acceptance and attitude of unrelated donors directly impact the collection of hematopoietic stem cells. If the quality or quantity of the collected cells fails to meet transplantation criteria, recollection becomes necessary. This not only increases the donor's suffering but also adds to the patient's medical expenses and may even prevent the transplantation from taking place. Donor attrition not only delays treatment and causes physical and psychological trauma to the patient but also imposes a heavy socioeconomic burden on the patient's family, the healthcare system, and national finances.

Research indicates that the incidence of psychological disorders such as anxiety and depression in patients with hematologic diseases undergoing HSCT is almost 100%. However, few studies have explored the psychological stress experienced by unrelated donors. As a special group selflessly contributing to society, unrelated donors deserve attention from healthcare professionals and the broader community. This study employs a meta-synthesis approach to systematically summarize and analyze existing qualitative research on this topic, aiming to integrate current findings and provide evidence-based support and references for clinical nursing practice.

Two researchers conducted the screening, extraction, and integration of qualitative research literature related to the donation motivations and psychological experiences of unrelated donors in hematopoietic stem cell transplantation. Based on a predetermined search strategy, 468 articles initially related to the topic were identified. After steps such as deduplication, preliminary screening of titles and abstracts, and full-text review, eight articles were ultimately selected for inclusion in the meta-synthesis.

## METHODS

**Participant or population** Unrelated Donors for Hematopoietic Stem Cell Transplantation.

**Intervention** No Relevant Intervention.

**Comparator** No Comparator.

**Study designs to be included** Qualitative research using methodologies such as phenomenology, grounded theory, and ethnography.

### Eligibility criteria

#### 1. Inclusion Criteria

- ① Study Type: Qualitative studies employing methodologies such as phenomenology, grounded theory, ethnography, etc.
- ② Participants: Unrelated donors of hematopoietic stem cells (HSCs).
- ③ Study Content: The research must focus on or include the donation motivations and internal emotional experiences of unrelated HSC donors. If these themes are presented only as sub-themes within a larger study, the publication will still be included, but only data relevant to these specific themes will be extracted.
- ④ Context: The donors' status as unrelated donors for hematopoietic stem cell transplantation must be confirmed.

#### 2. Exclusion Criteria

Studies were excluded for the following reasons:  
The source of data collection was not the donors themselves.  
The full text of the publication was unavailable.  
The study was a duplicate publication.

**Information sources** We searched the following Chinese and English databases: China National Knowledge Infrastructure (CNKI), VIP Database (VIP), WanFang Database, PubMed, Web of Science, MedLine, and PsycINFO.

**Main outcome(s)** This study, following a comprehensive search and screening process, ultimately included 8 articles. From these, 45 findings were extracted and further synthesized into 9 categories, which culminated in three integrated themes:

The motivation of unrelated hematopoietic stem cell donors prior to donation.  
The psychological experience of unrelated donors during the donation process.  
The low-level ambivalent experience after the transplantation procedure.

Healthcare professionals should systematically assess and understand the donation motivation and the psychological experiences throughout the donation journey of unrelated allogeneic hematopoietic stem cell donors. It is crucial to provide these donors with "specialized, diversified, and stratified" support tailored to their needs, and to foster a supportive family and social environment. These measures are essential for advancing the field of hematopoietic stem cell transplantation.

**Quality assessment / Risk of bias analysis** The included studies were independently assessed using the quality appraisal tool for qualitative research from the Joanna Briggs Institute (JBI) Centre for Evidence-Based Health Care, Australia. This tool comprises 10 items, each rated against a four-point criterion: "Yes", "No", "Unclear", or "Not Applicable". Studies were then graded as follows:  
Grade A: Met all quality criteria, indicating a low risk of bias.  
Grade B: Partially met the quality criteria, indicating a moderate risk of bias.  
Grade C: Did not meet the quality criteria, indicating a high risk of bias.

**Strategy of data synthesis** The findings from the included qualitative studies were systematically synthesized using the meta-aggregation approach recommended by the Joanna Briggs Institute (JBI) Centre for Evidence-Based Health Care. This method involves extracting and categorizing findings from primary studies, which are then aggregated into new categories and further synthesized into comprehensive synthesized findings.

**Subgroup analysis** No subgroup analysis.

**Sensitivity analysis** The included studies were independently assessed using the quality appraisal tool for qualitative research from the Joanna Briggs Institute (JBI) Centre for Evidence-Based Health Care, Australia. This tool comprises 10 items, each rated against a four-point criterion: "Yes", "No", "Unclear", or "Not Applicable". Studies were then graded as follows:  
Grade A: Met all quality criteria, indicating a low risk of bias.  
Grade B: Partially met the quality criteria, indicating a moderate risk of bias.  
Grade C: Did not meet the quality criteria, indicating a high risk of bias.

**Country(ies) involved** China.

**Keywords** Unrelated Donors for Hematopoietic Stem Cell Transplantation; Donation Motivation; Psychological Experience; Qualitative Research; Meta-Synthesis; Evidence-Based Nursing.

**Contributions of each author**

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