https://dspace.org/

Nephrologists perspectives on communication and decisionmaking regarding technique survival in peritoneal dialysis An international qualitative interview study

Benedicta Yudianto; Allison Jaure; Jenny Shen; Yeoungjee Cho; E et al ...

BMJ PUBLISHING GROUP
https://hdl.handle.net/10539/41743
WOS

Downloaded from a DSpace repository. https://dspace.org/

BMJ Open

Nephrologists' perspectives on communication and decision-making regarding technique survival in peritoneal dialysis: an international qualitative interview study

Benedicta Yudianto,[1,2] Allison Jaure ,[1,2] Jenny Shen,[3] Yeoungjee Cho,[4,5] Edwina Brown,[6] Jie Dong ,[7] Tony Dunning,[8] Rajnish Mehrotra,[9] Saraladevi Naicker,[10] Roberto Pecoits-Filho,[11] Jeffrey Perl,[12] Angela Yee-Moon Wang ,[13] Martin Wilkie ,[14] Chandana Guha ,[1,2] Nicole Scholes-Robertson,[1,2] Jonathan Craig,[15] David Johnson,[4,5] Karine Manera [1,2]

To cite: Yudianto B, Jaure A, Shen J, *et al*. Nephrologists' perspectives on communication and decision-making regarding technique survival in peritoneal dialysis: an international qualitative interview study. *BMJ Open* 2024;**14**:e082184. doi:10.1136/bmjopen-2023-082184

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (https://doi.org/10.1136/bmjopen-2023-082184).

Received 16 November 2023
Accepted 21 February 2024

Check for updates

© Author(s) (or their employer(s)) 2024. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

For numbered affiliations see end of article.

Correspondence to
Karine Manera;
karine.manera@sydney.edu.au

ABSTRACT

Objectives Peritoneal dialysis (PD) allows patients increased autonomy and flexibility; however, both infectious and non-infectious complications may lead to technique failure, which shortens treatment longevity. Maintaining patients on PD remains a major challenge for nephrologists. This study aims to describe nephrologists' perspectives on technique survival in PD.

Design Qualitative semistructured interview study. Transcripts were thematically analysed.

Setting and participants 30 nephrologists across 11 countries including Australia, the USA, the UK, Hong Kong, Canada, Singapore, Japan, New Zealand, Thailand, Colombia and Uruguay were interviewed from April 2017 to November 2019.

Results We identified four themes: defining patient suitability (confidence in capacity for self-management, ensuring clinical stability and expected resilience), building endurance (facilitating access to practical support, improving mental well-being, optimising quality of care and training to reduce risk of complications), establishing rapport through effective communications (managing expectations to enhance trust, individualising care and harnessing a multidisciplinary approach) and confronting fear and acknowledging barriers to haemodialysis (preventing crash landing to haemodialysis, facing concerns of losing independence and positive framing of haemodialysis).

Conclusion Nephrologists reported that technique survival in PD is influenced by patients' medical circumstances, psychological motivation and positively influenced by the education and support provided by treating clinicians and families. Strategies to enhance patients' knowledge on PD and communication with patients about technique survival in PD are needed to build trust, set patient expectations of treatment and improve the process of transition off PD.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ Our study provides novel findings on the nephrologists' perspectives on technique survival in peritoneal dialysis (PD) and the decision-making surrounding transition off PD.
⇒ This study involves nephrologists with extensive experience on PD from various geographical regions.
⇒ The results of this study could inform nephrologists and other healthcare professionals on initiatives to enhance treatment longevity in PD.
⇒ We acknowledge that PD nurses, who play a crucial role in the management of PD patients, were not included in the study.
⇒ The interviews were conducted in English only, with majority of participants practising in high-income countries.

INTRODUCTION

Peritoneal dialysis (PD) is a home-based dialysis modality which offers several benefits for adult patients including autonomy, confidence[1] and affordability,[2 3] leading to greater treatment satisfaction[4 5] and health-related quality of life compared with haemodialysis.[6 7] Patients receiving PD also have a better preservation of residual kidney function compared with patients receiving haemodialysis.[8]

Despite the benefits of PD, its overall uptake has been low and the proportion of all dialysis patients treated with PD has been declining globally,[9] particularly in some high-income countries.[10] The decision-making to commence patients on PD is influenced by physician's preference, patient comorbidities[11] or patient's ability to access adequate

resources to commence PD.[12] Long-term technique survival on PD is generally poor, with data from the Australia and New Zealand Dialysis and Transplant Registry showing that rates of PD technique survival decrease from 88% at 6 months of treatment to 16% at 5 years.[13]

Several strategies to improve technique survival in PD have been reported. These strategies include the prevention of PD-related infections by providing prophylactic antibiotics before catheter placement, training patients on regular catheter exit-site care and utilisation of biocompatible solutions to better preserve peritoneal membrane integrity and residual kidney function.[14] Some studies suggested that clinicians' experience also plays a role in improving technique survival.[15] Despite the efforts to enhance PD longevity, fluid overload, peritonitis, inadequate dialysis and other complications remain as major contributors to technique failure. Predicting the risks of technique failure and providing the optimal care during transition to haemodialysis remain challenging and stressful for both clinicians and patients.[16 17] Abrupt transition to haemodialysis is also being associated with higher patient mortality and longer hospitalisations.[14 15 18]

Clinicians' perspectives on what contributes to technique survival in PD along with strategies to extend treatment longevity and improve the transition process from PD have not been studied. Understanding healthcare professionals' perspectives on technique survival in PD is crucial in optimising the strategy for transition planning.[19] This study aims to describe nephrologists' perspectives on strategies to promote technique survival in PD, emphasising on the psychosocial aspects which influences PD longevity, techniques to develop effective communication with patients and decision-making surrounding transition off PD.

METHODS

We used the Consolidated Criteria for Reporting Qualitative Health Research[20] to guide the reporting of this study.

Participant selection

Nephrologists with experience in providing care for adults receiving PD were eligible to participate. Potential participants were identified and contacted by email through the networks of the investigators. Participants were purposively selected through snowballing (participants nominated by interviewees) to capture a range of age, sex, years of clinical experience, size of PD units and geographic location.

Data collection

The interview guide was developed based on discussion among the research team (online supplemental file 1). The interview questions focused on topics including technique survival in PD, long-term risks of PD and the transition process off PD. KM, who is a trained qualitative researcher, conducted face-to-face or teleconference semistructured interviews with participants from April 2017 to November 2019. No prior relationship was established with participants prior to study commencement, and no one apart from the interviewer and interviewee was present during the interviews. 30% (n=10/30) of participants had face-to-face interviews, while the remainder were conducted via teleconference. Field notes were taken by the interviewer and were used to inform probing questions used in subsequent interviews. Participant recruitment ceased when data saturation was reached. All interviews were audio recorded and transcribed verbatim. Transcripts were made available to participants on request. However, no participants requested their transcripts following the interview and no participants were repeat interviewed.

Data analysis

The transcripts were analysed using principles of grounded theory[21] and line-by-line inductive coding by BY in HyperRESEARCH software (V.3.3; ResearchWare). Initial concepts were generated and further classified into themes and subthemes. To enhance the comprehensiveness of the thematic framework, we used investigator triangulation, whereby the concepts, preliminary themes and subthemes were discussed and revised with KM and AJ.

Patient and public involvement

This study was conceived, designed, conducted and revised with the input of patients and caregivers with lived experience of dialysis. Three of the coauthors and investigators of this study are patients who have received PD and/or caregivers of children who have received PD. The need and design of this study was informed by the Standardized Outcomes in Nephrology Initiative, which has engaged over 10 000 patients, caregivers, clinicians, researchers and policy-makers for better outcomes across the spectrum of kidney disease.

RESULTS

31 nephrologists were contacted and 30 participated from April 2017 to November 2019. One nephrologist declined due to retirement. Participant characteristics of the 30 nephrologists across 11 countries are provided in table 1. The average duration of interviews was 30 min. We identified four major themes: defining patient suitability, building endurance, establishing rapport through effective communication and confronting fear and acknowledging barriers to haemodialysis (figure 1). Selected quotations to illustrate each theme are depicted in table 2 and recommendations for practice are shown in table 3.

Defining patient suitability

Confidence in capacity for self-management

Participants mentioned that patient characteristics including age, body habitus, mobility and cognitive ability

Table 1 Participant characteristics

Characteristics	N (%)
Sex	
Male	19 (63)
Female	11 (37)
Age group (years)	
30–39	8 (27)
40–49	10 (33)
50–59	7 (23)
≥60	5 (17)
Country	
USA	8 (27)
Australia	6 (20)
UK	4 (13)
Hong Kong	3 (10)
Canada	3 (10)
Thailand	1 (3)
Uruguay	1 (3)
Colombia	1 (3)
Japan	1 (3)
New Zealand	1 (3)
Singapore	1 (3)
Number of years PD experience (years)	
≤10	7 (23)
11–20	11 (37)
21–30	8 (27)
>30	3 (10)
Size of PD unit (patients)	
1–50	3 (10)
51–100	15 (50)
101–200	4 (13)
201–300	3 (10)
>400	5 (17)

PD, peritoneal dialysis.

were important factors affecting technique survival in PD—'probably about 20% of (kidney failure) patients are inappropriate for PD'. As 'patient selection is very critical', participants emphasised the importance of assessing patients' abilities to perform exchanges appropriately and maintaining good hygiene. Some participants also acknowledged the importance of patients' family members/carers to support patients in managing PD at home.

Ensuring clinical stability

Participants mentioned that technique survival in PD was affected by patients' peritoneal membrane function, residual kidney function, the development of ultrafiltration failure, patients' comorbidities and complications from the treatment. Patients' comorbidities, such as 'declining vision or manual dexterity issues' in patients with diabetic retinopathy, were seen to hinder both the clinicians' and patients' desires to prolong PD, especially in patients who are lacking support at home. Complications from treatment, such as peritonitis, herniation and encapsulating peritoneal sclerosis (EPS), were recognised as some of the main hurdles in continuing patients on PD.

Expected resilience

Some participants recognised that PD placed a significant burden on a patient's life and that 'it is more than extremely hard just to be a dialysis patient'. Some participants believed that patients were more resilient when they have a good 'quality-of-life (outside) dialysis' as it can be a powerful source of empowerment for continuing PD. Patients' 'commitment to continuing (PD)' was considered important, while their resilience was deemed necessary to avoid burnout due to the 'relentless nature of doing PD'.

Building endurance

Facilitating access to practical support

Participants mentioned that providing services to help patients with their activities of daily living could 'offload other burdens from patients' and 'give them more time to do their PD'. Nephrologists in South America, Australia and New Zealand also noticed the financial burden associated with PD, such as 'costs involved going to the clinics' and considered it important to provide financial support to patients. In contrast, one participant from the UK emphasised that it was a 'big advantage' to have assisted PD in their country for patients who are 'having difficulties in performing the (entire) PD (procedure)'.

Improving mental well-being

Participants believed that protecting mental well-being of PD patients helped preserve patients' motivations and positive attitudes towards PD. Peer support groups where patients receiving PD could 'find support' and 'connect with one another' addressed the 'isolation' of treatment. Clinicians also mentioned the importance of family support and home environment to maintain patients on PD. They further highlighted the need to provide support for the caregivers of patients receiving PD, as they are 'doing the bulk of PD' and 'carer burnout' is common. One participant from Thailand mentioned that having large households where multiple members were available to assist in treatment could prevent caregiver burnout. To preserve patients' and their caregivers' emotional well-being, participants suggested ways to relieve the burden of PD and restore patients' normal life, such as by allowing flexible prescribing in which patients are allowed to have a few days break from PD or by providing short-term transfer to haemodialysis.

Optimising quality of care

Participants described how they modified treatment prescriptions to achieve the best clinical outcomes and

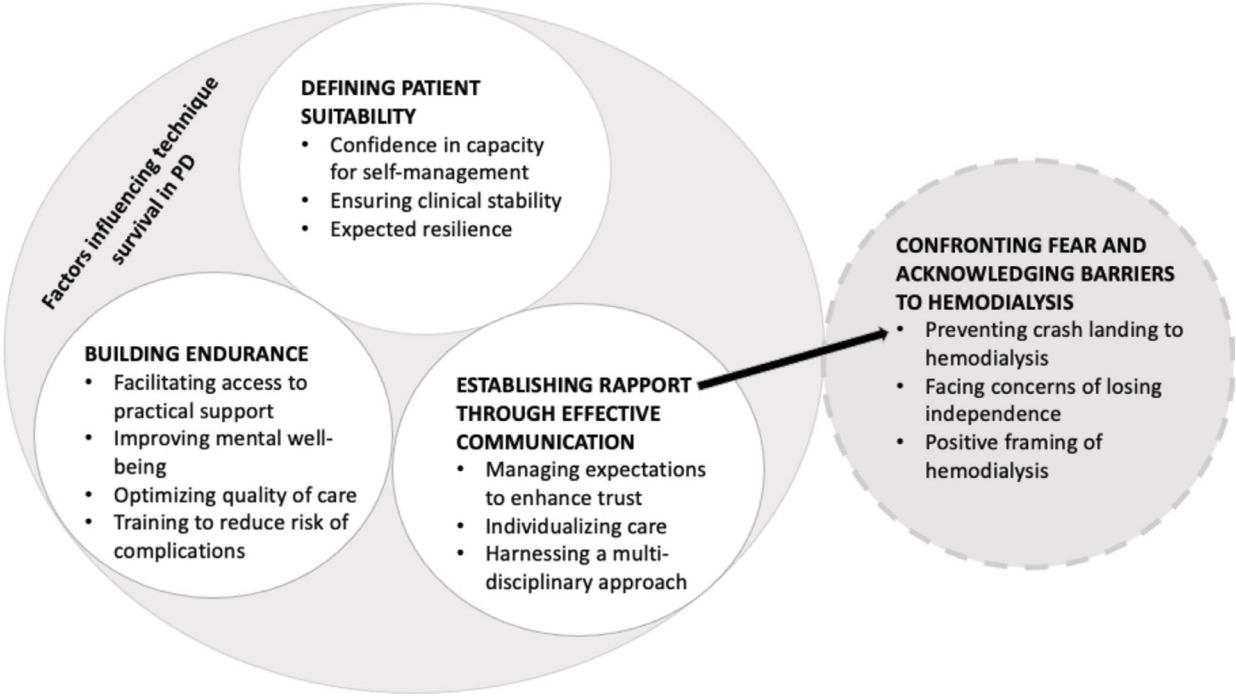

Figure 1 Thematic schema of nephrologists' perspectives on technique survival in peritoneal dialysis (PD). Technique survival in PD may depend on patient clinical stability (peritoneal membrane function and residual kidney function), practical and psychological support available for them, patient education to prevent infection and nephrologists' abilities to optimise patients' longevity of PD. Developing effective communication by harnessing a multidisciplinary approach may also improve technique survival in PD, as it can guide patients' expectations and adapt PD regimens based on patients' priorities. Some patients are reluctant to change to haemodialysis, which might be caused by fear of losing independence and negative perceptions against haemodialysis. Smooth transition off PD might be achieved when clinicians were able to establish rapport with patients and manage patients' expectations regarding treatment longevity.

minimise side effects for patients. Some participants noted differences in clinicians' abilities to maintain patients on PD, stating that 'not all nephrologists are created equal in their ability to keep patients on PD' and there is a 'large amount of variability in how (nephrologists) are trained'. Participants also believed that technique survival in PD could be enhanced by improving general practitioners' knowledge on the management of comorbidities in patients with PD and the 'management of patients with PD in the hospital'.

Training to reduce risk of complications

Peritonitis was identified as a common cause of termination of PD treatment—'if we can reduce peritonitis rate, patients can survive on PD for a longer period'. Participants considered that patient training should be started early and reinforced regularly to optimise patients' techniques in performing PD to prevent infection. Some participants mentioned that the training should not only involve nurses but also the nephrologists who 'need to get a bigger role in educating patients', and patient education should be tailored to each patient's circumstances.

Establishing rapport through effective communication

Managing expectations to enhance trust

Nephrologists asserted that it is essential to be transparent to patients about their PD trajectory and possible complications from long-term PD treatment, as it would enable patients to set realistic expectations for treatment longevity and help to build patients' trust. Most nephrologists defined 5 years as long-term PD. Most participants communicated the desire to maintain their patients on PD for as long as possible; however, they also expressed concerns about complications that might arise from such a decision, for example, the development of severe/recurrent peritonitis and EPS. Even though nephrologists believed in the importance of providing realistic expectation of PD longevity to their patients, most of them recognised the challenges in doing so as 'it is completely variable from patient to patient' and 'you cannot know for certain exactly what's going to happen'. At times, they were 'struck by how we often get it wrong', hence prompting them to 'never say a time' or 'be honest and say not every patient has a smooth run'.

Individualising care

Nephrologists believed that patients 'deserve some choice' in determining their treatment regimen and schedule and emphasised the importance of using a 'shared decision-making approach' to choose and tailor treatment based on their patient's preference and individual circumstances. Most participants reiterated that clinicians should 'reassess our patients' needs' and 'see

Table 2 Selected quotations to support each theme

Theme	Selected quotations
Defining patient suitability	
Confidence in capacity for self-management	In the CKD phase and pre dialysis phase, we screen these patients to see if they are capable of doing self-dialysis. I think that screening takes patients out who probably are not confident number one, or we don't have confidence in them that they could carry out dialysis, their intelligence, their understanding of the dialysis. (Australia) In some ways the more motivated patients that you know who you can actually talk into doing PD at home, who are more committed to doing it at home and being independent, where there's other people who just want to turn up this to satellite dialysis, have dialysis done for them, and really take no responsibility for their care. (Australia)
Ensuring clinical stability	We find that some patients are just prone to chronic constipation and PD can be very problematic or the catheter one work very well, even if you reposition it and things, and they'll often end up with poor drains…they may have a technique failure for that. (United Kingdom)
Expected resilience	Well, the first thing is to get the right patient. If you have the right patient and the patient is empowered and he or she really likes the therapy, the possibility to have burnout or lack of adherence is very, very low. (Colombia) I think it's more than extremely hard just to be a dialysis patient. I think that the number of demands we put on them are challenging. (United Kingdom)
Building endurance	
Facilitating access to practical support	A social worker might be able to set up for other home services. Meal services a couple of days a week, or bathing or cleaning or other things that might offload other burdens from the patient so that it'll give them more time to do their peritoneal dialysis. (Canada)
Improving mental well-being	We tend to find that patients with good support networks are the ones that are best able to cope with their illness and are able to manage it without seeing it as an overwhelming burden. (Canada)
Optimising quality of care	Some of our patients get used to it and would like to stay on PD…we will convert them to APD (automated PD) and optimise the dialysis adequacy as far as possible until the limit. (Hong Kong) Not every nephrologist does a lot of peritoneal dialysis. I still have to explain things to other nephrologists who have been out longer than I have, because they're so used to hemo and they don't go to PD conferences and they don't know how to treat peritonitis. Some of them don't even ask me, they just wing it and then I find out about it later. So yes, there's a large amount of variability in how people are trained. (United States)
Training to reduce risk of complications	We try to diminish this risk with education. Patient education and reforming and retraining, in order to lower on the peritonitis rate in the country. (Uruguay) I tell them that this [complication from PD] can be delayed if you do the proper techniques. So that's an ongoing discussion that we have at the start with the patient, even before they start PD. But then when they're getting PD, we stress that, and we stress that again. (United States)
Establishing rapport through effective communication	
Managing expectations to enhance trust	Giving people that realistic expectation of what the average time on therapy is and what they might expect from this technique is something that I think is really important. (Australia)
Individualising care	We are with the patient and the families, we try to choose which therapy is better for the patient… The patient… will take the decision with the family because some families do not want to do the therapy. (Thailand) Each person is different. I think somebody try to know the person and try to adapt the peritoneal dialysis to that particular person. Everybody is different from the other and so I think that that's the magic recipe. (Uruguay)
Harnessing a multidisciplinary approach	I think it's a team approach. We have a social worker on our team. We have nurses. I think a consolidated message from all members of the treatment team and consolidated support from all members of the treatment team is helpful. (Canada) I think that's why they open up more with nurses because nurses have a better connection with them and the physician will change more often. (Canada)
Confronting fear and acknowledging barriers to haemodialysis	
Preventing crash landing to haemodialysis	We've had a few patients who just won't switch at all until they've had the decision taken out of their hands by another event. (United Kingdom) I think that's another area that we need to study better. How do we identify patients who are at higher risk of failing PD, and developing appropriate transition plans for them as opposed to them crashing from PD to HD. (United States)

Continued

Table 2 Continued

Theme	Selected quotations
Facing concerns of losing independence	The biggest issue…is fear of loss of their autonomy. They've been independent mostly …doing their dialysis. They've built it into their life routine… work routine. When we transition them to in-centre hemodialysis, we're talking about them coming to hospital three times a week. For patients who are used to being independent and in control of their dialysis, I think it's a very difficult transition for them to accept. (Canada)
Positive framing of haemodialysis	The problem is when you initiate the patient and then you tell him that the hemodialysis is not good for him or for her. That's a really big mistake that some people do trying to get more people onto PD… So the patient thinks if you change to hemodialysis (he/she) is going to die or something. (Colombia) The biggest thing to make it better is to really not allow people to bad mouth hemodialysis… I think that's really what shoots us in the foot most of the time, if somebody says all these great things about PD and then bad mouths in-centre hemo, and now it's time to switch and you're screwed. (United States)

what suits them the best' to optimise patients' quality of life on PD. Tailoring treatment based on each patient's situation was thought to increase patient's adherence and treatment satisfaction, which could positively influence treatment longevity.

Harnessing a multidisciplinary approach

Participants believed that involvement of other healthcare professionals, especially nurses, was critical for patient–clinician communication to improve technique survival in PD. Nurses were considered to 'have (a) better connection with patients' and 'are the main point of contact' when patients had any concerns about their treatment. Some participants asserted the importance of having a strong team that can provide 'consolidated messages' and 'listens to patients and spends time with them' for early identification and management of issues. Some participants also mentioned ways to encourage patients to dialysis modality transition when PD is no longer a

Table 3 Suggestions to improve PD longevity and enhance transition off PD

Domain	Suggested strategies and actions
Practical support	Provision of affordable/free domestic services to help patients with their activities of daily living.
	Provision of financial support for patients.
	Referral of patients to assisted PD service if required.
Psychosocial support	Referral of patients to peer support groups/peer networks.
	Involvement of psychologists and social workers in patient care.
	Provision of appropriate respite of PD for patients and caregivers, such as PD-free days or short-term haemodialysis.
Strategies to increase PD longevity	Regular retraining on aseptic techniques to reduce infection.
	Utilisation of biocompatible solution with low glucose concentration, if appropriate.
	Preservation of residual kidney function, such as by avoiding nephrotoxin medication.
	Conversion of patients to Automated PD (APD) from Continuous Ambulatory PD (CAPD) before switching to haemodialysis.
Strategies to establish effective communication	Discussion at PD commencement regarding expected treatment longevity and the likelihood of modality changes in the future.
	Promotion of shared decision-making by incorporating patient priorities and circumstances in treatment regimens.
	Engagement with nurses and allied healthcare professionals to enhance consistency of messaging for patients.
Strategies to promote smooth transition off PD	Early identification of vulnerable populations at risk of PD failure.
	Provision of education, information and support about haemodialysis from both clinicians and patients who are receiving haemodialysis.
	Avoidance of negative labelling of haemodialysis by both clinicians and patients who are receiving haemodialysis.

PD, peritoneal dialysis.

viable therapy, such as by 'ongoing persuasion' from the clinicians and a 'whole team approach where everybody is giving the same message'.

Confronting fear and acknowledging barriers to haemodialysis

Preventing crash landing to haemodialysis

Participants noted that some patients were 'extremely reluctant' to transition off PD and would 'do anything they can to avoid transition', despite attempts to persuade and warn patients about the potential complications of long-term PD—'(they) persisted with PD, somewhat against my advice'. Participants acknowledged the importance of early recognition of patients at high risk of transferring off PD to prevent 'crash landing' and expressed frustration when patients required an 'urgent transfer' to haemodialysis when 'they have had the decision taken out of their hands by another event', such as peritonitis, as it 'leads to (patients) not having a good outcome'. Nephrologists expressed that the transition off PD could be improved when 'it is not an abrupt thing' and when 'the introduction of haemodialysis occurs within a familiar and supportive environment' is provided.

Facing concerns of losing independence

One participant mentioned that 'it must be frightening having end-stage kidney disease' and thought that patients are hesitant to change modalities as they were 'scared of what is unknown around the corner' and 'fear loss of their autonomy'. Nephrologists observed that most patients were 'independent and in control of their dialysis' but when they moved to haemodialysis, they must 'rely on somebody else to do it for them' and 'end up on someone else's schedule, not on their schedule', which could be 'a very difficult transition to accept'. Most nephrologists expressed that patients 'know they are going to lose quality of life' on haemodialysis as they had to 'come to hospital three times a week' and 'can be spending 10 hours a week commuting for their dialysis'.

Positive framing of haemodialysis

Nephrologists believed that some patients have negative perceptions about haemodialysis because some clinicians 'demonise the other treatment' in order 'try to get more people onto PD', which ends up 'shooting us in the foot'. Clinicians also mentioned that some patients were 'threatened with (haemodialysis)' when they were not adherent with their PD treatment, causing the change to haemodialysis to be perceived as 'some types of punishment'. Some participants also identified certain patients were unwilling to transfer to haemodialysis because of 'tremendous symptoms post dialysis', were 'worried about disfiguration', or 'they do not want to see blood or needles'. Nephrologists also thought that patients should not be allowed to 'bad mouth haemodialysis' to other patients, which may create a bias against haemodialysis.

DISCUSSION

Nephrologists believed that technique survival in PD is not only influenced by patients' peritoneal membrane and residual kidney function but also affected by psychosocial aspects surrounding them such as the patient's ability to be independent, the support available to them and their mental well-being. Nephrologists felt they had a crucial role in promoting treatment longevity and improving the patient journey on PD, such as by establishing effective communication with their patients to adapt the treatment regimen based on individual needs. Nephrologists found it challenging when patients were reluctant to transition to haemodialysis, which emphasised the importance of providing realistic expectations about overall technique survival in PD at the start of the treatment and equipping patients with adequate support during the transition period to haemodialysis.

Our findings describe nephrologists' attitudes and perspectives that may explain disparities in care provided to patients receiving PD. Nephrologists in South America, Australia and New Zealand emphasised the need for psychological support from social workers and psychologists, as well as financial support to access home services and to relieve the financial burden of PD, especially in patients of working age. In contrast, such issues were not mentioned by participants in Asian countries, such as Hong Kong, where domestic helpers were more widely accessible to patients, and where large households with multiple family members were available to assist in treatment.

Studies have shown that the nephrologists' expertise plays a crucial role in maintaining patients on PD long term.[15] In this study, nephrologists perceived long-term PD as around 5 years, which is consistent with definitions used in the literature.[22] However, participant responses may be influenced by their clinical observations and context rather than published evidence, given that 5-year technique survival rates vary globally, from 16% in Australia to 85% in China.[13 23] Participants also highlighted the differences in knowledge of PD among nephrologists, and the impact this may have on the care of patients receiving PD. As indicated in previous studies,[16 17] transition from PD to haemodialysis was challenging for nephrologists, especially when aiming to obtain an optimal balance of clinical parameters and patient preferences for treatment. Nephrologists emphasised the need for a planned transition to haemodialysis to prevent the negative outcomes associated with abrupt transition to haemodialysis; however, they also felt frustrated when patients were reluctant to transfer to haemodialysis despite their advice.[24] Our study found that patients' concerns relating to the transition process could be alleviated by developing transparent communication with consistent information delivered to patients across the multidisciplinary team. Nephrologists could provide patients with information about technique survival in PD and the need to transition in the future from the beginning of the treatment,[24] while also sharing

the uncertainties surrounding the technique survival. By doing this, patients' expectations on their treatment course could be managed and they would become more receptive and understanding with the transition process required in the future.[19] Nevertheless, this study found that some clinicians believed providing patients with such information could cause distress, especially when the information was not relevant to patients at the time, such as older patients with anticipated short-term survival.

As previously suggested, transition to haemodialysis is a challenging process for patients.[19 25] Our study found that nephrologists believe the main reason for this is due to patients' fear of losing independence after having stopped PD[24 26] and the negative portrayal of haemodialysis.[24] However, a recent qualitative study on patients' experiences in transitioning between PD and in-centre haemodialysis indicated that patients who were more involved in the decision-making of the transition process with planned transition were more confident in starting haemodialysis and perceived greater control over their health management.[24 26] This supports the current study findings of the importance for nephrologists to develop effective communication and promote shared decision-making with patients in the transition process. Holvoet *et al* found that patients often felt isolated from the medical team during the transition process and suggested healthcare professionals' support for patients during this process would be helpful.[26] Our study found that support from nephrologists, in addition to nurses, psychologists and social workers and peer support, was invaluable for patients. Some research also suggested that transition from PD to home haemodialysis compared with in-centre haemodialysis might ease patients' psychosocial burden during the transition process and improve patient survival.[27]

Our study included nephrologists from a wide range of countries with varying experiences on PD and was able to explore their perspectives on technique survival in PD and transition to haemodialysis. However, there are potential limitations. The interviews did not include PD nurses who play a crucial role in the management of PD patients; hence, these perspectives should be explored in further research. The interviews were conducted in English only, with most participants practising in high-income countries, therefore the transferability of the findings to non-English speaking populations and low-to-middle income settings is uncertain. We also acknowledge that responses reflected the participants' own experiences and may not have reflected the beliefs and practices in their unit or country more broadly.

Nephrologists believed that establishing rapport with patients to understand their priorities and circumstances around the PD treatment may improve technique survival. These along with managing patients' expectations about the treatment longevity could also improve patient's experience during transition to haemodialysis. Nephrologists were conscious to ensure shared decision-making approaches when planning for transition to haemodialysis as it would help to alleviate patients' concerns. A multidisciplinary team approach involving nurses, psychologists and social workers, along with financial support for patients, were invaluable resources to maintain patients on PD and support them during the transition to haemodialysis.

Author affiliations
[1]Sydney School of Public Health, The University of Sydney, Sydney, New South Wales, Australia
[2]Centre for Kidney Research, The Children's Hospital at Westmead, Sydney, NSW, Australia
[3]The Lundquist Institute, Harbor-UCLA Medical Centre, Torrance, California, USA
[4]Department of Nephrology, Princess Alexandra Hospital, Brisbane, Queensland, Australia
[5]Australasian Kidney Trials Network, University of Queensland, Brisbane, Queensland, Australia
[6]Imperial College Renal and Transplant Centre, Hammersmith Hospital, London, UK
[7]Department of Medicine, Peking University First Hospital, Beijing, People's Republic of China
[8]South Bank TAFE, Brisbane, Queensland, Australia
[9]Department of Medicine, University of Washington, Seattle, Washington, USA
[10]Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa
[11]Pontifical Catholic University of Parana, Curitiba, Brazil
[12]Division of Nephrology, Department of Medicine, St. Michael's Hospital, University of Toronto, Toronto, Ontario, Canada
[13]Department of Medicine, University of Hong Kong, Hong Kong, Hong Kong
[14]Department of Nephrology, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK
[15]College of Medicine and Public Health, Flinders University, Adelaide, South Australia, Australia

Twitter Allison Jaure @allisonjaure, Angela Yee-Moon Wang @aymwanghkuhk and Karine Manera @KarineManera

Contributors BY contributed to the data curation, formal analysis, writing—original draft, review and editing of the work. AJ and KM contributed to the conceptualisation, methodology, project administration, supervision, writing—review and editing. JS, YC, EB, JD, TD, RM, SN, RP-F, JP, AY-MW, MW, CG, NS-R, JC and DJ contributed to the conceptualisation, writing—review and editing. KM is the guarantor of the content and accepts full responsibility for the finished work and/or the conduct of the study, had access to the data, and controlled the decision to publish.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants. The University of Sydney provided ethics approval for the study (2015/228). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on reasonable request. Data are available on reasonable request. Deidentified data will be available from the first author on reasonable request.

Supplemental material This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible

for any error and/or omissions arising from translation and adaptation or otherwise.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: http://creativecommons.org/licenses/by-nc/4.0/.

ORCID iDs
Allison Jaure http://orcid.org/0000-0001-8973-9538
Jie Dong http://orcid.org/0000-0001-7298-3307
Angela Yee-Moon Wang http://orcid.org/0000-0003-2508-7117
Martin Wilkie http://orcid.org/0000-0003-1059-6453
Chandana Guha http://orcid.org/0000-0002-0767-4185
Karine Manera http://orcid.org/0000-0002-0552-6074

REFERENCES

1 Tong A, Lesmana B, Johnson DW, *et al*. The perspectives of adults living with peritoneal dialysis: thematic synthesis of qualitative studies. *Am J Kidney Dis* 2013;61:873–88.
2 Chang Y-T, Hwang J-S, Hung S-Y, *et al*. Cost-effectiveness of Hemodialysis and peritoneal dialysis: A national cohort study with 14 years follow-up and matched for Comorbidities and propensity score. *Sci Rep* 2016;6:30266.
3 Treharne C, Liu FX, Arici M, *et al*. Peritoneal dialysis and in-centre Haemodialysis: A cost-utility analysis from a UK payer perspective. *Appl Health Econ Health Policy* 2014;12:409–20.
4 Rubin HR, Fink NE, Plantinga LC, *et al*. Patient ratings of dialysis care with peritoneal dialysis vs Hemodialysis. *JAMA* 2004;291:697–703.
5 Zazzeroni L, Pasquinelli G, Nanni E, *et al*. Comparison of quality of life in patients undergoing Hemodialysis and peritoneal dialysis: a systematic review and meta-analysis. *Kidney Blood Press Res* 2017;42:717–27.
6 Theofilou P. Quality of life in patients undergoing Hemodialysis or peritoneal dialysis treatment. *J Clin Med Res* 2011;3:132–8.
7 Jung H-Y, Jeon Y, Park Y, *et al*. Better quality of life of peritoneal dialysis compared to Hemodialysis over a two-year period after dialysis initiation. *Sci Rep* 2019;9:10266.
8 Moist LM, Port FK, Orzol SM, *et al*. Predictors of loss of residual renal function among new dialysis patients. *J Am Soc Nephrol* 2000;11:556–64.
9 Li PK-T, Chow KM, Van de Luijtgaarden MWM, *et al*. Changes in the worldwide epidemiology of peritoneal dialysis. *Nat Rev Nephrol* 2017;13:90–103.
10 Jain AK, Blake P, Cordy P, *et al*. Global trends in rates of peritoneal dialysis. *J Am Soc Nephrol* 2012;23:533–44.
11 Miskulin DC, Meyer KB, Athienites NV, *et al*. Comorbidity and other factors associated with modality selection in incident dialysis patients: the CHOICE study. *American Journal of Kidney Diseases* 2002;39:324–36.
12 Oliver MJ, Garg AX, Blake PG, *et al*. Impact of Contraindications, barriers to self-care and support on incident peritoneal dialysis utilization. *Nephrol Dial Transplant* 2010;25:2737–44.
13 Australian and New Zealand dialysis and transplant Registry. 43rd report, Chapter 5 peritoneal dialysis; 2019.
14 Kendrick J, Teitelbaum I. Strategies for improving long-term survival in peritoneal dialysis patients. *Clin J Am Soc Nephrol* 2010;5:1123–31.
15 Schaubel DE, Blake PG, Fenton SSA. Effect of renal center characteristics on mortality and technique failure on peritoneal dialysis. *Kidney Int* 2001;60:1517–24.
16 Jaar BG, Plantinga LC, Crews DC, *et al*. Timing, causes, predictors and prognosis of switching from peritoneal dialysis to Hemodialysis: a prospective study. *BMC Nephrol* 2009;10:3.
17 Chidambaram M, Bargman JM, Quinn RR, *et al*. Patient and physician predictors of peritoneal dialysis technique failure: A population based, retrospective cohort study. *Perit Dial Int* 2011;31:565–73.
18 Sukul N, Mukhopadhyay P, Schaubel DE, *et al*. Peritoneal dialysis and mortality, kidney transplant, and transition to Hemodialysis: trends from 1996-2015 in the United States. *Kidney Med* 2020;2:610–619.
19 INTEGRATED group consists of (in alphabetical order), Chan C, Combes G, *et al*. Transition between different renal replacement modalities: gaps in knowledge and care—the integrated research initiative. *Perit Dial Int* 2019;39:4–12.
20 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;19:349–57.
21 Corbin J, Strauss A. *Basics Of Qualitative Research*4th ed. Los Angeles: SAGE, 2014.
22 Mehrotra R, Devuyst O, Davies SJ, *et al*. The current state of peritoneal dialysis. *J Am Soc Nephrol* 2016;27:3238–52.
23 Xia X, Qiu Y, Yu J, *et al*. Ten-year survival of patients treated with peritoneal dialysis: A prospective observational cohort study. *Perit Dial Int* 2020;40:573–80.
24 Allen K, Damery SL, Sein K, *et al*. How do patients and their family members experience the transition from peritoneal dialysis to Incentre Haemodialysis? A Multisite qualitative study in England and Australia. *Perit Dial Int* 2022;42:297–304.
25 Hutchinson TA. Transitions in the lives of patients with end stage renal disease: a cause of suffering and an opportunity for healing. *Palliat Med* 2005;19:270–7.
26 Holvoet E, Verhaeghe S, Davies S, *et al*. Patients' experiences of Transitioning between different renal replacement therapy modalities: A qualitative study. *Perit Dial Int* 2020;40:548–55.
27 Kansal SK, Morfin JA, Weinhandl ED. Survival and kidney transplant incidence on home versus in-center Hemodialysis, following peritoneal dialysis technique failure. *Perit Dial Int* 2019;39:25–34.