

## Physical Function and Physical Activity Assessment and Promotion in the Hemodialysis Clinic: A Qualitative Study

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**Background:** Despite practice guidelines (KDOQI [Kidney Disease Outcomes Quality Initiative]) recommending regular assessment of physical function and encouragement of physical activity, few clinics in the United States objectively assess physical function/physical activity or provide recommendations for physical activity in their patient care.

**Study Design:** Qualitative methods were used to develop an understanding of practice patterns related to physical function assessment and physical activity encouragement by dialysis staff.

**Setting & Participants:** Data were collected in one outpatient university-based hemodialysis clinic. 15 patient care staff were interviewed and 6 patients were observed.

**Methodology:** Semistructured interviews of patient care staff were conducted, along with nonparticipant observations of the clinic environment and operations and review of archival materials.

**Analytic Approach:** Coding of the interviews was descriptive, followed by interpretive coding by the research team. On-site field notes were transcribed for analysis.

**Results:** There was universal unawareness of the KDOQI guideline related to physical function/physical activity; however, all staff thought their patients would benefit from physical activity. There were no objective assessments of physical function and no resources or training to facilitate physical activity encouragement. Staff described deteriorating physical function in their patients, which was frustrating and disappointing. Barriers to physical activity included clinical/disease factors, staff “overaccommodation,” and a system of dialysis care that facilitates sedentary behavior and does not require or incentivize clinics to promote physical activity. The patient care technicians were interested and thought that they had time to promote physical activity, but thought that they were unprepared to do so, indicating a need for education and training and a need to develop protocols to address the issue as routine practice.

**Limitations:** This was a single university-based center; however, because hemodialysis procedures are prescribed by Centers for Medicare & Medicaid Services regulations, it is likely that practice in this clinic is representative of nationwide practice.

**Conclusions:** Development of strategies to implement practice change that addresses low physical function and physical activity is warranted.

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**INDEX WORDS:** Physical function; physical activity; practice patterns; hemodialysis; ethnography of the dialysis clinic; qualitative research; semistructured interview; end-stage renal disease (ESRD); exercise; disability.

One of the recommendations in the National Kidney Foundation–Kidney Disease Outcomes Quality Initiative (NKF-KDOQI) clinical practice guideline on cardiovascular disease management states “All dialysis patients should be counseled and regularly encouraged by nephrology and dialysis staff to increase their level of physical activity.”<sup>1(pS60)</sup> There is a strong association between low physical function and low physical activity and poor clinical outcomes.<sup>2</sup> Exercise training results in improved physical function and quality of life<sup>3-9</sup> and other clinical benefits.<sup>9-13</sup> Despite robust evidence, patients are inactive<sup>14-18</sup> and regular physical activity is not emphasized, encouraged, or prescribed routinely by nephrologists<sup>14-20</sup> or within dialysis clinics.<sup>21-23</sup>

Translation of guidelines into practice is complex,<sup>24</sup> and several frameworks for guiding implementation science have emerged.<sup>25-30</sup> The Promoting Action on Research Implementation in Health Services (PARiHS) framework (Fig 1) suggests that successful

implementation is determined by evidence, context, and facilitation.<sup>27,28</sup> To operationalize the PARiHS framework, a formative evaluation can be used, which is defined by Stetler et al<sup>31</sup> as “a rigorous assessment process designed to identify potential and actual influences on the progress and effectiveness of implementation efforts.”<sup>31(pS3)</sup> Diagnostic assessment (the first step in the formative evaluation) may enhance the likelihood of successful implementation and is,

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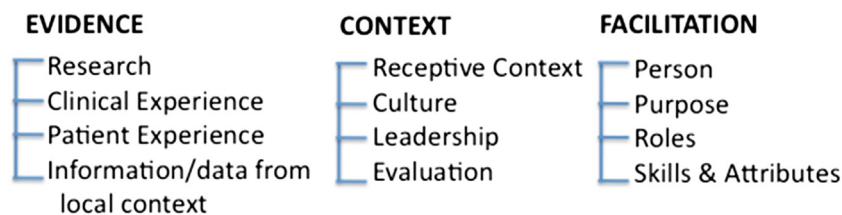
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**Figure 1.** Elements of the Promoting Action on Research Implementation in Health Services (PARIHS) Framework. All stakeholders (providers, staff, and patients) must have adequate evidence supporting the practice change; the context must be receptive in terms of facility, leadership, and delivery system; and facilitation is needed for changing the practice setting to implement practice change. Based on Kitson et al.<sup>28</sup>

again according to Stetler et al,<sup>31</sup> an assessment of: (1) actual degree of less than best practice, (2) determinants of current practice, (3) potential barriers and facilitators to practice change and implementation of a proposed strategy, and (4) strategy feasibility.

We conducted a diagnostic assessment that focused on developing an understanding of the practice patterns and perceptions of dialysis staff for implementation of the KDOQI guideline for physical function and physical activity as a first step in developing a feasible implementation strategy.

## METHODS

### Study Design and Setting

Focused ethnography<sup>32,33</sup> was used to describe staff beliefs and daily behaviors related to physical function and physical activity assessment of patients in an outpatient hemodialysis setting. Qualitative diagnostic assessment data were elicited through individual semistructured interviews, nonparticipant observations of clinic environment and operations, and review of archival material. This study was conducted in a free-standing outpatient university-based hemodialysis clinic that had 20 dialysis stations and treated 72 patients during 4-hour shifts on 6 days of the week.

### Investigators

The authors include an exercise physiologist who has conducted physiology studies related to exercise in patients with end-stage renal disease (P.P.) and who has interest in developing implementation strategies for the KDOQI physical function/physical activity guidelines within hemodialysis clinics. L.C. has no experience in dialysis and is a qualitative researcher with expertise in public health nursing and health promotion in underserved and disabled individuals. J.O. is a doctoral candidate in nursing and assisted with coding activities. None of the investigators have patient care responsibilities in the dialysis clinic.

### Methodology

Semistructured interviews were conducted on site in private with clinic staff who had worked at the clinic longer than 6 months and volunteered to participate. Interviews were conducted using an interview guide<sup>34</sup> that addressed topics found in [Box 1](#). All interviews were digitally recorded, and the recorded interviews were professionally transcribed (General Transcriptions, Salinas, CA), de-identified, and verified for transcription accuracy. Transcripts then were entered into ATLAS-ti, version 6.2 (ATLAS.ti Scientific Software Development GmbH). Descriptive and process coding<sup>35</sup> was applied to topics covered by the interview guide. From this literal coding of transcript data, the research team then added a second level of interpretation to index meanings as related to the topics of interest (interpretive coding).<sup>36</sup> This transition from description of what was said in the interviews to what it meant in conceptual abstractions and patterns gave form to our findings.

Nonparticipant observations were unobtrusive and established the course of everyday events on the dialysis unit.<sup>37</sup> The physical environment of the clinic was mapped, including waiting areas, bulletin boards, and the patient care area, to document educational materials posted on the walls or pamphlets available. Patient-centered observations were conducted for 6 patients who were observed from the time they walked into the clinic to commencement of treatment. Permission was obtained from the patient and the staff member for this observation. On-site field notes were recorded.

The study was approved by the Institutional Review Board at the University of Utah, which required consent for staff interviews, but required permission of only those patients who were observed.

## RESULTS

### Interviews

Fifteen of 18 patient care staff volunteered to be interviewed (3 men; 6 registered nurses, 7 patient care technicians [PCTs], 1 dietitian, and 1 social worker). Those not participating were on either vacation or medical leave. Interviewees averaged 9.8 (range, 1-22) years working in dialysis. Interviews averaged 27 minutes. Within a few interviews we achieved saturation, meaning we were confident that the data adequately addressed the question of practice patterns. All interviewees confirmed the lack of assessment of physical function or physical activity in the clinic.

### Awareness of KDOQI Physical Activity Guideline

Most of the nurses were aware of the KDOQI guidelines, but none was aware of the specific

#### Box 1. Interview Guide for Semistructured Interviews

- Awareness of the NKF-KDOQI guideline recommendation for physical functioning and physical activity
  - Staff perceptions of the benefits of physical activity for their patients
  - Perception of physical functioning and physical activity participation of their patients
  - Barriers to physical activity for their patients
  - Practice patterns for assessing physical functioning
  - Practice patterns for encouraging physical activity
- Additional questioning included how change might occur within the clinic to promote physical activity and assess physical functioning on a routine, sustainable basis.

Abbreviation: NKF-KDOQI, National Kidney Foundation–Kidney Disease Outcomes Quality Initiative.

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