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Original Article

A Qualitative Meta-Synthesis Exploring the Lived Experiences of Living Liver Donors

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Abstract

Living liver donors play a crucial role in liver transplantation but face numerous physical and psychological challenges throughout the process. A deeper comprehension of their experiences is essential to deliver holistic, personalized, and patient-centred care. Consequently, this study aimed to collect and integrate existing qualitative research to provide a comprehensive insight into the lived experiences of living liver donors. Following the Enhancing Transparency in Reporting the Synthesis of Qualitative Research guidelines, a meta-synthesis was conducted. Systematic searches of seven databases were conducted from their inception to March 2024, utilizing a combination of Medical Subject Headings and keywords. The data were synthesized using Thomas and Harden's three-step thematic synthesis technique. A total of nine studies met the inclusion criteria and were included in the synthesis. Analysis revealed four central themes: (1) encountering a life-changing event, (2) navigating shifts in interpersonal relationships, (3) adapting to various changes, and (4) experiencing personal development. Postoperative living liver donors undergo multiple physical, psychological, and social adjustments. Their efforts to manage these challenges highlight the vital role of coping strategies, ultimately leading to personal growth. Future nursing research should prioritize psychological support, interventions, and highlight positive donor experiences to enhance their quality of life.

Keywords: Qualitative research, Living liver donor, Liver transplant, Meta-synthesis, Experience

Introduction

Liver transplantation remains the sole effective treatment for patients with end-stage liver disease. Despite notable advancements in graft optimization and organ allocation over the past two decades, the shortage of available donor livers remains a critical challenge [1]. This shortage has resulted in extended median waiting times for transplantation. According to data from the United Network for Organ Sharing (UNOS), nearly 1,200 patients die annually while awaiting a liver transplant [1]. To address the deficit of grafts from deceased donors, living donor liver transplantation (LDLT) has emerged as a vital alternative [2]. Cultural, socioeconomic, and other factors have influenced the predominance of deceased-donor liver transplantation in Europe and America, whereas LDLT represents the majority of liver transplants in Asia [3].

LDLT offers the potential to expand the donor pool and reduce mortality among those on waiting lists. Furthermore, LDLT provides recipients with high-quality grafts and can prevent clinical deterioration or death that may occur while waiting. It also allows for elective transplantation scheduling and enables the selection of the optimal anatomical match [4].

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Although LDLT offers superior long-term survival outcomes for recipients [4], the procedure is invasive. It may lead to a range of postoperative complications for donors, including intra-abdominal hemorrhage, infection at the surgical site, bile leakage, and in severe instances, death [5]. Reported donor complication rates vary widely, from 24% to 67% according to existing literature [6]. These complications not only impede physical recovery but also pose challenges to psychological healing, thereby diminishing donors' long-term health-related quality of life [7]. Several studies [8–10] have documented adverse psychological effects in living liver donors post-surgery, such as anxiety, depression, remorse, and post-traumatic stress disorder. The emotional burden associated with donation may heighten psychological vulnerability and increase the risk of mental health issues. Additionally, donors often face strain in interpersonal relationships and financial difficulties related to the donation process [11, 12]. Research by Sarıgöl Ordin *et al.* [13] emphasizes the importance of both physical care and psychosocial support following surgery to help donors manage psychological, social, and economic challenges. Therefore, gaining a comprehensive understanding of the authentic lived experiences of living liver donors is crucial for promptly identifying their needs and delivering targeted supportive interventions that promote recovery and reintegration into normal life.

Most prior research focusing on living liver donors has been quantitative, examining immediate and long-term medical outcomes such as surgical complications, psychological and socioeconomic consequences, rapid recovery approaches, and health-related quality of life [14]. However, quantitative studies have limitations in capturing the everyday experiences of donors, prompting an increasing number of investigations utilizing qualitative methods. These qualitative studies have employed diverse methodological approaches and addressed various aspects, including complications, donor-recipient relationships, postoperative coping, information needs, and decision-making around donation. Due to the heterogeneity and differing findings among these studies, achieving a comprehensive understanding of the true lived experiences of living liver donors remains challenging. Thus, this meta-synthesis was conducted to analyze, interpret, and integrate previous qualitative research exploring the experiences of living liver donors.

Materials and Methods

Study design

This qualitative meta-synthesis was registered on PROSPERO (CRD42022328947) and reported following the guidelines outlined in the Enhancing Transparency in Reporting the Synthesis of Qualitative Research statement, thereby enhancing the rigor and completeness of reporting [15]. The choice of qualitative meta-synthesis was intentional, as this approach preserves the meaning from individual studies while generating a novel, integrated interpretation of findings. It facilitates the development of theoretical and conceptual insights that can inform clinical practice and guide the design of interventions [15].

Search strategy

A thorough search was performed across seven databases: PubMed, Embase, Web of Science, Scopus, CINAHL, Cochrane, and PsycINFO. This search utilized a combination of Medical Subject Headings (MeSH) alongside relevant keywords. After the initial search, a manual review of citations within included studies, pertinent systematic reviews, and clinical practice guidelines was conducted to identify any additional eligible publications. The electronic searches covered all records from the inception of each database up to March 2024. The search terms were developed by the study team, which included a research librarian affiliated with a third-level grade-A hospital, with subject headings adapted where necessary to accommodate database differences.

The search strategy combined the following keywords: (Liver Transplantation OR Liver Transplant ∗ OR Hepatic Transplant OR Hepatic Grafting OR Liver Grafting) AND (Living donors OR donor∗ OR donation) AND (qualitative research OR qualitative study OR qualitative descriptive OR qualitative method* OR qualitative methods OR qualitative analysis OR focus group OR interview OR attitude OR experience OR phenomenology OR feel* OR needs OR ground research). This review included only peer-reviewed qualitative studies that focused on the genuine feelings, inner needs, and emotional experiences of living liver donors. Qualitative studies were defined as those employing methodologies such as phenomenology, ethnography, grounded theory, hermeneutics, narrative and thematic analysis, or those reporting primarily textual rather than quantitative data.

Study selection

Following the search, all identified records were imported into EndNote X8 software (Clarivate Analytics, PA, USA), where duplicates were removed. Two independent reviewers (L.D. and Z.R.L.) then screened titles and abstracts to assess eligibility based on the inclusion criteria. Full texts of potentially relevant studies were further examined. Inclusion criteria were: (1) participants were living liver donors aged 18 years or older; (2) studies focused on the authentic feelings, inner needs, and emotional experiences of living liver donors post-surgery; (3) studies utilized qualitative designs; and (4) studies were published in peer-reviewed journals in English. Exclusion criteria included: (1) inaccessible full texts or incomplete data; (2) duplicate publications; and (3) studies solely reporting clinicians' perspectives or caregivers' experiences related to liver transplantation. Reasons for excluding full texts were documented. Any disagreements between the two reviewers at each stage were resolved through discussion, and if necessary, a third reviewer from the research team was consulted for independent assessment.

Appraisal of methodological quality

The methodological quality of the included studies was independently assessed by two reviewers (L.D. and F.C.L.), who had undergone systematic training in qualitative research. The 10-item Joanna Briggs Institute Critical Appraisal Checklist [16] was employed to evaluate the quality of qualitative research reports. This tool was chosen due to its coherence and suitability compared with alternative appraisal instruments for qualitative studies [17]. Discrepancies in the quality assessments or perceived risk of bias between reviewers were resolved by discussion, with a third reviewer engaged if consensus could not be reached. Consistent with prior research, studies required a minimum of six 'yes' responses across the checklist domains to be included [18].

Data extraction and synthesis

Once studies were confirmed eligible, two reviewers independently extracted pertinent information, including author, publication year, study aims or objectives, donor-recipient relationship, sample characteristics, methodology, data collection and analysis techniques, and identified themes. In cases where the reviewers disagreed, a third party was consulted to resolve the issue.

We employed Thomas and Harden's three-stage thematic synthesis method [19], which involves: (i) conducting line-by-line coding of relevant textual data; (ii) organizing these codes into descriptive themes; and (iii) generating analytical themes. Microsoft Word was used to facilitate the synthesis process. The primary reviewer (L.D.) thoroughly read each included study to gain comprehensive insight, then coded meaningful segments from the texts line by line. These codes were then reviewed, consolidated, and grouped into descriptive themes. Subsequently, the descriptive themes were further interpreted to form analytical themes. The primary reviewer revisited all coded data to ensure coding consistency and to identify any need for additional coding. The secondary reviewer (Z.R.L) examined the codes, and any differences were addressed through ongoing discussion. Together, the two reviewers compared the coded data and recurring themes across studies to identify overarching concepts that spanned multiple studies, forming the basis for the synthesis.

Rigor, trustworthiness, and reflexivity

Our analysis focused on participant quotations rather than relying on authors' interpretations or thematic summaries. The research team was multidisciplinary, comprising academic nurses responsible for aim development and interpretation, research assistants handling data analysis and synthesis, and a librarian tasked with the literature search, all affiliated with a third-level grade-A hospital. L.D., an MSc student, had a research interest in the experiences of living liver donors. Z.R.L. is a PhD student working on similar topics. F.Y.L. and F.C.L. bring relevant clinical and research expertise, while L.Z. has extensive experience in qualitative research and is engaged in research concerning symptom experiences in liver transplant recipients. Before conducting the study, the nursing and research assistants received training in qualitative methods. The team maintained regular communication via WeChat meetings and in-person group discussions throughout the meta-synthesis process. Any disagreements were settled through discussion and, if necessary, consultation with a third reviewer (L.Z). To enhance credibility, the analytical themes were presented to five individuals who had donated a liver to family members, and their feedback was incorporated into the final themes.

Results and Discussion

Characteristics of included studies

The initial search yielded 3,880 articles. After removing duplicates, 3,380 records remained. Screening titles and abstracts resulted in the selection of 51 studies for full-text review. Two authors independently assessed these 51 full-texts, excluding 42 articles. Ultimately, nine studies fulfilled all inclusion criteria and were included in the meta-synthesis. The search process and results are summarized under PRISMA guidelines, with the flow diagram presented in **Figure 1**.

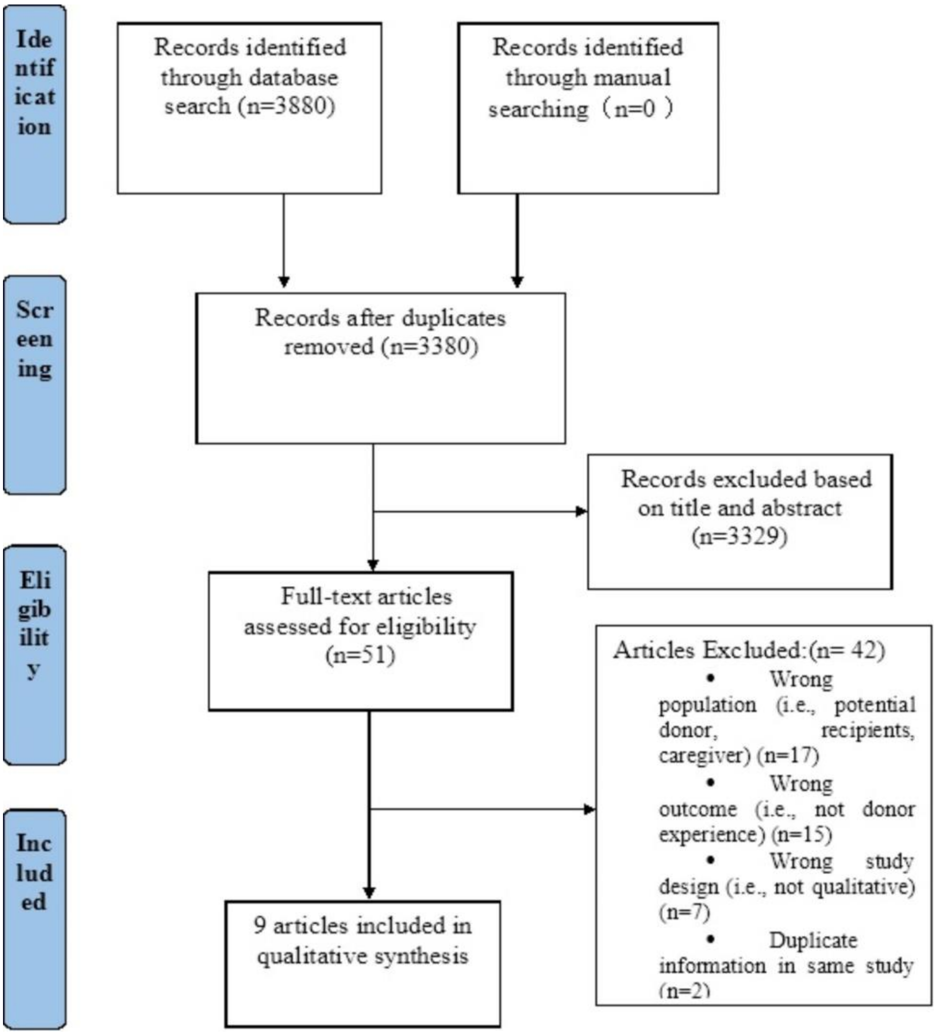

Figure 1. Flowchart of the study selection process

The included research comprised two studies from the USA, two from Turkey, and one each from Canada, China, Germany, Japan, and Sweden. Collectively, these studies involved 144 living liver donors. Various qualitative approaches were applied, with phenomenology being the most prevalent method [20–22] (n = 3). Grounded theory was utilized in two studies [23, 24], ethnography in one [25], while three studies [26–28] were identified simply as "qualitative" without specifying a particular methodology. Data collection predominantly relied on interviews, and data saturation was confirmed in five of the studies. Analytical techniques varied, including content analysis, thematic analysis, interpretive phenomenological analysis, and grounded theory. Comprehensive study details are presented in **Table 1**. Most studies adhered to the Joanna Briggs Institute quality standards, with appraisal results summarized in **Table 2**.

Table 1. Characteristics of studies included in meta-analysis

Study	Country	Objective	Donor-recipient relationship	Sampling method (sample size)	Study design	Data collection, analysis, and saturation	Key themes
Krause *et al.* [26]	Canada	To examine post-traumatic growth in anonymous living liver donors	Non-directed	Convenience Sampling (26)	Qualitative	In-depth, semi-structured interviews (phone and in-person); Constant comparison method; Saturation not reported	- Valuing close relationships - Self-perception - Recognizing personal strength - New opportunities - Legacy and generativity

Ordin *et al.* [27]	Turkey	To investigate donor-recipient dynamics after living-donor liver transplantation	Directed	Convenience Sampling (11)	Qualitative	Face-to-face, semi-structured interviews; Thematic content analysis; Data saturation achieved	- Becoming caregivers - Relationship changes post-transplant: (1) Guilt, (2) Closer bonds due to indebtedness, (3) Distancing due to indebtedness
Krespi *et al.* [23]	Turkey	To understand the life experiences of living donors	Directed	Typical Sampling (16)	Grounded theory	Interviews; Grounded theory analysis; Saturation not reported	- Life limitations post-donation - Awareness of lifestyle changes - Emotional shifts - Personality changes - Varied relationships
Nasr *et al.* [25]	USA	To assess the impact of donation on donors' emotional and family life	Directed	Convenience Sampling (13)	Focused ethnographic qualitative	Semi-structured interviews, observations, field notes; Thematic analysis; Data saturation achieved	- Increased self-awareness - Clarified family relationships - Shifted community perspectives
Weng *et al.* [20]	China	To explore perceptions and coping strategies of living liver donors	Directed	Purposive Sampling (7)	Phenomenological	Face-to-face, tape-recorded interviews; Thematic content analysis; Data saturation achieved	Core theme: Maintaining peace of mind Sub-themes: - Avoiding information - Normalizing surgery - Confidence in process - Valuing the decision
Papachristou *et al.* [24]	Germany	To study the evolution of donor-recipient relationships post-LDLT	Directed	Theoretical Sampling (18)	Grounded theory	Semi-structured, open-ended interviews; Grounded theory analysis; Data saturation achieved	- Relationship changes post-donation - No change in relationships - Donation's influence on relationships - Gratitude and donation - Instrumental use of donation
Kusakabe *et al.* [28]	Japan	To explore living donors' emotions regarding adult-to-adult liver transplantation	Directed	Snowball Sampling (18)	Qualitative	Semi-structured interviews; Content analysis; Saturation not reported	Pre-transplantation: - Motivation to donate - Emotions during decision-making - Feelings post-medical approval - Concerns - Pre-transplant feelings toward recipient Post-transplantation: - Impact of LDLT experience - Post-transplant feelings toward recipient

Charlotte *et al.* [21]	USA	To describe the meaning of being a live liver donor	Directed	Purposive Sampling (6)	Phenomenological	In-depth, semi-structured interviews; Munhall's phenomenological method; Data saturation achieved	- Irreversible commitment - Emotional roller coaster - Donor support network - Physical scar - Reflective thoughts
Forsberg *et al.* [22]	Sweden	To explore deeper emotions of parents donating a liver to their child	Directed	Purposive Sampling (11)	Interpretive phenomenological	In-depth, unstructured interviews; Interpretive phenomenological analysis; Saturation not reported	- No choice in donating - Confronting fear of death - Shift from health to illness

Abbreviations: LDLT: living donor liver transplantation

Table 2. Joanna Briggs Institute critical appraisal of included studies

Study	**Domain 1: Alignment between philosophical perspective and methodology**	**Domain 2: Consistency between methodology and research question or objectives**	**Domain 3: Compatibility of methodology with data collection methods**	**Domain 4: Coherence between methodology and data representation and analysis**	**Domain 5: Agreement between methodology and interpretation of findings**	**Domain 6: Statement situating the researcher within cultural or theoretical contexts**	**Domain 7: Consideration of the reciprocal influence between researcher and research**	**Domain 8: Adequate representation of participants and their perspectives**	**Domain 9: Ethical conduct of the study according to current standards or proof of ethical approval**	**Domain 10: Conclusions logically derived from the analysis and interpretation of data**
Krause *et al.* [26]	Unclear	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Ordin *et al.* [27]	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Krespi *et al.* [23]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nasr *et al.* [25]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Weng *et al.* [20]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Papachristou *et al.* [24]	Unclear	Yes	Yes	Yes	Yes	No	Yes	Yes	Unclear	Yes
Kusakabe *et al.* [28]	Unclear	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Charlotte *et al.* [21]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes

Forsberg *et al.* [22]	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Unclear	Yes

Main findings of the synthesis

This meta-synthesis identified four central themes: confronting a life-changing situation, undergoing shifts in interpersonal relationships, managing changes, and reaching personal growth **(Figure 2)**. Input from five living liver donors during the review of these analytical themes emphasized the crucial role of personal development. Below are the themes accompanied by illustrative key quotations.

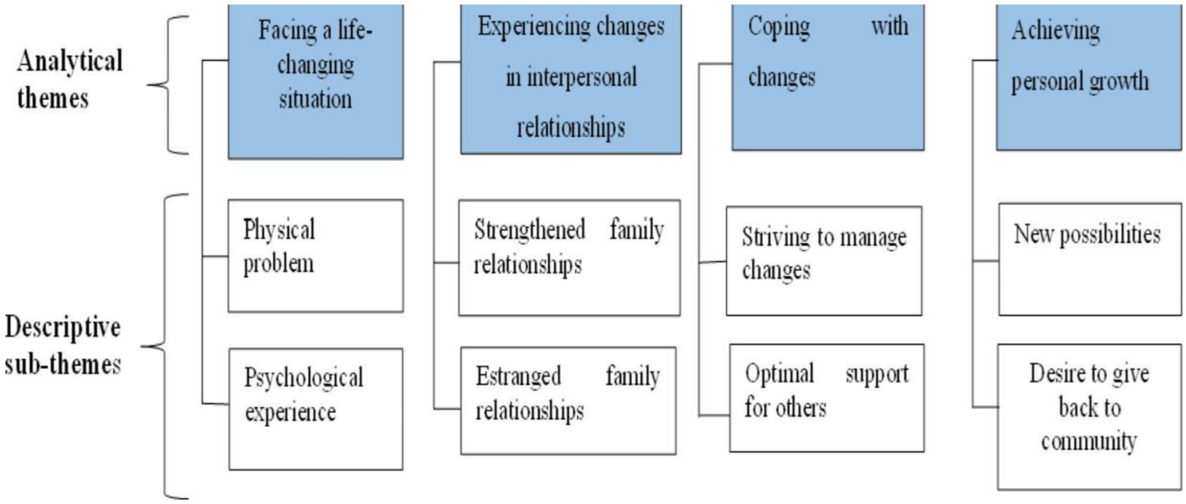

Figure 2. Synthesized themes and sub-themes

Theme 1: facing a life-changing situation

Donors characterized the donation experience as a transformative event, and in some instances, as a life-saving gift [24, 25]. When asked to elaborate on these life-altering circumstances, most donors described undergoing a phase marked by considerable physical and/or psychological hardship. Encountering a shift from being healthy, strong, and eligible donors to individuals with acknowledged illnesses, donors reported various physical challenges, including bowel problems, expected limitations in movement and mobility, and intense pain [21, 22, 26].

"Someone at the liver surgery unit told me that after the operation, there will be a slight pain in the wound. I have to say that was a gross understatement. I could never imagine that one could be so totally paralyzed by a wound." [22].

While donors accepted the physical challenges as an inevitable "tradeoff" — prioritizing the recipient's survival over their bodily difficulties — psychological struggles were equally troubling. The included studies showed that after surgery, living liver donors often felt isolated, powerless, vulnerable, hurt, and overlooked, expressing a need for more care and attention [22, 27]. However, even following hospital discharge, the focus of healthcare professionals and family members tended to remain primarily on the recipient. Despite this, donors frequently voiced ongoing worries about the recipient's condition, including concerns about transplant complications, adverse effects of medications, and laboratory test results [23, 28].

"After surgery, my mother and I were put in the same room. No one showed interest in me. Ris's disinterest continued after our discharge. I always had the role of an attendant, but I needed care too." [27].

Despite the noted challenges, donors also expressed positive sentiments. They regarded the donation as a distinctly rewarding and meaningful act, with some describing feelings of pride, happiness, certainty, confidence, and gratitude for belonging to a special group and having the opportunity to contribute positively to others' lives [23, 25, 26]. Furthermore, as time passed during the postoperative period, donors' satisfaction with their donation increased, particularly as the recipient's health improved.

"Um, and just kind of made me, definitely like a self-esteem boost knowing that I'm able to have the potential to do good things for other people." [26].

Theme 2: experiencing changes in interpersonal relationships

The studies included revealed that donors experienced both strengthened and strained relationships with those close to them as a consequence of their donation. On one hand, donors reported maintaining an intimate and positive—or even improved—relationship with the recipient. They demonstrated increased understanding and interest in one another, greater trust, and more frequent communication or meetings, leading to what they described as a unique and deepened connection [23–28]. At the same time, donors also recognized a specific strengthening of family ties, which contributed to a renewal of their family dynamics and their sense of self. As a result, donors perceived their donation as a meaningful and fulfilling experience.

"As a result of the illness, we started getting along very well with each other and better and better, till she could open herself to me and tell me everything which had happened to her, in her life. Ris made her feel better and we have become so honest with each other, that I could tell her my problems too." [24].

"It creates a different bond between you, I mean, you donating your organ, your liver to your mother is an entirely different thing, it creates a completely different bond I mean." [23].

Conversely, donors also faced complex dynamics in their relationships, both with the recipient and their families. In terms of the recipient, feelings of indebtedness and gratitude for the donor's sacrifice sometimes caused the recipient to create emotional distance, which could affect the genuineness of their communication, particularly during conflicts [24, 27]. Regarding family relationships, some family members perceived that the donor prioritized the recipient over family bonds, and donors often felt they lacked adequate support from their family throughout the donation process, resulting in strained family relationships [25, 27].

"Everything got worse after the transplantation. He said that I treated him badly since he owed me. However, I didn't do anything bad to him. He misunderstood me." [27].

"I knew it was something that bothered her a lot, and she was angry at me about it. [Laughs] It was resentment that moved toward anger later on. It expressed itself, you know, in ways that I had never imagined." [25].

Theme 3: coping with changes

The significant effects on donors' physical and psychological well-being require effective coping mechanisms to manage these challenges. Several studies have found that many donors work to adapt, accept, or come to terms with this life-altering experience following surgery [20, 21, 24, 28]. Examples include efforts to regulate negative emotions, perceiving complications as temporary and controllable, distancing themselves from overwhelming information, maintaining a general sense of confidence, and attributing meaningful value to their donation [20, 21, 24, 28]. Additionally, some donors highlighted that their religious faith and personal beliefs play a significant role in reducing stress and facilitating their coping process [23].

"I take care of myself very well. I think it [liver donation] was not a problem. I only needed to donate a part of liver. The liver will regenerate, and I will recover after surgery quickly." [20].

"Rank you God for granting me such thing so that I can do something good for my child. You gave me such a good liver that it also did good to her." [23].

Moreover, the majority of donors emphasized that assistance from family, friends, healthcare professionals, and the community was crucial for navigating the most challenging moments after their donation [23–25]. This support came in various forms, including financial aid and emotional encouragement through conversations about the donation, sharing information related to the illness, offering verbal praise and encouragement, helping donors regulate their emotions, praying alongside them, and celebrating their contributions. These acts helped donors feel cared for, inspired, comforted, and supported.

"Very often and we write to each other. We are in contact at least two or three times a week, if possible. And then I also helped her financially. She's living from welfare, so I'd like to support her financially. And I am writing really nice letters to her, she is replying, and we talk, and she encourages me on the phone." [24].

"If I didn't understand something, we were going to discuss it and make sure that I did understand what was going on. Dr C was comprehensive; he'd get a piece of paper or a napkin, and he would draw me a picture and show me exactly what's connecting and where it's going, and he did put the information out there so that you could ask the questions." [25].

However, some donors reported that the emotional support and information they received from family members and healthcare providers were inadequate [22, 23, 27].

"My father and mother are very old; they are in the village. When I had this operation, they weren't here." [23].

"Little or no support was provided. You get the feeling that such resources are not prioritised at all … Yes, there is a great deal of fear and thoughts and stuff that you can't share with others, there's just no time for it." [22].

Theme 4: achieving personal growth

A final theme emerging from several included studies was participants' accounts of personal growth. Although these studies highlighted considerable challenges related to physical recovery and psychological difficulties following donation, many donors viewed these hardships as opportunities for growth and finding meaning in life. Some donors reported that their previous beliefs about their limitations and strengths were transformed, leading to increased confidence and new insights into their abilities [25]. This newfound self-awareness allowed them to accomplish goals that had once seemed unattainable and to embark on new life directions [26, 28], such as performing before large audiences—something they had never imagined possible before.

"And I can just keep growing in any way that I want to now, and I don't have to, like, listen to the no person in your head that, like, just like, 'No, you can't do that.' Why not? Why the heck not? You know? Like, you defy the things you think are possible, and then all of a sudden everything becomes possible." [26].

Moreover, some donors expressed a strong desire to give back to the community that had supported them, inspired by the new outlook gained through their donation experience [25, 26]. One donor reflected, "The donation did open our eyes to do something to reach out and to pick your neighbour up, and we knew right after the donation that we were now responsible for putting something back into the kitty" [25]. Additionally, the experience of donating prompted donors to shift their life perspectives, encouraging them to appreciate the present moment rather than solely concentrating on advancing their careers or their children's academic achievements [21, 23, 28].

"It made me realize who I am and what I want to be, the value of life. Rat you take things for granted or you can just let life pass you by and not do anything." [21].

"It's provided me a more, um, awareness [… .] and consciousness of my place in society, in my community, my spiritual and physical connection, and my desire to just continue on the same ethos of helping people where possible." [26].

This review synthesized and compared nine qualitative studies that aimed to explore the lived experiences of living liver donors. Four major themes were identified: facing a life-changing situation, experiencing changes in interpersonal relationships, coping with changes, and achieving personal growth.

The first theme, facing a life-changing situation, highlighted the physical and psychological challenges donors faced post-surgery. The majority of donors described various physical alterations following surgery across the included studies. This aligns with findings from a prior systematic review [7] involving 13 prospective longitudinal studies, which concluded that donors experienced a decline in physical functioning post-surgery, with recovery to pre-donation levels typically by two years. A separate study [29], featuring the longest mean follow-up of 11.5 years, found that donors maintain excellent quality of life for up to 20 years post-donation, returning to normal daily activities without enduring physical or psychosocial issues. Psychological changes were also evident; donors reported feelings such as loneliness, helplessness, vulnerability, hurt, neglect, and significant concern for recipients, alongside positive emotions including pride, joy, certainty, confidence, and gratitude. These observations correspond with the findings of Kisch *et al.* [30] in 2018. Negative emotions heightened donor vulnerability and impeded access to mental health support, while worries about recipients, insufficient psychological care, and uncertainty about the future further aggravated psychological distress. From the perspective of positive psychology, positive psychological traits serve as a defense mechanism, helping individuals develop effective coping strategies. Studies [31, 32] demonstrate that positive emotions enhance psychological functioning and social connections, improve well-being, reduce physical and mental health risks, and ultimately support donors in adapting more successfully to recovery. Our findings align with previous research [33, 34], which shows that donors often experience increased self-esteem, self-affirmation, and positive lifestyle changes. For instance, Rudow *et al.*'s study [31] reported that liver donors exhibited greater life expectancy. Consequently, transplant teams—including nurses and coordinators—should comprehensively understand donors' psychological experiences, emphasize the beneficial role of positive psychological traits, consider individual personality differences and recipient disease stages, and collaboratively identify factors that support positive psychological experiences. This approach will help maximize donors' psychological well-being and minimize the impact of negative emotions, particularly when donor or recipient outcomes are unfavorable.

Next, changes in interpersonal relationships were noted as an essential aspect of donors' lived experiences. At least six of the eleven studies examined described shifts in relationships, whether with the recipient, partners, or immediate family members. This finding is consistent with those from a recent systematic review focused on the psychological impact of living kidney donation [35], which highlighted the central issue of the "donor-recipient relationship after living kidney donation." That review [35], along with other studies [36–38], suggests that relationships between donors, recipients, and their families rarely deteriorate after transplantation; instead, they often remain stable or even improve. Evaluating the donor-recipient relationship is a critical part of the psychosocial assessment during the transplant process. Facilitating access to post-transplant psychological support aimed at addressing potential relationship deterioration may enhance donors' adjustment to changing relationship dynamics and contribute positively to their psychosocial well-being and transplant outcomes [39]. The gift-exchange theory [40] offers a valuable framework for understanding changes in donor-recipient relationships, and this insight can guide transplant teams in supporting donors, recipients, and their families throughout the transplantation journey.

The combined findings of this study indicate that positive personal responses and support from various sources enhance donors' ability to cope more effectively with the donation experience. Establishing and maintaining a comprehensive support system tailored to the needs of living liver donors is essential for promoting and sustaining their physical and mental well-being [41–44]. Consequently, support should be customized according to each donor's specific situation. Regarding informational support, the transplant team must provide donors with detailed information about the surgery to help them fully understand the entire process, the procedures involved, and the potential risks [43]. At the same time, addressing donors' financial challenges requires expanding public funding and financial aid throughout all stages of donation, including donor eligibility assessments, surgery, postoperative

care, and health monitoring after donation [45]. At the familial level, transplant families should be encouraged to actively participate, enhance care for the donor, foster emotional communication, and establish a multidimensional support system to reduce psychological stress and motivate donors to engage positively with life after donation [46]. Through multidisciplinary collaboration involving healthcare professionals, social workers, and transplant coordinators, living liver donors can receive ongoing counseling and emotional support for social reintegration after donation, facilitating their return to a normal life and helping to preserve their quality of life [47].
The theme of "achieving personal growth" highlighted that living liver donors experience a transformative process involving physical recovery and psychological challenges that ultimately lead to positive growth. Living donation embodies reciprocity—the donor gives a portion of their liver, intending to provide life or health to another individual. In turn, donors often feel a heightened sense of meaning in their own lives and develop a deep appreciation for life itself. Some donors even likened their donation experience to the profound act of childbirth, symbolizing the giving of life in different forms [16]. This finding aligns with a recent review [48] that showed living kidney donors derive personal benefits from the donation experience. Although earlier reviews [30, 49] paid limited attention to the positive personal growth experienced by living donors, our results are consistent with other studies [50, 51], which suggest that donation acts as a catalyst for long-term, positive personal development. These insights strengthen the ethical justification for living liver donation. It is also important to acknowledge that the lived experiences of living liver donors may differ depending on the relationship to the recipient. However, comparisons between directed and non-directed donors are limited due to the scarcity of data on anonymous donors. Directed donors are mostly close relatives such as first-degree family members, spouses, or partners [52], who often describe their donation as akin to giving their loved one a new lease on life [53]. Meanwhile, non-directed donors—who donate to an unknown recipient—tend to perceive their donation as a gift exchange, involving both giving and receiving reciprocally [54].

Implications

This study systematically examined and synthesized the lived experiences of living liver donors after surgery, offering transplant teams a deeper understanding of donors' inner perspectives to guide personalized care. It is essential for transplant teams to carefully observe the physical, psychological, and social shifts donors undergo post-surgery, closely track any physical complications shortly after donation, and provide continuous psychological support along with family involvement to aid donors in resuming normal life. Donors and recipients who face adverse outcomes should be considered vulnerable and receive heightened attention with ongoing follow-up care. Notably, this study highlights the significance of positive personal growth among living liver donors. Those with positive donation experiences can support prospective donors by sharing their journeys and offering emotional encouragement, empowering them to make well-informed, confident decisions. Future nursing research should prioritize these positive facets and investigate strategies to strengthen and optimize them, helping living liver donors reach their highest functional potential.

Limitations

Certain limitations must be acknowledged. Although the search was exhaustive and systematic, some relevant studies might have been missed. Additionally, restricting inclusion to English-language publications may have excluded pertinent non-English articles and grey literature. Furthermore, combining studies on donors involved in both pediatric and adult liver transplantation may have somewhat influenced the integrative findings.

Conclusion

This meta-synthesis of qualitative research examined the physical, psychological, and social transitions experienced by living liver donors, highlighting the importance of coping strategies and personal growth. The review provides a more nuanced understanding of donor experiences compared to existing literature. Supporting early recovery and enhancing the quality of life for living liver donors remains a key responsibility for healthcare professionals. Identifying and evaluating current coping strategies enables nurses and donors to collaborate in assessing their effectiveness and to adapt approaches when more suitable coping mechanisms are needed. Future research should adopt rigorous methodologies with clear frameworks and consider theory-based approaches to advance academic knowledge and develop patient-centered interventions tailored for living liver donors.

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