

Table S1. COREQ 32-item checklist*

Item	Description/ Related Questions
Domain 1: Research team and reflexivity	
1. Interviewer/facilitator	Julia H. Narendra
2. Credentials	MPH
3. Occupation	Research manager
4. Gender	Female
5. Experience and training	Mrs. Narendra is a master's-level trained public health professional with over 10 years of experience in public health. She is experienced with engaging diverse stakeholders in research and personal dialogues as exemplified by previous related work with veterans and individuals living with HIV/AIDS and/or hepatitis C.
6. Relationship established	None
7. Participant knowledge of the interviewer	None Mrs. Narendra introduced herself at the beginning of the focus group as a non-clinician and member of the research team.
8. Interviewer characteristics	Mrs. Narendra used her first name and led the group from a seated position at a conference table with the focus group participants. She established ground rules and expectations at the beginning of the groups. These included: one person speaking at a time, avoidance of cross-talk during the discussion, and respect for others' opinions. She reminded participants to speak as loudly as possible, use first names only and reinforced that responses would be confidential and not shared with their medical treatment team or employer.
Domain 2: Study Design	
9. Methodological orientation and theory	Thematic analysis and principles of grounded theory ¹⁻³
10. Sampling	<u>Clinics</u> were purposively selected from a convenience sample considering the following characteristics: location (urban vs. rural), modality offerings (in-center hemodialysis, peritoneal dialysis, home hemodialysis), size (small, medium and large), clinic age (newer vs. older) and academic affiliation (university-affiliated vs. not). <u>Participants</u> were sampled from a group of 81 nurse managers, nurses, PCTs, social workers, dietitians, medical providers, patients and care partners affiliated with 7 North Carolina dialysis clinics to obtain 7 groups of 6 to 12 (goal=8) participants per stakeholder type. Iterative purposive sampling considering the following individual characteristics age, education, dialysis modality and prior research experience was used.
11. Method of approach	We recruited participants via fliers posted in the dialysis clinics (all participants), emails (clinic personnel and medical providers), clinic staff meeting announcements (clinic personnel), and in-person recruitment by study staff (all participants). The target focus group size was 8 participants with an

	acceptable size of 6-12 participants. We recruited up to 12 participants per focus group to allow for non-attendance.
12. Sample size	7 focus groups; 59 participants
13. Non-participation	See Figure 1.
14. Setting of data collection	Focus groups were conducted in dialysis clinic conference rooms in Carrboro, Pittsboro, Siler City, Mebane, and Charlotte, NC. The conference room doors were closed to protect patient and employee privacy. Participants sat at a conference table and were served light refreshments or lunch depending on the time of day.
15. Presence of non-participants	One research assistant
16. Description of sample	See Tables 1 (clinics) and 2 (participants).
17. Interview guide	The semi-structured moderator guide was developed based on literature review and investigator team input and then refined based on feedback from a multidisciplinary stakeholder panel (academic and community nephrologists, dialysis clinic staff, corporate dialysis executives, clinical research organization employees, and dialysis patient and care partners). The moderator guide contained sections on research knowledge and perceptions, research barriers, ideas for increasing interest in research participation and facilitation and research education and communication preferences. See Table S2 for representative moderator guide questions.
18. Repeat interviews	N/A
19. Audio/visual recording	Audio-recorded
20. Field notes	The research assistant took notes on group dynamics and interactions as well as participant non-verbal body language. Participant demographic, clinical and professional characteristics were self-reported.
21. Duration	90-120 minutes
22. Data saturation	Given the exploratory nature of the study and intent to capture diverse perspectives, we could not evaluate thematic saturation by stakeholder type. Due to low representation of home therapies nurses, patients and care partners in the first groups, we conducted additional nurse/PCT and patient/care partner groups with oversampling of the underrepresented groups. The additional focus groups did not raise new themes; however, additional themes may have been identified if other stakeholder type groups were conducted.
23. Transcriptions returned	Complete focus group transcripts were not shared with participants. However, summaries of each focus group were shared with participants within 4 weeks of focus group completion. The participants had the opportunity to provide feedback on the summaries, but we did not engage in formal participant checking. Also, we provided the summaries to be responsive to the participants' expressed desires to receive feedback and updates on studies in which they participated or facilitated.
Domain 3: Analysis and Findings	
24. Number of data coders	3

<p>25. Description of coding tree</p>	<p>The data were systematically coded, collating quotations relevant to each code and theme. After examining the themes for inter-relationships and connections, the themes were organized into 4 categories of types of research participation and facilitation barriers and facilitators. These categorized themes were then organized into 2 overarching concepts. Overall concepts that shaped a research-ready dialysis clinic atmosphere were identified as: 1) cultivation of a research-informed and interested atmosphere via stakeholder education, and 2) alignment of clinical and research activities to foster an atmosphere of teamwork and enablement.</p>
<p>26. Derivation of themes</p>	<p>During initial coding, three authors (JHN, AD and JEF) independently coded the transcripts and developed preliminary lists of codes. A central codebook was used to identify discrepancies and generate discussions among coders. The codebook was revised based on author consensus to capture all relevant themes and concepts. Coding discrepancies were addressed through discussion among the 3 authors. Through iterative discussions, the authors collated the consensus codes into potential themes and used the software to gather quotations relevant to each theme. The themes all related to barriers to or facilitators of research participation by patients and research facilitation by clinic personnel and medical providers. The authors identified conceptual links and patterns through an iterative theme comparison process and ultimately developed a thematic schema linking the identified themes into a theoretical model for enhancing research readiness in dialysis clinics.^{10, 11} All codes, themes and concepts were developed iteratively and confirmed by consensus among the 3 authors.</p>
<p>27. Software</p>	<p>ATLAS.ti (Berlin, Germany) ATLAS.ti is a type of qualitative data analysis software that is a tool for supporting and organizing the process of qualitative data analysis. Professional transcriptions of the focus group recordings were uploaded in their entirety into the software. The researchers then coded the interview texts. First, they familiarized themselves with the data, reading the transcriptions in entirety and taking initial notes. They then systematically coded the data, collating quotations (data) identified as relevant to each theme. The coders iteratively discussed their identified codes and themes, updating the shared codebook until a final coding structure was agreed upon. They then reviewed themes, noting connections, overlap and relationships and developed a thematic schema linking the codes and themes. The coders continued to review and refine the themes and created names and definitions for each theme. Representative quotations were then selected as examples to present in the manuscript. The developed thematic schema became the theoretical model for enhancing dialysis clinic research readiness.</p>
<p>28. Participant checking</p>	<p>At the end of each moderator guide section, the moderator probed for additional comments to elicit complete information. Additionally, she checked her understanding by providing</p>

	<p>summary statements and asking for clarifying feedback. She also followed the practice of repeating back participant comments to emphasize listening and clarify understanding and interpretation. At conclusion of each focus group, she asked for final thoughts so stakeholders had the opportunity to reflect on the focus group content in its entirety.</p> <p>Additionally, we provided preliminary results summaries to participants within 4 weeks of each group to gather feedback from participants and be responsive to their request for research follow-up. However, we did not engage in formal participant checking with this summary.</p>
29. Quotations presented	See Tables 3 and S3.
30. Data and findings consistent	Consistent
31. Clarity of major themes	<p>Two overarching concepts important for developing a research-ready dialysis clinic atmosphere emerged: 1) cultivation of a research-informed and interested atmosphere via stakeholder education, and 2) integration of clinical and research activities to foster an atmosphere of teamwork and enablement. Eleven themes that captured barriers to and facilitators of research participation by patients and research facilitation by clinic staff and medical providers in dialysis clinics underlay these central concepts. We collapsed these themes into 4 categories to create an organizational framework for considering the stakeholder, relationship, research design and dialysis clinic aspects that may affect stakeholder interest in participating in or facilitating research. The identified themes were: 1) individual stakeholder-related (narrow research understanding, competing personal priorities, low literacy and education levels); 2) relationship-related (necessity of trust, research buy-in, altruistic motivations); 3) research design and operations-related (convenience, timely follow-up, incentives for participation); and 4) dialysis clinic-related (competing professional demands, teamwork and communication).</p>
32. Clarity of minor themes	N/A

Abbreviations: PCT, patient care technician; N/A, not applicable

* 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(6): 349-357.

Works Cited

1. Glaser BG, Strauss AL. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New Brunswick: Aldine Transaction; 2008.
2. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006;3(2). 77-101.
3. Braun V, Clarke V. *Successful qualitative research: A practical guide for beginners*. London: Sage; 2012.

Table S2. Focus group moderator guide topics and representative questions.

1. Welcome	
2. Ground Rules	
3. Introductions	
4. Discussion	<p>Topic #1: Research knowledge and perceptions First, I'd like to talk about research.</p> <p><i>For all participants:</i> When you hear the term "medical research", what comes to mind? PROBE: Is medical research a positive thing? Why? PROBE: Any negative associations or thoughts come to mind when thinking about research?</p> <p><i>For the purposes of this focus group, we are defining "medical research" as a process used to discover new knowledge related to health and disease. For the remainder of this discussion, we are going to talk about "clinical research." Clinical research is the type of medical research that involves patients. People volunteer to participate in studies that help uncover better ways to treat, prevent, diagnose and understand human disease. Clinical research includes clinical trials that test new treatments and medicines as well as studies that use patient medical information to learn about disease and health. Other examples of clinical research include focus group and interview studies designed to collect participant opinions or perspectives.</i></p> <p><i>For patients/caregivers:</i> Have you ever participated in medical research? PROBE: If yes, what type of study was it? PROBE: If yes, how was your experience?</p> <p><i>For patients/caregivers:</i> Do you think you would be interested in participating in medical research? PROBE: If yes, why? PROBE: If no, why not?</p> <p><i>For clinic personnel and medical providers:</i> Have you ever facilitated (helped with) a research study in a dialysis clinic? PROBE: If yes, what type of study was it? PROBE: If yes, how was your experience?</p> <p><i>For clinic personnel and medical providers:</i> Do you think you would be interested in facilitating (helping with) medical research in a dialysis clinic? PROBE: If yes, why? PROBE: If no, why not?</p>
5. Discussion	<p>Topic #2: Research barriers Next we are going to talk about some of the things that might make research participation by patients and research facilitation by clinic staff and medical providers in dialysis clinics difficult.</p> <p><i>For all participants:</i> What types of things might prevent patients from participating in research?</p> <p><i>For all participants:</i> Any ideas for overcoming these barriers?</p> <p><i>For patients/care partners:</i> Are there ways that your dialysis team could help overcome these barriers?</p> <p><i>For all participants:</i> What types of things might make facilitating (or helping with) research in dialysis clinics difficult for clinic staff or medical providers?</p>

	<i>For all participants: Any ideas for overcoming these barriers?</i>
6. Discussion	<p>Topic #3: Ideas for increasing interest in research participation and facilitation Now I would like to hear about your ideas for increasing interest in participation and facilitation of dialysis-related research.</p> <p><i>For all participants: What ideas do you have for increasing patient interest in research participation?</i></p> <p><i>For patients/caregivers: What do you think is the best method to help patients and their families understand a study that they might have the opportunity to participate in?</i></p> <p><i>For all participants: What ideas do you have for increasing dialysis clinic personnel and medical provider interest in research facilitation in dialysis clinics?</i></p> <p><i>For clinic personnel and medical providers: If you were asked to perform study duties or help recruit patients for studies, what information about the study would you like to know? How would you like to receive this information?</i></p>
7. Discussion	<p>Topic #4: Research education and communication preferences The last thing I would like to learn from you relates to how you like to receive educational information. We are asking about this topic for 2 reasons. First, we would like to develop general research education materials for patients and clinic personnel. Second, we will use this information to help us provide better communication to patients, clinic personnel and medical providers about future research opportunities.</p> <p><i>For all participants: How do you like to receive educational materials in general? For example, read a handout, watch a video, got to a webpage on the internet, listen to an in-person presentation.</i></p> <p><i>For all participants: How would you like to receive general research education material (materials to help you learn more about what participating or implementing research means)?</i></p> <p><i>For patients/caregivers: How would you like to receive information or communication about studies that you might be able to participate in?</i></p> <p><i>For clinic personnel and medical providers: How would you like to receive specific research study-related communication about studies that you might be able to help facilitate?</i></p>
8. Final thoughts	Does anyone have any final thoughts they want to share?
9. Wrap-up	

Table S3. Illustrative quotations of stakeholder perspectives on research education and study recruitment and training materials.

Characteristics	Quotations^a
Format	
	<p>"I mean you have to give all the different forms of education. You have to provide the written, the verbal, the tactile, I mean, everything, everything has to be there." (clinic manager)</p> <p>"The websites are no good for our patients." (clinic manager)</p> <p>"We read a lot of black and white, and we read all the time, so I'd rather see a video." (nurse/PCT)</p> <p>"...it may not be the same thing for everyone. Different things will probably sort of stick with different ones of us just because on some level we relate to it more" (nurse/PCT)</p> <p>"People (patients) will get a handout and then just throw it away. I've actually seen it. So you actually have to go over it with them and actually talk to them and see if they would want to do it, because some of them might not give it a chance without hearing it first." (nurse/PCT)</p> <p>"Face to face or paper. Or they could do it like you know like they do that thing that we have to watch every year, they make us watch on Channel 60... on TV." (patient/care partner)</p>
Level	
	<p>"So your patients that can't read, you're going to have to sit down and talk to them...a lot of my patients that don't speak English don't read, either. So then you've got both the barriers in one." (clinic manager)</p> <p>"Depends on the patient, their cognitive -- if they're literate and that kind of thing. So it would have to be very individual as far as the teaching method." (social worker/dietitian)</p> <p>"You're not dealing with academics; you're dealing with the day-to-day person." (patient/care partner)</p>
Length	
	<p>"Short and sweet summary. Cliff notes." (nurse/PCT)</p> <p>"I want easy to read. Very bullet, straight to the point, instead of a lot of busy text." (social worker/dietitian)</p> <p>"Short and sweet to begin with. I don't want to read an entire page long email or a handout because that's going into the trash to be honest." (medical provider)</p>
Tone	
	<p>"It's got to be positive." (nurse/PCT)</p> <p>"To some, [dialysis] sometimes feels like the end. If it was me personally, I wouldn't want to feel like this was the end. I would want to have some hope." (nurse/PCT)</p>

^a Quotations are from focus group participants. (Stakeholder focus group) attribution is listed in parentheses after each quotation.

Abbreviations: PCT, patient care technician