



CADTH Health Technology Review

Perspectives and Experiences Regarding the Creation of Arteriovenous Fistulas for Hemodialysis Access: A Rapid Qualitative Review

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Abbreviations

AVF	arteriovenous fistula
AVG	arteriovenous graft
CASP	Critical Appraisal Skills Programme
CKD	chronic kidney disease
CVL	central venous line
EndoAVF	endovascular AVF creation
ESRD	end-stage renal disease
GA	general anesthetic
LA	local anesthetic
RA	regional anesthetic
SDM	shared decision-making

Key Messages

- This review focused on the perspectives and experiences of adults with end-stage renal disease (referred to as “patients”), their families, and their health care providers regarding accessing, offering, deciding about, undergoing, performing, and recovering from procedures to create arteriovenous fistulas (AVFs) for hemodialysis. AVFs are connections between an artery and vein used for vascular access, a process that allows a hemodialysis machine to access a patient’s blood. A total of 8 qualitative studies were synthesized.
- Patients and health care providers mostly valued shared decision-making (SDM) when deciding to undergo procedures to create AVFs. The perceived benefits of SDM include patients’ increased knowledge of their condition, satisfaction, greater sense of control, and improved coping abilities. Yet, some health care providers continue to practice traditional prescriptive approaches to decision-making. Contextual factors influenced decision-making approaches and patients’ agency to access or refuse procedures to create AVFs. These factors included values, beliefs, and attitudes; the timing of decision-making; and human, structural, financial, and informational resources. People who are racialized and those experiencing poverty, houselessness, or language barriers may disproportionately experience difficulties engaging in timely and informed SDM; as a result, they may make uninformed decisions or experience traumatic unplanned dialysis initiation using a form of vascular access they did not choose.
- Decision-makers may consider promoting SDM practices by integrating SDM criteria in health care performance measures and SDM reimbursement models. They may also consider providing decision aids and SDM coaching to health care providers. They may also consider tailored interventions based on unique social, financial, and language-related needs to promote equitable access to procedures to create AVFs.
- During decision-making, patients weigh factors such as trust in their health care providers, past experiences, the invasive nature of procedures to create AVFs, and the anticipated outcomes of these procedures. Patients’ fears of being “cut” or experiencing pain and complications could hinder their engagement in these procedures. Patients’ concerns about an AVF being dysfunctional or hard to maintain and the anticipated pain of needles could also prevent them from wanting AVFs. Additional concerns included the risk of bleeding and an AVF’s impact on physical appearance.
- The included literature provided limited insights into the perspectives and experiences of undergoing, performing, and recovering from procedures to create AVFs. However, some patients and their families experienced financial and emotional burdens while accessing these procedures in Canada. This can be exacerbated by prolonged surgical wait times and rescheduling. People in rural communities, who often had to travel long distances for care, experienced these burdens more than those living in urban areas. Additionally, 1 study reported that surgeons often lead decision-making regarding anesthesia for surgical AVF creation procedures. While considering patient preferences, some health care providers perceive that regional anesthesia made these surgeries easier to perform, potentially resulting in better-quality AVFs. However, barriers to implementing regional anesthesia

include limited human resources, funding, and time.

- Finally, patients recovering from procedures to create AVFs reported experiencing pain and fear related to the possibility of never using their AVF. None of the included studies explicitly reported experiences of endovascular procedures to create AVFs. Unlike surgical procedures, these more recent techniques can take place in office-based practices, are noninvasive, and may not cause surgical scarring. Research is needed to explore how implementing endovascular procedures to create AVFs would impact patients' experiences, outcomes, and access to procedures to create AVFs. Further research is needed to explore health care provider and system barriers to using regional anesthesia.

Context and Policy Issues

Chronic kidney disease (CKD) is characterized by abnormal kidney structure or function that is present for greater than 3 months.¹ In the final stage of CKD (i.e., end-stage renal disease [ESRD]), the kidneys no longer function to meet the body's needs by filtering the waste from blood and excess salt and fluid.¹ For this reason, people with ESRD require renal replacement therapy to perform this life-sustaining function.^{1,2} As of 2021, more than 48,000 people in Canada were living with ESRD.³

Hemodialysis is a type of renal replacement therapy wherein a person is connected to a machine that filters their blood of excess wastes, salts, and fluids before returning it to them.^{2,4,5} Vascular access is required for a hemodialysis machine to access a person's blood, remove it, and return it to them at a high rate.² Types of vascular access used in hemodialysis include central venous lines (CVLs) (a tube inserted into a large vein), arteriovenous grafts (AVGs) (a synthetic tube joining an artery and vein), and arteriovenous fistulas (AVFs) (a connection created by a vascular surgeon between an artery and vein).^{4,5} Observational studies have reported that AVFs have longer-term durability and lower association with infections and blood clotting events compared to CVLs and AVGs.^{6,7} The literature, however, reports a lack of randomized control trial evidence demonstrating the superiority of AVFs and acknowledges that ideal vascular access depends on a patient's characteristics, values and preferences, life circumstances, and care contexts (e.g., the resources available to support timely access to AVF creation procedures).^{4,8,9} Recent practice guidelines recommend that clinicians move away from historically encouraged "fistula first" paradigms and emphasize AVFs as the ideal first type of vascular access for people to use for hemodialysis, as well as moving toward creating individualized vascular access plans.¹⁰⁻¹² Still, some people with ESRD and their providers may decide that undergoing a procedure to create an AVF is the best option.⁵

Health care providers create AVFs either through open surgical or minimally invasive endovascular or percutaneous procedures (i.e., endovascular AVF creation [EndoAVF]).^{13,14} Open surgical procedures involve a vascular surgeon creating an incision in an upper extremity to create an AVF, typically using nonabsorbable sutures.^{13,14} EndoAVF, a newer approach, involves a health care provider accessing blood vessels through punctures in the skin and guiding an endovascular device to a site where it can be used to create an AVF, either through radiofrequency or thermal energy.¹³ Whether performed surgically or endovascularly,

procedures to create AVFs ideally should take place 3 to 6 months before a patient needs hemodialysis to allow time for any necessary surgical revision and for the site to mature so it can be accessed using a needle for hemodialysis.^{5,13} However, as detailed by Brown et al.,¹⁵ patients may experience barriers to accessing or benefiting from these procedures. Of note, the authors reported that certain equity-deserving groups, such as older adults, females, and people who are Black, living in rural and remote communities, or without health insurance may experience disproportionately lower rates of timely access to AVFs and successful AVF maturation.¹⁵

Traditional open surgical AVF creation procedures require operating room time. However, resource constraints may result in extended surgical wait times, limiting the number of patients who can initiate hemodialysis with AVF. When unable to receive timely access to a functional AVF, patients may receive a CVL, which, as detailed earlier, may be associated with higher rates of risks such as infections.^{6,7} The novel, minimally invasive EndoAVF procedure may reduce costs and wait times associated with surgery. EndoAVF may also be safe, although evidence regarding its clinical efficacy may be limited in quantity and quality.^{16,17}

As decision-makers deliberate on the value of adopting EndoAVF procedures in their jurisdictions, this qualitative rapid review provides a nuanced understanding and synthesis of the perspectives, expectations, and experiences of adults aged 18 years and older with ESRD, their families, and their health care providers regarding accessing, offering, deciding about, undergoing, performing, and recovering from surgical or endovascular procedures to create AVFs for hemodialysis. Additionally, it will explore equity considerations regarding accessing, using, and experiencing benefit from these procedures, as detailed in these perspectives, expectations, and experiences.

Recognizing Indigenous Peoples' experiences, values, needs, and priorities is crucial for understanding and advancing the state of health technologies and health services in Canada. They also play a vital role in guiding decision-making concerning surgical or endovascular procedures to create AVFs for hemodialysis access. In the interest of fostering culturally safe practices and following careful consideration, we have determined that it would not be appropriate to seek input from Indigenous Peoples regarding their perspectives and experiences for the following reasons. The rapid nature of this review precluded the ability to engage with Indigenous Peoples and Knowledges appropriately. Due to the limited time frame available for establishing respectful and meaningful relationships with Indigenous Peoples to inform this work, CADTH acknowledges that any efforts to incorporate Indigenous Knowledges and voices would not be culturally appropriate or safe. Moreover, such attempts may inadvertently perpetuate harm. CADTH acknowledges that the lack of engagement with and inclusion of Indigenous perspectives and voices constitutes a major limitation and gap in our work. In the spirit of reconciliation, CADTH is in the process of developing reciprocal relationships and authentic engagement with Indigenous partners to develop a strengths-based approach and process to conduct future work that respectfully explores and incorporates Indigenous Knowledges, perspectives, and experiences.

Research Question

1. What are the perspectives, expectations, and experiences of adults aged 18 years and older with ESRD, their families, and their health care providers regarding accessing, offering, deciding about, undergoing, performing, and recovering from surgical or endovascular procedures to create AVFs for hemodialysis?

In addition to the primary research question, the reviewer paid particular attention to equity considerations regarding accessing, using, and experiencing benefit from procedures to create AVFs for hemodialysis, as detailed by people with ESRD, their families, and their health care providers.

Methods

Literature Search Methods

An information specialist conducted a literature search on key resources including MEDLINE and the Cumulative Index to Nursing and Allied Health Literature (CINAHL). The search approach was customized to retrieve a limited set of results, balancing comprehensiveness with relevancy. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine’s MeSH (Medical Subject Headings), and keywords. The search concepts were developed based on the elements of the research questions and selection criteria. The main search concept was arteriovenous fistula. [CADTH-developed search filters](#) were applied to limit retrieval to qualitative studies. The search was completed on October 24, 2023, and limited to English-language documents published since January 1, 2014.

Selection Criteria and Methods

One reviewer screened citations and selected studies. In the first screening level, they reviewed titles and abstracts and retrieved potentially relevant articles. They based their final selection of full-text articles on the inclusion criteria presented in [Table 1](#).

Table 1: Selection Criteria

Criteria	Description
Sample	People with ESRD aged 18 years and older, their families, and their health care providers who have engaged with or considered engaging with surgical or endovascular procedures to create AVFs for vascular access for hemodialysis
Phenomenon of interest	Surgical or endovascular procedures to create AVFs for hemodialysis access
Design	Any qualitative design
Evaluation	Perspectives on, expectations of, and experiences with accessing, offering, deciding about, undergoing, performing, and recovering from surgical or endovascular procedures to create AVFs
Research type	Primary qualitative studies and qualitative component of mixed-methods studies (excluding surveys)

AVF = arteriovenous fistula; ESRD = end-stage renal disease.

Exclusion Criteria

The reviewer excluded articles if they did not meet the selection criteria outlined in [Table 1](#), such as those focusing only on the experiences of people engaging with AVFs after recovering from procedures to create them. Examples of studies excluded for this reason were those focused on experiences of using or having someone else use a needle to access an AVF for hemodialysis or living with and maintaining an AVF after recovery from the initial procedure to create it. Additionally, the reviewer excluded citations published in languages other than English, grey literature, and duplicate publications. Casey et al.¹⁸ published a qualitative systematic review describing patients' perspectives on vascular access initiation and maintenance in hemodialysis in 2014. For this reason, the reviewer also excluded articles published before 2014.

Critical Appraisal of Individual Studies

The reviewer used the optimized version of the Critical Appraisal Skills Programme (CASP) tool to critically appraise the included studies.¹⁹ This tool promotes an efficient and systematic appraisal that acknowledges, accepts, and considers the diverse philosophical underpinnings of qualitative inquiry and the varied approaches and methods they inform.¹⁹ The reviewer used the optimized CASP tool's 11 items as prompts for engaged and critical reflection about the trustworthiness and rigour of the included studies. They did not exclude articles based on their quality but instead critically appraised the included studies to provide readers with insight into their limitations and strengths.

Data Analysis

One reviewer analyzed and synthesized the qualitative findings from the included studies informed by the "rapid best-fit framework" synthesis approach.²⁰ The analysis followed a 3-stage approach, which included the development of an initial analytical framework informed by the research questions and familiarization with the included literature, a deductive and inductive extraction and analysis of the data informed by the initial framework, and the iterative refinement of the framework to reflect inductively identified content and relationships among data and themes.

The reviewer developed the initial framework based on 3 sensitizing categories drawn from the research questions, remaining open to refinement in the following analytical stages. The categories aimed to capture the perspectives, expectations, and experiences of people with ESRD, their families, and health care providers regarding:

- accessing, offering, and deciding about surgical or endovascular procedures to create an AVF, initially conceptualized as the period from contemplating offering or undergoing these procedures until the procedure is scheduled
- performing or undergoing the procedure, initially conceptualized as the period from which a surgical or endovascular procedure to create an AVF is scheduled until it is complete
- recovering from the procedure, initially conceptualized as the period that follows completion of the procedure until a health care provider decides and communicates to a person with ESRD and/or their family that either the AVF has matured, an additional unplanned procedure is required to facilitate the AVF's maturation, or the AVF will never reach maturation.

The reviewer also used considerations detailed in the Scoping and Evaluation phases of Benkhalti et al.'s Equity Checklist for Health Technology Assessment (ECHTA) to inform which concepts to remain sensitive to during the analysis to capture equity considerations.²¹

- The reviewer conceptualized *health equity* as a fair and just opportunity for people with ESRD and their families to access, use, and experience benefits from surgical or endovascular procedures to create AVFs to achieve or maintain the best possible health.^{21,22}
- The reviewer conceptualized *equity of access* as a fair and just opportunity to receive and offer surgical or endovascular procedures to create AVFs. They conceptualized *equity of use* as patients' and families' fair and just opportunities to experience care when deciding, undergoing, and recovering from AVFs that appropriately addresses their physical, psychosocial, informational, cultural, and spiritual needs.
- Finally, the reviewer conceptualized *equity of benefit* as fair and just opportunities for patients, families, and health care providers to achieve or maintain the best possible physical, psychosocial, cultural, and spiritual health when undergoing, performing, or recovering from (or supporting a person's recovery from) surgical or endovascular procedures to create AVFs.

The reviewer remained attuned to potential inequities in access, use, and benefit, and whether distribution disparities or institutional biases and care processes may have contributed to these inequities in the context of surgical or endovascular procedures to create AVFs.²¹ Instead of using dimensions of equity as a coding framework, they used these elements as concepts to prompt sensitivity to data, allowing for the exploration, description, and reporting of how equity considerations relate to the perspectives on, expectations of, and experiences with these procedures.

To begin analysis, the reviewer first familiarized themselves with the studies by reading and rereading them in their entirety while making marginal notes and memos on initial thoughts and insights in a Microsoft Word document. These initial notes and memos included thoughts to promote reflexivity, descriptions prompting familiarization with the content and how it could be mapped onto the preliminary framework, and preliminary equity considerations related to perspectives on, expectations of, and experiences with surgical or endovascular procedures to create AVFs. The reviewer also annotated reflections on methodological considerations as prompted by the optimized CASP tool to facilitate critical appraisal.

The reviewer then used NVivo14²³ to begin line-by-line coding of the text or tables under the Findings sections of the included citations into categories of the preliminary framework. After engagement with the literature, the reviewer noted that experiences of accessing procedures to create AVFs did not discreetly fall into the initial categories of offering or deciding about nor performing and undergoing these procedures. The reviewer iteratively refined conceptualizations within the overarching categories of the preliminary framework to better reflect the experiences and perspectives of engaging with procedures to create AVFs reported in the literature. They inductively assigned codes to data falling under the overarching categories based on content and meaning and considered connections between these codes, resulting in additional subcategories further refining the preliminary framework. They mapped inductively identified equity considerations into the categories and emerging subcategories. The reviewer only coded text relevant to perspectives on,

expectations of, and experiences with accessing, offering, deciding about, undergoing, performing, and recovering from surgical or endovascular procedures to create AVFs. During the analysis, they remained attuned to connections between the subcategories, and these connections formed the basis of an outline from which they synthesized descriptive themes. Drawing on their growing familiarity with the dataset built through iterative readings, the reviewer returned to their analytical memos and the primary studies to further develop connections within the data and between the subcategories and categories. By doing so, they continued to refine the framework while writing the findings.

Reflexivity

To uphold qualitative best practice, before screening the citations and throughout the analytical process, the reviewer practised reflexivity by creating memos about their prior experiences, assumptions, and knowledge relevant to perspectives, expectations, and experiences of procedures to create AVFs.²⁴ They used these memos to reflect upon what understandings they might bring to their analysis, as well as those that might inform their analysis and challenge assumptions or interpretations not grounded in the data.

Summary of Evidence

Quantity of Research Available

A total of 214 citations were identified in the literature search. Following screening of titles and abstracts, 193 citations were excluded and 21 potentially relevant reports from the electronic search were retrieved for full-text review. Of these potentially relevant articles, 13 publications were excluded for various reasons, and 8 publications met the inclusion criteria and were included in this report. [Appendix 1](#) presents the PRISMA²⁵ flow chart of the study selection.

Summary of Study Characteristics

The characteristics of the included studies are summarized in the following, and additional details are provided in [Appendix 2](#).

Study Designs

The 8 included studies comprised 5 primary qualitative studies²⁶⁻³⁰ and 3 mixed-methods studies.³¹⁻³³ The authors of 4 reported methodologies underpinning their qualitative studies or the qualitative component of a mixed-methods study,³² 2 of which used qualitative description,^{26,32} 1 grounded theory,²⁸ and 1 interpretive description.²⁹ Griva et al.²⁷ and Woo et al.³⁰ did not report the methodologies underpinning their primary qualitative studies. Armstrong et al.³¹ similarly did not specify a methodology underpinning the qualitative component of their parallel mixed-methods study, and Rich et al.³³ did not explicitly report a design or methodology underpinning their overall mixed-methods study or its qualitative component. [Appendix 2](#) details the methods used for data collection and analysis.

Settings and Participant Characteristics

A total of 3 of the included studies were conducted in Canada^{26,29,32} and 1 in the UK,³¹ both of which have universal health care. There were 3 studies conducted in the US^{28,30,33} and 1 in Singapore²⁷ within the context of health care systems funded through a mix of private and public funding. [Appendix 2](#) provides additional information on the study settings.

The studies included the perspectives of a combined total of 250 participants. Sample sizes for the qualitative studies and qualitative component of the mixed-methods studies ranged from 10 participants³³ to 105 participants.²⁷ Participants included:

- 150 people living with ESRD, “advanced,” or stage 4 CKD who were deciding about or engaging with procedures to create vascular access for hemodialysis
- 23 family members or informal caregivers
- 77 health care providers, including,
 - 39 physicians specializing in nephrology (n = 16), surgery (n = 10), anesthesiology (n = 7), primary care (n = 3), or interventional radiology (n = 3)
 - 31 nurses caring for people with CKD who were deciding about or engaging with procedures to create vascular access for hemodialysis
 - 3 “kidney coordinators,” 1 “vascular access coordinator,” 1 social worker, 1 advanced practice provider, and 1 physician assistant.

Except for Armstrong et al.,³¹ all authors reported the demographic characteristics of the participants. Across studies clearly reporting participants’ age ranges, people with CKD and their families or informal caregivers’ ages ranged from 26²⁸ years to 84 years³⁰ and health care provider’s ages ranged from 37 years to 63 years.²⁸ The authors of only 2 studies^{29,32} including patients or their families reported the sex or gender of all included participants. Of the combined total of 27 patients and family members included in these studies, 51.9% (n = 14) were reported as female and 48.1% (n = 13) as male. The authors of only 1 study³² reported the sex or gender of all included health care providers (n = 7), all of whom were nurses. Of these providers, 85.7% (n = 6) were reported as female. None of the studies explicitly reported including patients, family members, or health care providers identifying as gender diverse.

Three of the included studies^{26,28,33} reported insights into their participants’ races or ethnicities, socioeconomic status, or levels of educational attainment. Together, these studies gathered perspectives from diverse participants, including people who were racialized persons; those who were experiencing underemployment, low income, or houselessness; and people who had not completed high school or experienced language barriers when navigating the health care system. None of the included studies explicitly reported including the perspectives of Indigenous people or members of the 2SLGBTQ+ community. [Appendix 2](#) reports details about participant characteristics.

Summary of Critical Appraisal

Of the 8 included studies, all were of moderate to high quality. Three includes a narrative summary and [Table 3](#) details the strengths and limitations of the included studies.

Findings

The included studies did not always separately report the perspectives of people with ESRD from those of people with stage 4 CKD. Therefore, the remainder of this report refers to people with CKD accessing or receiving health care for their condition as “patients.” The findings of this synthesis consist of 3 overarching categories, which include participants’ perspectives, experiences, and understandings regarding:

- offering or deciding about procedures to create AVFs, which includes experiences from contemplating offering or undergoing these procedures until choosing whether to perform or undergo them
- undergoing or performing procedures to create AVFs, which includes experiences from choosing to undergo or perform these procedures until they are complete
- recovering from procedures to create AVFs, which includes experiences in the period that followed the completion of the procedure until a health care provider decided and communicated to a patient and/or their family that either the AVF had matured, an additional unplanned procedure was required to facilitate the AVF’s maturation, or the AVF would never reach maturation.

The studies in this review primarily detailed perspectives and experiences with deciding about these procedures within the broader context of choosing between different types of vascular access. As a result, the findings likewise have a similar focus.

Offering and Deciding About Procedures to Create AVFs

Participants’ perspectives and experiences provided insight into different approaches used during decision-making. The context of decision-making (i.e., the conditions and circumstances that decision-making occurred within) influenced these approaches.

Decisional Approaches

The studies reported experiences with a spectrum of decisional approaches ranging from prescriptive to shared decision-making (SDM).^{26-30,32,33} Prescriptive approaches involved little or no consideration of the preferences and values of patients and/or their families.^{8,29} In contrast, SDM involved collaborative information exchanged between a health care provider, a patient, and/or their family. Within this SDM exchange:

- Health care providers shared balanced information about all available options and respective benefits and harms, and, in some cases, their insights or recommendations.^{26,32} Health care providers and patients expected this information to be *individualized* (i.e., relevant to the patient’s characteristics, life or living situation, and needs).^{26,32}

- Patients and/or their families shared information about their treatment priorities, goals, preferences, and concerns.^{26,30,32}

In SDM, health care providers shared information grounded in their breadth of exposure to vascular access; however, patients had the ultimate authority to decide.²⁶

The extent to which families were involved in SDM processes varied. Some patients valued considering the values and insights of their family members, while others valued their independence or perceived that their families may be burdened by involvement.^{27,30} Health care providers generally valued engaging family members, who could motivate patients to make decisions about dialysis and vascular access.²⁷

One study²⁸ reported the experiences of deciding about ESRD Life Plans (i.e., plans detailing all of the anticipated renal replacement therapy methods and vascular access procedures that a patient will receive throughout their life) and described experiences with complex SDM. Participants experienced SDM as complex when it involved:

- processing large volumes of novel clinical information
- advanced planning about long-range interventions
- involved numerous decision-makers, as was the case in a multidisciplinary SDM that included clinicians from various disciplines (e.g., general medicine, nephrology, and surgery) making decisions with a patient.²⁸

The perceived benefits of SDM included patients gaining knowledge of their condition, experiencing satisfaction with and investment in decisional processes and the choice made, and being better prepared for procedures to create AVFs.^{26,28} By participating in SDM, patients could gain a sense of control over their condition and its treatment, which could facilitate their coping with it.²⁹ However, health care providers perceived that SDM did not necessarily result in people with CKD making informed decisions grounded in sufficient knowledge of the benefits and risks of all possible options.³² These perceptions were informed by their experiences observing patients engaging in behaviours they believed indicated they did not understand relevant risks.³² As detailed in the next section, the context of decision-making influenced whether it was prescriptive, shared, or informed.

The Influence of the Context of Decision-Making on Decisional Approaches

Contextual factors influenced decisional approaches that, in turn, influenced patients' agency to access or refuse access to procedures to create AVFs.^{26-30,32,33} These factors tended to influence, and be influenced by, each other.

Values, Beliefs, and Attitudes

Health care providers who believed the best type of vascular access depended on a patient's characteristics, situation, and preferences tended to value and incorporate SDM into their practice.^{26,28,29} In contrast, providers upholding the traditional "fistula first" paradigm tended not to offer patients alternatives to procedures to create AVFs.²⁸ Some health care providers also perceived that the policies, laws, and performance measures grounded in "fistula first" paradigms could prevent them from providing patients with treatment alternatives.²⁸ In these contexts, some patients reported feeling pressured into undergoing procedures to

create AVFs.^{28,29} One patient reported that their provider discouraged them from seeking a second opinion by saying they would be willing to withdraw their care if they did so.²⁹

In other cases, providers' beliefs regarding their patients' eligibility for procedures to create AVFs informed their approach to decision-making.^{26,28} Some providers noted they did not offer these procedures to patients they perceived would not benefit from them, including older adults, people with multiple comorbidities, or people who did not obtain a functional AVF after receiving these procedures in the past.²⁶ Health care providers, patients, and their families also understood that procedures to create AVFs were not options for patients who urgently needed dialysis but did not already have vascular access.²⁶ In these cases, patients received a CVL, which did not require time for maturation.²⁶

Health care providers' beliefs regarding their patient's preferences and capacity for SDM also influenced decisional approaches.²⁸ Some providers reported believing that their patients either desired to be told what to do or lacked the capacity to engage in SDM, especially when making complex decisions like creating an ESRD Life Plan.²⁸ Yet, some patients, lacking treatment information, felt their providers did not value their preferences or overlooked the impact of vascular access decisions on their lives.^{26,28}

The literature provided insight into the perspectives and experiences of groups who may disproportionately face challenges in engaging in informed SDM due to their health care providers' beliefs and attitudes. Some providers perceived that using tools to assess decisional conflict could allow them to better appreciate their patients' perspectives.³² They perceived that doing so could moderate the effect of their own biases for a particular vascular access type.³² However, nurses anticipated that language barriers or cognitive impairment would prevent patients from being able to use and benefit from these tools.³² Additionally, Keller et al.²⁸ reported that some "non-White" [language used by study authors; hereon referred to as racialized] patients in the US felt they were less likely to receive information to inform dialysis decisions.³³

Timing

The included studies provided insight into how patients and health care providers timed vascular access discussions after a patient had gained knowledge about their CKD prognosis, accepted the imminent need for hemodialysis, and was ready to discuss vascular access.^{26,27,30}

Patients tended to prioritize deciding whether to undergo hemodialysis over decisions about vascular access.^{26,30} However, accepting the need for dialysis and, therefore, being ready to discuss and make decisions about it was difficult for some patients and their families.^{27,30} Barriers to having these discussions included patients not experiencing concerning symptoms or preferring to try alternative interventions such as traditional medicine or prayer.²⁷ Given its association with ESRD, other patients and their family members experienced mortality-related fears that made it challenging for them to accept the imminent need for dialysis, with 1 family member describing dialysis as "tantamount to doomsday."^{27,30} Others were concerned dialysis would be expensive (when not insured), lead to lost work or social opportunities, and cause discomfort or pain.²⁷ Patients also feared that their dialysis would cause a burden on their families.²⁷

Health care providers perceived their patients' avoidance of dialysis discussions as the most common barrier to timely access to procedures to create AVFs.²⁷ They generally valued carefully timing these delicate

discussions based on their patients' level of kidney function and prognosis, although they perceived both as difficult to predict.²⁶⁻²⁸ However, their perceptions regarding best timing differed. Some were concerned that discussing or making recommendations about dialysis too early would cause patients unnecessary emotional distress or a desire to avoid future care.²⁷ Others, however, perceived that having earlier conversations (i.e., before a patient reached stage 4 CKD) could allow a patient to "come to terms" with the possibility of needing hemodialysis and vascular access to be better able to make decisions in advance of needing it.²⁷ Regardless of when these conversations started, health care providers and patients valued them occurring across multiple time points.²⁶ Participants acknowledged that patients could have difficulty processing the complex and emotionally charged information required to inform decision-making about hemodialysis and vascular access.^{27,28,33} Multiple conversations would allow patients and their families to ask questions, communicate their preferences, and reevaluate decisions based on evolving preferences and experiences.^{26,28,32}

As previously detailed, patients urgently requiring dialysis before deciding whether to undergo procedures to create AVFs received a CVL.^{26,29} Romyn et al.²⁹ reported that abruptly and urgently starting hemodialysis with a CVL could be "extremely traumatic" for patients. Health care providers were motivated to re-engage patients in SDM following unexpected dialysis starts; however, they acknowledged the need to delay doing so.^{26,29} They perceived that patients in these contexts could experience information overload, an inability to concentrate due to illness, and difficulty accepting the reality of their situation.^{26,29} The timing at which they re-engaged a patient in SDM varied. Some reported reevaluating their patient's satisfaction with their CVL within weeks of starting dialysis; however, 1 patient reported that their provider did not present the option of undergoing a procedure to create an AVF until they had been on dialysis for a year.^{26,32}

Decision-Making Resources

The availability of human, structural, financial, and informational resources also influenced decisional approaches and the treatment options patients had access to. As described in the following sections, available resources could also influence the timing of decision-making.

Health Care Human Resources

A US-based study reported that health care providers and patients alike perceived a lack of health care human resources to support the complex, multidisciplinary SDM required to create ESRD Life Plans.²⁸ Patients reported feeling rushed in their interactions with their kidney care providers, which led to them not having "enough time to go over things."²⁸ One nephrologist acknowledged it took time to establish rapport with their patients, which they considered important for supporting SDM.²⁸ However, providers perceived themselves as overextended, pressured to see many patients, and lacking this time.²⁸ They also understood that establishing rapport to facilitate SDM took longer in the context of cultural or language challenges.²⁸ Additionally, they were concerned that already overworked staff would need additional training to support complex SDM processes.²⁸

Health care providers also reported that the organization of human health care resources supported or challenged multidisciplinary SDM.²⁸ They noted that already-existing multidisciplinary team meetings and shared electronic health records in large academic settings could facilitate interprofessional information

exchange.²⁸ However, they also anticipated that patients may experience less continuity of care across multiple specialists in these settings.²⁸ In contrast, providers working in smaller private practice settings reported having close working relationships with other clinicians because they relied on referrals.²⁸ They anticipated this would facilitate information exchange to support multidisciplinary SDM.²⁸

Financial Incentives and Resources

Clinicians in the US noted the lack of reimbursement policies for the potentially costly multidisciplinary SDM practices necessary for creating ESRD Life Plans.²⁸ They anticipated that this would decrease the appeal of implementing SDM, especially in smaller, private clinics without a large enough patient volume to rationalize substantial investments that result in commensurate returns.²⁸ Some patients perceived financial incentives as impacting their ability to engage in informed SDM.²⁸ Specifically, they believed dialysis centres prioritized and only offered in-centre dialysis over home dialysis (an option that could influence whether they would pursue procedures to create AVFs) to gain higher profits.²⁸

People living with poverty or houselessness also experienced barriers to accessing the predialysis care necessary to consider undergoing procedures to create AVFs in advance.³³ As 1 person who attributed their CKD to their substance use disorder described, “I’m still struggling with the things that got me to this point right here. The environment I’m in and the area I stay at, it’s just—it’s bad.”³³ Lacking reliable transportation or social support during illness could also prevent patients living with poverty or houselessness from attending their predialysis appointments.³³

Informational Resources

The information available in the decision-making environment influenced the extent to which patients and their health care providers engaged in prescriptive, shared, or informed decision-making about procedures to create AVFs and their opportunities to access them.^{26-30,32,33} While contemplating or reflecting on their decision-making, patients and their families reported using or potentially benefiting from information regarding:

- CKD, different renal replacement therapy options, and the benefits and risks associated with these options
- different types of vascular access and how they function
- details regarding procedures to create different types of vascular access, including whether these procedures require surgery
- details about what it would be like to use and live with different vascular access options, including potential complications or “setbacks” and how to manage them.^{26,27,29,33}

However, patients and their families reported that their health care providers did not always exchange this information.²⁶⁻²⁹ At times, clinicians reported a lack of evidence to determine optimal vascular access based on a patient’s characteristics.²⁸ Without available evidence, they perceived to be limited in the type and extent of information they could share or what they could recommend.²⁸ Alongside information verbally presented by their providers, patients also considered that collected through pamphlets, handouts, and hand-drawn images; the internet; and past personal experiences, or the experiences of other patients, family members, or

acquaintances.^{29,30,33} However, some perceived that the internet lacked centralized, trustworthy resources on vascular access.³⁰ Health care providers and patients also reported that misinformation derived from family, friends, and acquaintances could adversely impact patients' capacities to make informed decisions.^{27,30,33}

Some patients and their families had either undergone kidney replacement therapy counselling, received care from clinicians claiming to tailor information to their patients' needs, or had previous experience living with other chronic conditions or working in health care.^{26,27,30} Even these people, however, sometimes had limited knowledge or understanding of the information necessary to engage in informed SDM about undergoing procedures to create AVFs.^{26,27,30} Patients and their families reported that the clinical language used in the context of decision-making about dialysis was novel to them.³⁰ For this reason, some recommended that providers and decision tools use plain language whenever possible.²⁸ Furthermore, while most participants with limited English proficiency in a study conducted in a safety-net hospital in the US reported easily accessing interpreter services when needed, 1 found it challenging to communicate with their health care providers.³³ Of note, people with limited English proficiency in this study attributed their CKD progression, delayed ESRD diagnoses or care, and/or delayed access to procedures to create AVFs to their lack of insurance coverage, inconsistent primary care, limited access to medications, and perceived deficiency in medical knowledge.³³ However, Rich et al.³³ did not report whether these persons perceived these phenomena as related to language barriers or multiple and potentially intersecting barriers to predialysis care.

Considerations Deliberated During Decision-Making

To determine whether undergoing a procedure to create an AVF would allow them to achieve their treatment preferences and goals, patients considered:

- the trustworthiness of their health care providers and the nature of past experiences with vascular access
- the nature and anticipated short-term outcomes of procedures to create AVFs
- anticipated long-term outcomes of procedures to create AVFs.^{26-30,32,33}

Trust and Past Experiences

People with CKD were better able to overcome fears of dialysis and were more likely to choose to undergo procedures to create AVFs if they trusted a provider that recommended doing so.^{27,29,30} They tended to trust providers they considered a part of "their team" (i.e., those they were familiar and regularly interacted with) or those trusted providers had referred them to.^{29,30} Providers could foster trust by spending time with and carefully listening and providing thorough information to their patients; having familiarity and experience with creating or managing AVFs; and having trainees and staff that patients perceived as competent.^{29,30} Trust could also be broken or mistrust reinforced when patients experienced different providers giving contradictory advice or when they perceived clinicians as financially motivated.^{27,29} Some providers also perceived their patients as more trusting of advice given by physicians rather than other kidney care providers, such as care coordinators.²⁷

Patients also tended to heavily consider information collected through past personal experiences with vascular access or experiences they witnessed or learned about others having.^{27,29,32,33} In some cases, people trusted information derived from these experiences more than that from their health care providers.^{32,33} People with positive personal experiences with a vascular access modality other than an AVF valued maintaining the “status quo” and expressed low interest in procedures to create AVFs.^{26,32} Learning of others positively experiencing AVFs, however, could sway patients toward wanting to undergo procedures to create them.²⁷ However, those who had experienced complications with their vascular access, including an AVF, considered changing their type of vascular access to prevent further complications.^{26,29,30,32} Similarly, hearing about or witnessing others’ negative experiences with AVFs could deter people from wanting one.²⁶ Of note, negative experiences with AVFs also could reinforce mistrust in health care providers.²⁷

The Nature and Anticipated Short-Term Outcomes of Procedures to Create AVFs

The included literature did not discuss experiences deciding about EndoAVF. However, health care providers, patients, and their families understood surgical procedures to create AVFs as invasive with the potential to cause pain.^{27,28,33} Patients often reported fearing being “cut” and the possibility of experiencing pain or surgical complications.^{27,33} In some cases, these fears could lead them to decide not to undergo procedures to create AVFs.²⁷ Additionally, health care providers and patients deemed AVFs acceptable for long-term vascular access for hemodialysis;²⁶ however, they sometimes decided against these procedures when they anticipated needing hemodialysis for only a short period (e.g., when a patient had been approved for peritoneal dialysis or renal transplant).²⁶ As 1 patient described, “For me, it was never a decision or hard decision which [vascular access type] to choose...at the time I had been approved for transplant...It’s [AVF creation] a much more invasive procedure.”²⁶ One nephrologist also observed that “some older patients don’t even want to be bothered with surgeries,” although they did not explicitly postulate why this may be.²⁸

Anticipated Long-Term Outcomes of Procedures to Create AVFs

Patients and their families also considered the anticipated long-term outcomes of procedures to create AVF when contemplating whether to undergo them.^{27,30,32,33} Some people with CKD and their families valued the idea of having an AVF as a form of vascular access before needing dialysis to prevent the need for an emergency vascular access.²⁷ Others, however, feared that having a mature AVF would mean they would have to start hemodialysis earlier than necessary.²⁷ This fear could result in patients being hesitant to undergo procedures to create AVFs.²⁷

Patients also contemplated the anticipated success of procedures to create AVFs and the viability of AVFs (i.e., the potential for and ease of maintaining a functional AVF) relative to other vascular access options.^{27,32} Patients and their families understood that procedures to create AVFs sometimes did not result in a usable AVF and anticipated that AVFs would be more difficult to maintain than CVLs.^{27,31,32} Some patients specifically reported being concerned that an AVF would become blocked without use and worried about the extra care they perceived they would have to protect the AVF during daily activities or sleep.^{27,30,32} These concerns could contribute to patients’ hesitancy to undergo procedures to create AVFs.^{27,31,32} However, some health care providers perceived patients’ viability concerns as being secondary to their fear of dialysis.^{27,131}

They reported that when patients overcame dialysis fears, their viability concerns could be resolved or easily addressed through education.^{27 131}

Patients and their families also believed that, compared to a CVL, using an AVF for hemodialysis would be more difficult, time-consuming, and painful.^{27 131,32,33} Some developed these perceptions while observing other people with AVFs starting hemodialysis.^{27 131,32} One person, for example, observed that it took less time for nurses to start their dialysis through their CVL than it did for them to start a patient with an AVF on theirs.³² Similarly, witnessing others screaming while receiving needles to access an AVF could lead people to fear pain and desire to avoid pain.³² In some cases, this resulted in them forgoing procedures to create AVFs in favour of using a CVL, which would not require needles.³²

Other concerns relevant to patients' hesitancy included fears of bleeding following AVF use, infiltrations (i.e., blood leaking outside of the AVF to surrounding tissues), or aneurysms (i.e., bulging in an AVF that could lead to it clotting or bursting), and altered physical appearance.^{27,30,32} Of note, 1 person described choosing an AVG placed in the leg over an AVF placed in their arm, as they anticipated the AVG would be easier to hide.³⁰ In contrast, some patients in the included studies weighed the risk of infection less than other vascular access concerns. Specifically, some reported being aware that the risk of infection was greater with a CVL than with an AVF and that CVL-related infections could lead to death.³² However, when appraising themselves as capable of mitigating the risk of infection with a CVL (e.g., by following instructions to avoid getting it wet), some chose to forgo undergoing procedures to create AVFs.^{27,32}

Undergoing and Performing Procedures to Create AVFs

The experiences of undergoing and performing procedures to create AVFs reported in the literature were limited. The authors of 1 qualitative study²⁹ in British Columbia reported patients' experiences preparing for and accessing procedures to create AVFs after deciding to undergo them. Another mixed-methods study³¹ in the UK explored health care providers' practices related to anesthesia (i.e., medication used to block sensation or awareness temporarily) for surgical procedures to create AVFs. Neither of these studies reported patients' experiences during these procedures.

Undergoing

Given that procedures to create AVFs were planned, some patients reported feeling they had enough time to receive information from multiple sources to prepare for them.²⁹ However, even with time to prepare, patients and their families reported needing to take time off work and spend money and time travelling to urban centres to receive AVF appointments and creation procedures.²⁹ Patients living in rural communities in British Columbia especially experienced coordinating travel to these centres as a significant challenge that consumed up to 7 hours of their time.²⁹ Some patients depended on social assistance to accommodate this travel, while others reported paying out of pocket as they earned slightly above the qualifying income cut-offs.²⁹ Patients reported the need to accommodate inflexible scheduling by taking the first available appointment.²⁹ However, they frequently experienced prolonged wait times for AVF surgeries that could be rescheduled to accommodate more urgent cases.²⁹ This rescheduling resulted in patients losing additional money and time.²⁹

Accessing procedures to create AVFs could also be emotionally burdensome for patients and their families.²⁹ One patient, for example, described the stress of seeking social assistance to support travel-related expenses: “I fight like crazy with social assistance every time I need to go for surgery, to the point where I’m bawling my eyes out on the phone.”²⁹ Patients and their families living in rural communities also experienced fear for their safety while travelling long distances, often through dangerous weather conditions, to access the tertiary care centres where procedures to create AVFs would take place.²⁹ Finally, patients were grateful for and relied on emotional and practical support from their families and friends as they navigated procedures to create AVFs.²⁹ At the same time, however, they feared they had burdened those closest to them and sometimes withheld their emotions to avoid increasing this perceived burden.²⁹

Performing

The 3 different types of anesthesia health care providers discussed using for surgical procedures to create AVFs included:

- regional anesthesia [RA] nerve blocks, which involved an anesthetist injecting medication near a network of nerves to prevent a patient from feeling the region a surgeon would operate on
- local anesthesia [LA], which typically involved a surgeon injecting anesthesia directly at the site of the surgery
- general anesthesia [GA], which involved giving medications to temporarily alter a patient’s level of consciousness.³¹

Health care providers largely regarded surgeons as leading decision-making regarding anesthesia, although surgeons considered the preferences of their patients when doing so.³¹ In contrast, anesthetists were often only involved in decision-making on the day of surgical procedures to create AVFs, except in cases where a surgeon identified a patient as being “particularly high risk.”³¹ Although many anesthetists perceived surgeons as having the skills for deciding among LA, RA, and GA, some anticipated benefits to being involved earlier.³¹ One anesthetist reported that patients could be surprised, disappointed, or discontent when being told shortly before the procedure that the type of anesthesia the anesthetist planned to perform differed from what the surgeon told them they would receive.³¹

Participants reported practising either “LA/mixed” or “RA dominant,” wherein surgical teams typically used LA or RA, respectively.³¹ When providers in LA/mixed centres deemed LA would be inappropriate (e.g., when cases were “more complex”), they tended to use GA instead. They would, however, use RA when patients had comorbidities that prevented GA from being a suitable option.³¹ In RA-dominant centres, providers tended to avoid using GA.³¹

Some surgeons preferred performing procedures to create AVFs with LA because doing so did not require an anesthetist and was faster.³¹ Some preferring LA also noted they had positive surgical outcomes (e.g., creating functional AVFs at a rate exceeding nationally reported averages) and therefore were not inclined to change their practice.³¹ Other health care providers perceived RA as preferable, and noted that it prevented patients from moving their arms and could lead to blood vessel dilation.³¹ These providers perceived that these outcomes could make surgery easier to perform, potentially leading to better-quality AVFs.³¹ Anesthetists sometimes advocated for using RA following their engagement with supporting trial evidence.³¹

This advocacy resulted in RA becoming standard practice within their centre once surgeons positively experienced it.³¹ Of note, health care providers unanimously supported the idea of a randomized control trial providing evidence to support the uptake of the types of anesthesia most likely to lead to improvements in AVF function.³¹ Despite its perceived practical and clinical benefits, however, a lack of skilled anesthetists, limited financial resources to compensate for increased use of anesthetists' or operating room time, and limited time to accommodate RA (e.g., due to the volume of cases scheduled) could challenge or hinder RA use.³¹

Health care providers also acknowledged that their patients' characteristics and preferences influenced the type of anesthesia used.³¹ Anesthetists reported being flexible and planning based on patients' preferences.³¹ Providers understood GA as being associated with adverse clinical outcomes (such as mortality) and unsuitable for patients with certain comorbidities.³¹ However, they reported that some patients, particularly those with high anxiety, prefer or need GA so they would be asleep during procedures for creating AVFs.³¹ Some, however, also perceived that patients were generally more receptive to being awake during procedures after hearing of other patients' positive experiences.³¹ One anesthetist commented that patients who had multiple procedures to create AVFs reported positive experiences with RA because, for example, they appreciated not being able to feel their whole arm rather than just the surgical site during the procedure.³¹

In cases where they used RA, anesthetists chose a specific type of nerve block based on their skill, the anticipated location of surgery on the arm, and their perception of the benefits and risks of each in the context of their patient's characteristics.³¹ Most favoured using "supraclavicular blocks."³¹

Recovering From Procedures to Create AVFs

Only 1 included study²⁹ (set in British Columbia) explicitly reported the perspectives and experiences of recovering from procedures to create AVFs. It found that patients feared their AVFs would not mature for hemodialysis as they recovered from these procedures and that "pain consistently occurred with AVFs from creation onwards."²⁹ The authors of this study also reported that people experienced continuous support from their families as essential during hospitalization for procedures to create AVFs.²⁹ However, they did not detail the specific support families provided during the recovery period.

Limitations

This review has limitations that may reduce the trustworthiness and relevance of some of its findings. The reviewer deemed all included citations to be of moderate to high quality. However, none of the included citations explicitly reported on the perspectives and experiences of EndoAVF. Additionally, the findings of most included studies focused broadly on decision-making regarding vascular access for hemodialysis while providing limited insight into the perspectives and experiences of undergoing, performing, and recovering from procedures to create AVFs. The relative novelty of EndoAVF and recent shifts away from the "fistula first" paradigm and toward individualized vascular access plans may explain these phenomena.^{10-12,34} However, as a result of the focus of the included studies, this review provides limited insights into the

perspectives and experiences that may be relevant to inform implementation decisions about procedures to create AVFs generally and EndoAVF specifically.

Additionally, the included studies reported on the perspectives and experiences of people receiving care in Canada, people who are racialized, people of various educational backgrounds, and people living with low income, poverty, houselessness, or language barriers. However, as none of the studies included patients perspectives and experiences, this review is missing experiences and considerations relevant and important to Indigenous people. Of note, Indigenous people in Canada are more likely to experience ESRD, require dialysis, and encounter difficulties accessing kidney care due to systemic and intersecting factors such as racism, colonization, and discrimination.^{35,36} Their perspectives and experiences would have added important insights relevant to decisions about procedures to create AVFs in Canada.

Further limitations relate to the methods used to complete this rapid review. A single reviewer screened and selected citations, conducted the analysis, and reported the results, all within a rapid time frame. These methods increased the likelihood of the reviewer missing eligible citations or analytical findings and limited their ability to produce an in-depth analysis.

Conclusions and Implications for Decision- or Policy-Making

This best-fit framework synthesis of 8 studies focused on the perspectives, expectations, and experiences of adults with ESRD, their families, and their health care providers regarding accessing, offering, deciding about, undergoing, performing, and recovering from procedures to create AVFs for hemodialysis.

Approaches to making decisions about offering or undergoing procedures to create AVFs ranged from prescriptive to SDM. Prescriptive decision-making involved little or no consideration of patient values and preferences. These approaches, for example, tended to stem from providers adhering to historical “fistula first” paradigms or assuming their patients did not desire SDM or lacked the capacity to engage in it. In contrast, SDM involved the collaborative exchange of information between health care providers, patients, and/or their families, followed by patients deciding which option they trusted would align with their treatment values and goals. The benefits of SDM included patients having increased knowledge of their condition, satisfaction with the decision, and a sense of control, which could facilitate coping. However, contextual factors influenced the extent to which patients could engage in SDM, which in turn influenced their agency to access or refuse access to procedures to create AVFs. The timing and frequency of discussions about dialysis and procedures to create AVFs also influenced decisional approaches. Limitations in human, structural, financial, and informational resources could also lead to prescriptive decision-making. People who are racialized and those experiencing poverty, houselessness, or language barriers may experience disproportionate barriers to access and engaging in timely and informed SDM about procedures to create AVFs and the benefits resulting from this engagement. This, in turn, may place them at an increased risk of experiencing uninformed decision-making or unplanned dialysis starts with CVLs, the latter of which patients could experience as traumatic.

The findings in this review corroborate the barriers to SDM in hemodialysis vascular access practice and the potential solutions that Murea et al.³⁷ previously detailed and proposed. Decision-makers seeking to support SDM in their jurisdictions may consider:

- reevaluating health care performance measures or reimbursement models grounded in the “fistula first” paradigm
- supporting health care curriculums that train providers to support SDM and effectively use tools to elicit patient preferences
- interventions to build or retain human, structural, and financial resources that allow kidney care providers to establish rapport with their patients to support them with their dialysis concerns and initiate vascular access discussions early and over multiple encounters
- supporting research to better understand AVF treatment preferences and outcomes
- interventions to address inequities that some groups may experience in accessing and benefiting from timely, informed SDM and the agency to access (or refuse access to) procedures to create AVFs. These may include interventions that provide health care providers with support in challenging racist assumptions that may lead to them offering people who are racialized fewer treatment options. They may also include interventions that address social, financial, and language barriers to predialysis care. More research exploring these barriers and their intersections may better support decision-making.

The included studies also reported that patients weigh multiple factors when deciding whether to undergo procedures to create AVFs. Patients were more likely to undergo procedures to create AVFs if a provider they trusted recommended them. However, patients often weighed the nature of past experiences with vascular access more heavily than health care providers’ recommendations. Furthermore, both patients and their health care providers considered surgical procedures to create AVFs to be invasive. Patients’ fears of being cut or experiencing pain or complications from these procedures could hinder their desire to engage in them. Patients also considered the anticipated outcomes of these procedures when deciding whether to undergo them. Concerns about an AVF not maturing or being easily maintained and worries about anticipated needle-related pain could prevent patients from wanting AVFs. Additional concerns hindering patients’ engagement in procedures to create AVFs included those regarding the perceived risk of bleeding, infiltrations, and aneurysms, and the anticipated impact an AVF would have on their physical appearance. The relative risk of infection between AVFs and CVLs was of lesser concern to patients.

These findings corroborate those detailed in the extant literature.^{15,18,38} Considering these concerns, decision-makers would benefit from considering research investigating whether:

- EndoAVF is associated with higher rates of AVF maturation and durability (which is beyond the scope of this review)
- patients may find EndoAVF more appealing or less distressing (e.g., due to its noninvasive nature and reduced risk of surgical scarring) compared to open surgical procedures.³⁴

However, decision-makers may also consider that Casey et al.¹⁸ and Fielding et al.³⁸ reported that patients with AVFs experience accessing them with needles as a necessary but painful process that can cause

distressing changes to appearance (e.g., due to scars or bruising) and feelings of vulnerability. Having EndoAVF as an option may not address these concerns and burdens, re-emphasizing the relevance of patients engaging in informed SDM that considers their treatment goals and preferences.

This review also found that patients and their families experience challenges when preparing for and accessing procedures to create AVFs. Some felt they had adequate information to prepare for the procedures; however, they experienced financial and time-related burdens to accessing them, exacerbated by prolonged surgical wait times and rescheduling. While some received social assistance to cope with the financial burdens of accessing care, income cut-offs limited access to this support. Accessing procedures was also emotionally burdensome for patients and their families, including for those experiencing stress when attempting to access social assistance and those living in rural areas who faced safety concerns during travel. More research is needed to understand whether and how implementing EndoAVF, which providers can conduct in office-based practices rather than operating rooms, could improve barriers to accessing procedures to create AVFs, including for those in rural areas.³⁴

Finally, 1 included study³¹ reported that surgeons often led decision-making regarding anesthesia, with consideration for patient preferences. Some surgeons may prefer using LA for its speed and lack of need for an anesthetist; however, others may prefer RA if they perceive that it will make surgery easier to perform and potentially result in a better-quality fistula. Anesthetists who are inspired by evidence suggesting the clinical benefits of RA could encourage surgeons to adopt it; however, challenges like limited skilled human resources, insufficient funding, and time could prevent the adoption of RA despite its perceived benefits. Patient characteristics and preferences also influenced the type of anesthesia used during procedures to create AVFs. Recovery from these procedures involved fears related to the possibility of an AVF not maturing and pain. Considering these findings, decision-makers would benefit from having research that explores whether and how implementing EndoAVF could impact the resources available to support using RA during surgical AVF procedures (e.g., by freeing up surgical resources). Decision-makers also may benefit from research exploring how these procedures impact the experience of postprocedural fear and pain.

This qualitative review exploring the experiences of people engaging with procedures to create AVFs for hemodialysis provides valuable insights into the considerations, values, and concerns most important to them. It provides a nuanced understanding of barriers to accessing, using, and benefiting from these procedures, including whether disparities in experiencing these barriers relate to historical, social, institutional, and environmental disadvantage or discrimination. These understandings are useful for informing funding and implementation decisions regarding these procedure in Canadian jurisdictions with consideration for these values, concerns, barriers, and possible inequities.

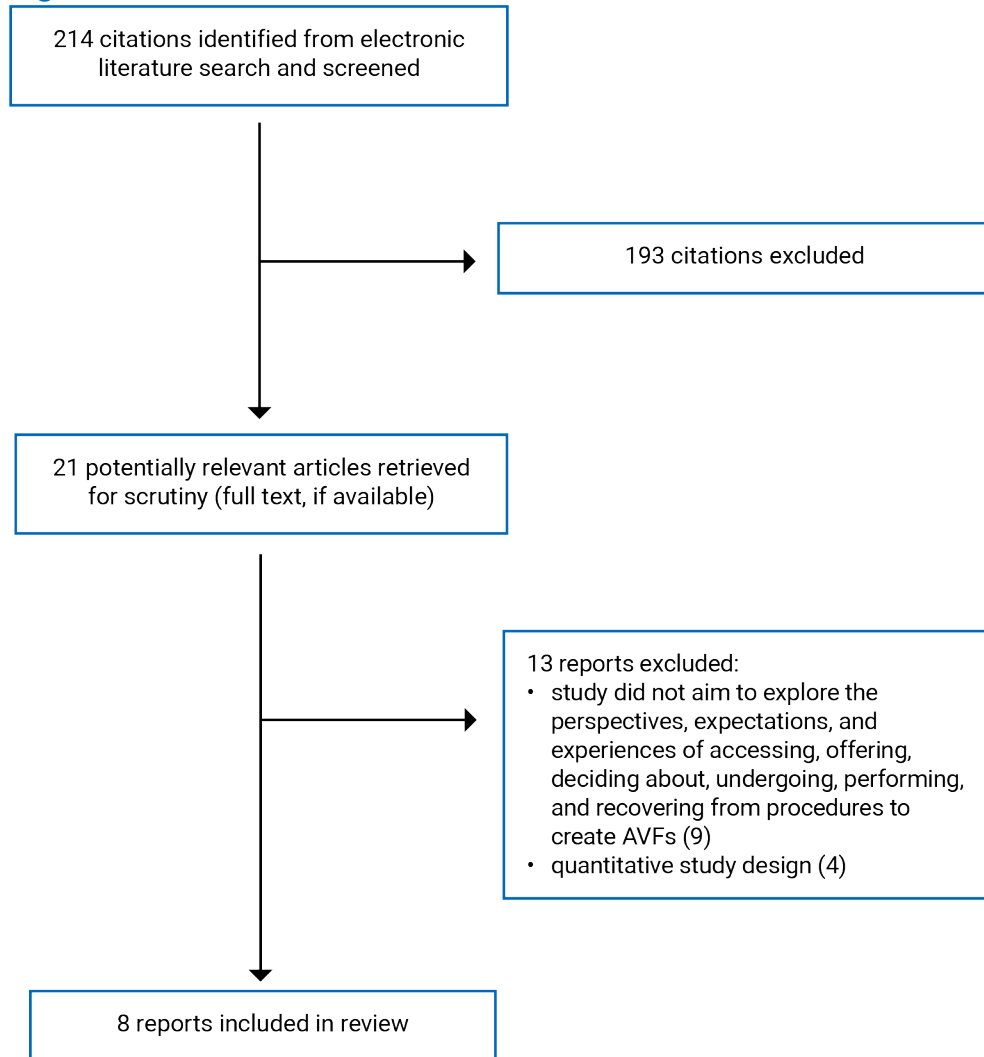
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Appendix 1: Selection of Included Studies

Figure 1: Selection of Included Studies



AVF = arteriovenous fistula.

Appendix 2: Characteristics of Included Publications

Table 2: Characteristics of Included Publications

Author, year, country	Aims or objectives ^a	Methodology or design, sampling, data collection method, data analysis method	Setting	Inclusion criteria and sample size	Participant characteristics
Armstrong et al. (2020) ³¹ UK	To investigate current anesthesia practice and professional views on anesthesia practice for AVF formation surgery in the UK	Parallel mixed-methods study design; methodology underpinning qualitative component NR Purposeful, convenience, maximum variation, and snowball sampling techniques described; “data collection was driven by the intention of reaching saturation” Semistructured interviews (ranging from 35 to 80 minutes) conducted over telephone Constant comparison method	Participants in the qualitative component were from 10 NHS Trusts (centres) that perform vascular access surgery, including large regional transplant centres (n = NR) and small district general hospitals (n = NR) across England and Wales	19 clinicians, including 7 anesthetists (from 6 centres), 7 vascular access and renal nurses (from 7 centres) 3 surgeons (from 1 centre), and 2 nephrologists (from 2 centres) involved in AVF surgery or pathways leading up to it	Participant characteristics in the qualitative component NR
Elliot et al. (2023) ²⁶ Canada	To explore how patients receiving HD, their caregivers, and clinicians integrate principles of SDM when engaging in vascular access discussions	Qualitative description Purposeful, maximum variation sampling; sampling proceeded “until data saturation was attained” Semistructured interviews (20 to 60 minutes) conducted face-to-face (n = NR) or by telephone (n = NR) Thematic analysis	5 adult, outpatient, in-centre HD units in the Alberta Kidney Care-South renal program	English-speaking patients aged 18 years and older receiving maintenance in-centre or home dialysis for > 3 months via any established vascular access type (n = 19); their adult informal caregivers or support persons (n = 2); and HD clinicians (n = 21), including nephrologists (n = 8), HD nurses (n = 7), and	<i>Patients and caregivers</i> Age: 4.8% (n = 1) < 40 years; 57.1% (n = 12) 40 to 64 years; 38.1% (n = 8) ≥ 65 years Sex or gender: 71.4% (n = 15) male; female NR; gender diverse NR Education: 23.8% (n = 5) some high school; 9.5% (n = 2) high school diploma; 14.3% (n = 3) college diploma; 47.6% (n = 10) university degree;

Author, year, country	Aims or objectives ^a	Methodology or design, sampling, data collection method, data analysis method	Setting	Inclusion criteria and sample size	Participant characteristics
				vascular access nurses (n = 6)	<p>4.8% (n = 1) did not answer</p> <p>Income or employment status:</p> <p>Annual household income—23.8% (n = 5) < 30,000 CAD; 9.5% (n = 2) 30,000 to 59,999 CAD; 4.8% (n = 1) 60,000 to 99,999 CAD; 14.3% (n = 3) > 100,000 CAD; 47.6% (n = 10) did not respond</p> <p>Employment status—38.1% (n = 10) retired; 38.1% (n = 8) other (disability, student, not employed); 14.2% (n = 3) full time</p> <p>Race or ethnicity: NR</p> <p>Initial vascular access type (patients): 21.1% (n = 4) AVF; 0% AVG; 79.0% (n = 15) CVC^b</p> <p>Current vascular access type (patients): 52.6% (n = 10) AVF^c; 0% AVG; 47.4% (n = 9) CVC^b</p> <p><i>Clinicians</i></p> <p>Age: 14.3% (n = 3) < 40 years; 76.2% (n = 16) 40 to 64 years; 9.5% (n = 2) ≥ 65 years</p> <p>Sex or gender: 71.4% (n = 15) female; male NR; gender diverse NR</p> <p>Time in clinical practice: 9.5% (n = 2) ≤ 5 years; 9.5% (n = 2)</p>

Author, year, country	Aims or objectives ^a	Methodology or design, sampling, data collection method, data analysis method	Setting	Inclusion criteria and sample size	Participant characteristics
					6 to 10 years; 23.8% (n = 5) 11 to 20 years; 33.3% (n = 7) 21 to 30 years; 23.8% (n = 5) > 30 years
Griva et al. (2020) ²⁷ Singapore	To synthesize the perspectives of patients with CKD (newly initiated HD patients and those currently deciding on access), family members, and health care providers on the issue of dialysis preparation and identify factors that facilitate or hinder timely access creation	Qualitative study; methodology NR Purposeful, convenience, and maximum variation sampling; “recruitment stopped when no new topics emerged in 2 consecutive interviews” Semistructured interviews (30 to 60 minutes) conducted in-person Thematic analysis	2 government-funded hospitals in Singapore serving patients from diverse demographic backgrounds The authors note that there is a fee for service for kidney care in Singapore, although subsidies are available to accommodate patients’ socioeconomic circumstances	Patients aged 21 years or older who had attended at least 1 KRT counselling session and had stage 4 CKD and were deciding about vascular access (n = 30) or stage 5 CKD and were on HD for < 6 months (n = 38); family members (n = 19) of people with stage 4 CKD involved in decisions around HD; kidney health care providers (n = 9), including kidney coordinators (n = 3), nurses (n = 3), kidney doctors (n = 2), and a social worker (n = 1)	<i>Patients and family members</i> Age (patients) ^d : 66.2 years (+/- 9.9 years), stage 4 CKD; 61.0 years (+/- 9.3 years), HD on AVF 59.1 years (+/- 7.5 years), HD on catheter Age (family members) ^d : 56.9 years (+/- 7.2 years) Sex or gender (patients): 64.7% (n = 44) men; female NR; gender diverse NR Sex or gender (family members): 21.1% (n = 4) men; female NR; gender diverse NR Education: NR Income or employment status: NR Race or ethnicity (patients): 70.6% (n = 48) Chinese; 7.4% (n = 5) Indian; 20.6% (n = 14) Malay; 1.5% (n = 1) other Race or ethnicity family members: 73.7% (n = 14) Chinese; 26.3% (n = 5) Malay Current vascular access type (patients on HD): 52.6% (n = 20) catheter; 47.4% (n = 18)

Author, year, country	Aims or objectives ^a	Methodology or design, sampling, data collection method, data analysis method	Setting	Inclusion criteria and sample size	Participant characteristics
					AVF Access type already created (patients with stage 4 CKD): 66.7% (n = 20) none; 33.3% (n = 10) AVF <i>Clinicians</i> Age ^d : 37.9 years (+/- 8.2 years) Sex or gender: 44.4% (n = 4) male; female NR; gender diverse NR Race or ethnicity: 66.7% (n = 6) Chinese; Indian (NR); 22.2% (n = 2) Malay; 11.1% (n = 1) other Time in clinical practice: NR
Keller et al. (2023) ²⁸ US	To determine the barriers and facilitators to ESKD ^e LP implementation from the perspective of relevant patients and clinicians	The authors reported using “qualitative methods with grounded theory methodological orientation” Purposeful, maximum variation sampling and snowball sampling; the authors reported reaching data saturation after 8 interviews, but did not report that saturation guided sampling decisions Semistructured interviews (40 to 60 minutes) conducted through video conferencing (n = NR) or telephone (n = NR)	Patients were recruited across the US through the American Association of Kidney Patients, social media, and the UCLA vascular access surgery practice Included participants resided in a combined total of 13 states Clinician practice settings: 38% (n = 8) academic; 33.3% (n = 7) private practice; 14.3% (n = 3) private practice with academic affiliation; 9.5%	Patients (n = 11) aged 18 years and older with a diagnosis of advanced kidney disease (i.e., predialysis, dialysis-dependent, or with a kidney transplant) who could speak English or Spanish, understand the consent process and give consent, and were not institutionalized at the time of the study. Care partners (n = 2) were interviewed alongside patients if they were highly involved in	<i>Patients and caregivers</i> Age: Mean 50 years (range 26 to 77 years) Sex or gender: 30.8% (n = 4) male; female NR; gender diverse NR Education: 46.2% (n = 6) some college; 30.8% (n = 4) college; 23.1% (n = 3) graduate Income or employment status: 23.1% (n = 3) retired; 30.8% (n = 4) not working; 7.7% (n = 1) part-time; 38.5% (n = 5) full

Author, year, country	Aims or objectives ^a	Methodology or design, sampling, data collection method, data analysis method	Setting	Inclusion criteria and sample size	Participant characteristics
		<p>The authors cited papers related to constructivist grounded theory, Strauss and Corbin's grounded theory, and inductive thematic analysis when reporting their analytical approach^f</p>	<p>(n = 2) Veteran Affairs; 4.8% (n = 1) hospital-employed</p>	<p>the patient's care and available and willing to be interviewed.</p> <p>Clinicians (n = 21) currently caring for patients with kidney disease, including: physicians specializing in surgery (n = 7), nephrology (n = 4), primary care (n = 3), and interventional radiology (n = 3); an Advanced Practice Provider (n = 1), a physician assistant (n = 1); a vascular access coordinator (n = 1), and a nephrology nurse (n = 1)</p>	<p>time</p> <p>Race or ethnicity: 15.4% (n = 2) Asian; 15.4% (n = 2) Black; 7.7% (n = 1) Hispanic; 7.7% (n = 1) "multiple"; 53.8% (n = 7) white</p> <p>Initial and current vascular access type if on HD: NR</p> <p><i>Clinicians</i></p> <p>Age: Mean 48 years (range 37 to 63)</p> <p>Sex or gender: 47.6% (n = 10) male; female NR; gender diverse NR</p> <p>Time in clinical practice: NR</p>
<p>Murray et al. (2016)³² Canada</p>	<p>To explore uncertainty related to changing vascular access from an existing CVC^b to a graft or fistula, from the perspective of people with stage 5 CKD^e and nurses</p>	<p>Prospective intervention^g study with a mixed-methods triangulation design; qualitative description informed the methods for the qualitative component</p> <p>Purposeful sampling</p> <p>Interview structure, length, or medium NR explicitly, although the authors reported using an interview guide</p> <p>Content analysis</p>	<p>A large academic quaternary care hospital in Toronto, Canada that provides HD care to > 250 patients</p>	<p>Patients (n = 16) with stage 5 CKD^e who had CVCs, were receiving HD in the HD unit, were candidates for AVF creation, could communicate in English; and were deemed mentally and physically able to participate by their care team; HD clinic nurses (n = 7) with > 5 years of experience in HD</p>	<p><i>Patients</i></p> <p>Age: Median 61.5 years (range 32 to 75 years)</p> <p>Sex or gender: 50% (n = 8) female; 50% (n = 8) male; gender diverse NR</p> <p>Health literacy and education: NR</p> <p>Income or employment status: NR</p> <p>Race or ethnicity: NR</p> <p>Current vascular access type: 100% (n = 16) CVC^b; 18.8% (n = 3) previously had an AVF</p> <p><i>Clinicians</i></p>

Author, year, country	Aims or objectives ^a	Methodology or design, sampling, data collection method, data analysis method	Setting	Inclusion criteria and sample size	Participant characteristics
					Age: Mean 37.5 years (range NR) Sex or gender: 85.7% (n = 6) female; 14.3% (n = 1) male; gender diverse NR Race or ethnicity: NR Experience in HD unit: 23 years ^h
Rich et al. (2017) ³³ US	To identify and describe factors associated with incident CVC ^d use among a diverse, low-income, multilingual HD population at 1 urban safety-net hospital, with the goal of informing regional and national AVF placement initiatives pertinent to safety-net populations	Mixed-methods study (specific design NR explicitly); methodology for qualitative component NR Purposeful convenience sampling; the authors noted “based on agreement upon the adequate detail and variety of data within each theme, the authors agreed that saturation has been reached,” but did not specify whether data saturation guided sampling Structure of interviews NR explicitly, although the authors reported that a single interviewer “performed all interviews using a standard list of questions”; length and medium of interviews NR Content analysis	An outpatient HD unit affiliated with an urban safety-net hospital	People with ESRD ^e (n = 10) who had initiated HD at the study setting within the past year and did not have psychiatric comorbidities or dementia	Age: Mean 54.4 years (range 39 to 65 years) Sex or gender: 80% (n = 8) male; female NR; gender diverse NR Education: NR explicitly for qualitative component; however, the findings indicated that participants interviewed included people with limited English proficiency, which could adversely impact their ability to access, understand, and use health information Income or employment status: NR explicitly for qualitative component; however, findings indicated that participants interviewed included people experiencing homelessness and poverty Race or ethnicity: NR explicitly for qualitative component;

Author, year, country	Aims or objectives ^a	Methodology or design, sampling, data collection method, data analysis method	Setting	Inclusion criteria and sample size	Participant characteristics
					<p>however, findings indicated that participants interviewed included racialized persons</p> <p>Initial vascular access type: 50% (n = 5) AVF; 50% (n = 5) CVC^b</p>
<p>Romyn et al. (2015)²⁹ Canada</p>	<p>To understand the experiences of patients on HD who utilized and transitioned from a CVC^b to an AVF</p>	<p>Interpretive description</p> <p>Purposeful, maximum variation sampling; the authors reported that “attention to data saturation” informed sampling decisions</p> <p>Semistructured interviews (30 to 90 minutes) conducted face-to-face</p> <p>The authors reported using constant comparative data analysis</p>	<p>Participants had received hemodialysis within the IHA, 1 of 6 provincial, geographically-based health authorities providing health services to the southern interior of British Columbia</p>	<p>People (n = 11) aged 19 years and older on HD who had utilized and transitioned from a CVC^b to an AVF and received hospital/tertiary or community-based hemodialysis treatments within the IHA</p> <p>Patients received their HD in either urban (n = 5), rural (n = 5), or tertiary (n = 1) care settings</p>	<p>Age: Mean 53.4 years (range 31 to 84 years)</p> <p>Sex or gender: 54.5% (n = 6) female; 45.5% (n = 5) male; gender diverse NR</p> <p>Education: NR</p> <p>Income or employment status: NR</p> <p>Race or ethnicity: NR</p> <p>Current vascular access type: 100% (n = 11) had transitioned from CVC^b to an AVF</p>
<p>Woo et al. (2021)³⁰ US</p>	<p>To describe vascular access-related decision-making, from the patient perspective, in patients who have already chosen HD as their renal replacement modality and identify areas where physicians can improve this experience</p>	<p>Qualitative study; methodology NR</p> <p>Purposeful sampling; interviews “were conducted until saturation was reached, where no new themes were identified”</p> <p>Semistructured interviews (mean 45 minutes, range 29 to 89 minutes) conducted in-person</p> <p>Thematic analysis</p>	<p>Participants were recruited from the vascular surgery practice at a single academic institution</p>	<p>English-speaking adults (n = 15) with ESKD^e requiring HD</p>	<p>Age: Mean 57 years (range 22 to 85 years)</p> <p>Sex or gender: 46.7% (n = 7) males; females NR; gender diverse NR</p> <p>Education: NR</p> <p>Income or employment status: NR</p> <p>Race or ethnicity: 33.3% (n = 5) Black; 33.3% (n = 5) white; 26.7% (n = 4) Asian; 6.7% (n = 1) Hispanic</p>

Author, year, country	Aims or objectives ^a	Methodology or design, sampling, data collection method, data analysis method	Setting	Inclusion criteria and sample size	Participant characteristics
					Current vascular access type: 33.3% (n = 5) graft; 26.7% (n = 4) tunneled catheter; 20% (n = 3) fistula

AVF = arteriovenous fistula; AVG = arteriovenous graft; CKD = chronic kidney disease; CVC = central venous catheter; ESKD = end-stage kidney disease; ESRD = end-stage renal disease; HD = hemodialysis; IHA = Interior Health Authority; KRT = kidney replacement therapy; LP = Life Plan; NHS = National Health Service; NR = not reported; SDM = shared decision-making; UCLA = University of California, Los Angeles.

Note: All nonintegers have been rounded to the nearest 10th. Apart from reporting on the study aims and designs, this table only reports information relevant to the qualitative component of the included mixed-methods studies.

This table has not been copy-edited.

^aThe aims and objectives of the studies are reported in the words of their authors.

^bThe terms "CVC" and central venous line can be used interchangeably.

^c3 patients with recent AVF creation continued to dialyze via their CVC due to fistula immaturity at the time of their interview.

^dThe authors did not specify the member of central tendency reported here.

^eThe terms "ESKD," "ESRD," and "stage 5 CKD" can be used interchangeably.

^fThe authors mapped inductively-derived codes onto an existing framework, an analytical method that does not typically align with grounded theory approaches.

^gNurses received education on recommendations from best practice guidelines for decision support in CKD from a nurse practitioner and then provided decision support to participants experiencing decisional conflict, as indicated by their score on the SURE screening tool.

^hThe authors did not report whether this value represents a measure of central tendency or the years of combined experience among participants.

Appendix 3: Critical Appraisal of Included Publications

Note that this appendix has not been copy-edited.

Narrative Summary of the Findings of the Critical Appraisal

None of the authors of the included studies clearly stated the philosophical assumptions underpinning their study. The authors of 2 studies,^{26,32} however, reported using a pragmatic methodology agnostic to particular worldviews (i.e., qualitative description). The authors of 4 studies^{27,30,31,33} also did not report a methodology underpinning their qualitative study or the qualitative component of their mixed-methods study. Keller et al.²⁸ reported using “qualitative methods with grounded theory methodological orientation” but do not specify the type of grounded theory used. Most citations in their methods section relate to constructivist grounded theory; however, the authors also cite Strauss and Corbin’s grounded theory and inductive thematic analysis papers.²⁸ The authors of 3 studies^{26,28,29} reported using methods that do not typically align with their cited overall methodological approach and/or analytical approach. Congruence between philosophical underpinnings, methodologies, and methods enhances the credibility of a study’s findings, indicating that researchers have the knowledge and skills necessary to conduct qualitative inquiry.³⁹

Chosen qualitative methodologies, when reported, were appropriate for addressing the stated objectives of all 9 studies.

All authors explicitly reported methods used to recruit and select their participants and used a purposeful sampling approach appropriate for gaining access to relevant experiential experts. Except in 1 study,³¹ all authors reported the characteristics of participants they interviewed. This enhanced the theoretical transferability of the study’s findings by providing information allowing readers to compare settings and participants to their own context.

Except in 2 studies,^{32,33} all authors explicitly detailed methods of data collection. The authors of 3 studies³¹⁻³³ did not report sufficient detail to show the methods used for data analysis were rigorous and/or aligned with the cited approach.

All authors provided a statement of ethical approval. The authors of only 2 studies^{27,30} explicitly reported engaging in reflexive practices and the nature of the relationship between researchers and participants. The authors of all studies explicitly reported methods to enhance the credibility of their findings.

Table 3: Critical Appraisal Using the Optimized CASP Tool¹⁹

Strengths	Limitations
Armstrong et al. (2020)³¹	
<ul style="list-style-type: none"> The authors clearly stated the study’s aims and supported its relevance via the introduction section A qualitative approach was appropriate, given the aim of the qualitative component of the mixed-methods study 	<ul style="list-style-type: none"> The authors did not report the ontological or epistemological assumptions underpinning their study While the authors reported their overall study as having a parallel mixed-methods design, they did not report a

Strengths	Limitations
<ul style="list-style-type: none"> • The authors provided a statement of ethical approval for the qualitative component of their study • The author clearly described methods used for data collection • They reported strategies to improve the credibility and rigour of their research • They explicitly reported their findings, which were supported via participant quotations, and discussed their findings in relation to the research aim and literature • They discussed their study's limitations 	<p>methodology underpinning their qualitative component</p> <ul style="list-style-type: none"> • The authors did not report demographic information about the participants included in their qualitative component • The authors did not provide sufficient detail regarding their analytical steps to allow for assessing the congruence between the constant comparison analytical approach cited and methods used • They authors did not explicitly report how they integrated quantitative and qualitative data in their parallel mixed-methods study • The authors did not report engaging in reflexive practices or the nature of their relationship between the researchers and participants, although they reported that “individuals known to the research group were initially approached”
Elliot et al. (2023)²⁶	
<ul style="list-style-type: none"> • The authors clearly stated the study's aims and supported its relevance via the introduction section • While the authors did not report the ontological or epistemological assumptions underpinning their study, the pragmatic methodology they selected (i.e., qualitative description) is agnostic to particular world views • A qualitative approach and the stated methodology (qualitative description) were appropriate, given the study's aims • The authors provided a statement of ethical approval • They clearly described the methods used for data collection and analysis, although content analysis, rather than thematic analysis, would have aligned more with their qualitative description methodology • The authors reported strategies to improve the credibility and rigour of their research • They explicitly reported their findings, which were supported via participant quotations, and discussed their findings in relation to the research aim and literature • They discussed their study's limitations 	<ul style="list-style-type: none"> • The authors used methods informed by opposing epistemological assumptions without reporting justification for doing so. For example, the creators of the inductive thematic analysis approach cited have critiqued the epistemological assumption that data saturation is advisable and achievable in the context of their approach • The authors did not report engaging in reflexive practices or the nature of the relationship between the researchers and participants
Griva et al. (2020)²⁷	
<ul style="list-style-type: none"> • The authors clearly stated the study's aims and supported its relevance via the introduction section • A qualitative approach was appropriate, given the study's aim • The authors provided a statement of ethical approval • The authors clearly described methods used for data collection and analysis • The authors reported engaging in reflexive practices and the nature of the relationship between the researchers and participants • The authors reported strategies to improve the credibility and rigour of their research 	<ul style="list-style-type: none"> • The authors did not report the ontological or epistemological assumptions underpinning their study • The authors did not report a methodology underpinning their study • The authors did not cite the particular “inductive thematic analysis” approach used, making it difficult to assess alignment between their chosen approach and reported methods

Strengths	Limitations
<ul style="list-style-type: none"> • They explicitly reported their findings, which were supported via participant quotations, and discussed their findings in relation to the research aim and literature • They discussed their study’s limitations 	
Keller et al. (2023)²⁸	
<ul style="list-style-type: none"> • The authors clearly stated the study’s aims and supported its relevance via the introduction section • A qualitative approach was appropriate, given the study’s aims and philosophical underpinnings • The authors provided a statement of ethical approval and discussed ethical considerations • They clearly described the methods used for data collection and analysis • The authors reported strategies to improve the credibility and rigour of their research • They explicitly reported their findings, which were supported via participant quotations, and discussed their findings in relation to the research aims and literature • They discussed their study’s limitations 	<ul style="list-style-type: none"> • The authors did not report the ontological or epistemological assumptions underpinning their study • The authors reported using “qualitative methods with grounded theory methodological orientation” but do not specify the type of grounded theory used. Most citations in the methods section relate to constructivist grounded theory; however, the authors also cite Strauss and Corbin’s grounded theory and inductive thematic analysis papers • While some reported analytical methods aligned with grounded theory approaches, the authors reported mapping inductively-derived codes onto an existing framework (i.e., one not created through inductive coding data obtained during the study), which does not align with a grounded theory approach • The authors did not report engaging in reflexive practices or the nature of the relationship between the researchers and participants
Murray et al. (2016)³²	
<ul style="list-style-type: none"> • The authors clearly stated the study’s aims and supported its relevance via the introduction section • A qualitative approach and the cited qualitative methodology (i.e., qualitative description) were appropriate, given the aim of the qualitative component of the mixed-methods study • The authors did not report the ontological or epistemological assumptions underpinning their study; however, the pragmatic methodology they selected is agnostic to particular world views • The authors provided a statement of ethical approval • The cited approach to data analysis (i.e., content analysis) aligned with qualitative description methodology • The authors reported strategies to improve the credibility and rigour of their research • They explicitly reported their findings, which were supported via participant quotations, and discussed their findings in relation to the research aim and literature • They discussed their study’s limitations 	<ul style="list-style-type: none"> • The authors did not detail the structure, length, or medium of interviews or how they derived themes or concepts from their codes • The authors did not report engaging in reflexive practices or the nature of the relationship between the researchers and participants
Rich et al. (2017)³³	
<ul style="list-style-type: none"> • The authors clearly stated the study’s aims and supported its relevance via the background section • A qualitative approach was appropriate, given the aim of the qualitative component of the mixed-methods study 	<ul style="list-style-type: none"> • The authors did not report the ontological or epistemological assumptions underpinning the study • The authors did not report a methodology underpinning the qualitative component of the study

Strengths	Limitations
<ul style="list-style-type: none"> • The authors provided a statement of ethical approval • The authors reported strategies to improve the credibility and rigour of their research • They explicitly reported their findings, which were supported via participant quotations, and discussed their findings in relation to the research aim and literature 	<ul style="list-style-type: none"> • The authors did not explicitly detail the structure of their interviews (i.e., structured or unstructured) or how they derived themes from their codes • The authors did not report engaging in reflexive practices or the nature of the relationship between the researchers and participants • The authors focused their discussion of study limitations on the quantitative component of the study. They noted the qualitative component's small sample size limited its generalizability to other safety-net populations. However, qualitative inquiry typically aims for transferability rather than large sample sizes and generalizability.
Romyn et al. (2015)²⁹	
<ul style="list-style-type: none"> • The authors clearly stated the study's aims and supported its relevance via the introductions section • A qualitative approach and the stated methodology (i.e., interpretive description) were appropriate, given the study's aims • The authors provided a statement of ethical approval and discussed ethical considerations • The authors clearly described the methods used for data collection and analysis, which aligned with their stated methodology • They explicitly reported their findings, which were supported via participant quotations, and discussed their findings in relation to the research aim and literature • They discussed their study's limitations 	<ul style="list-style-type: none"> • The authors did not report the ontological or epistemological assumptions underpinning their study • The authors reported using data saturation as informing sampling decisions; however, the creator of interpretive description has critiqued the epistemological assumption that data saturation is advisable and achievable in the context of their approach • The authors did not report engaging in reflexive practices or the nature of the relationship between the researchers and participants • They reported strategies to improve the credibility and rigour of their research; however, the creator of interpretive description has critiqued the epistemological assumption that member checking is advisable in the context of their approach
Woo et al. (2021)³⁰	
<ul style="list-style-type: none"> • The authors clearly stated the study's aims and supported its relevance via the introduction section • A qualitative approach was appropriate, given the study's aims • The authors provided a statement of ethical approval and discussed ethical considerations • They clearly described the methods used for data collection and analysis, and their methods of data analysis aligned with their cited analytical method • The authors provided details about how they engaged in reflexive practices and the nature of the relationship between the researchers and participants • The authors reported strategies to improve the credibility and rigour of their research • They explicitly reported their findings, which were supported via participant quotations, and discussed their findings in relation to the research aim and literature • They discussed their study's limitations 	<ul style="list-style-type: none"> • The authors did not report the ontological or epistemological assumptions underpinning their study • The authors did not report a methodology underpinning their study

CASP = Critical Appraisal Skills Programme; NR = not reported.

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