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Beyond exercise: supporting a range of physical activity for people receiving dialysis

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In 2007, the American College of Sports Medicine and American Medical Association jointly launched the 'Exercise is Medicine' awareness campaign intended to encourage incorporation of counseling on exercise and exercise program interventions as a component of clinical care for a broad swath of the US population [1]. This focus on improving physical fitness through exercise has been embraced by researchers and exercise physiologists working with dialysis patients in the USA and internationally. Investigators in this community have implemented a number of interdialytic exercise programs, which have demonstrated a positive impact on cardiovascular health, physical functioning and dialytic parameters. However, these promising interventions have proven to be surprisingly difficult to implement outside of research settings. This experience has prompted a deeper look at barriers to engaging people receiving dialysis and their clinical care teams in exercise programs and in physical activity more broadly [2, 3].

In a recent edition of *NDT*, Castillo *et al.* [4] performed an interview-based qualitative study to better understand barriers to implementing an interdialytic cycling program in community hemodialysis centers in Canada. A qualitative approach offers the opportunity to describe complex care processes in detail, including revealing factors that the investigators may not have anticipated. This type of inductive approach aligns well with the goal of investigating the unknown and potentially complex barriers to implementing an exercise intervention among people receiving dialysis. Castillo *et al.* [4] conducted semistructured interviews with 17 people receiving hemodialysis and 26 clinicians working in hemodialysis facilities across 12 hospitals in Ontario, Canada. Interview questions were intended to identify barriers and enablers to behavior change around an intradialytic cycling program. Participants largely endorsed the benefits of exercise for people receiving dialysis. However, the research team also describes with granularity the perception among stakeholders that an exercise program may add complexity to an already difficult treatment program for patients and may be an added burden on already strained staff. Challenges for staff included not only the time and energy needed to help patients perform exercise during their dialysis sessions, but also the need for training and expertise in specific exercise programs.

Clinician and patient perceptions of an interdialytic cycling program reflect ways in which this intervention represents 'exercise as medicine.' Specific exercise regimens are developed by experts and prescribed by clinicians. Castillo *et al.* and others [3, 4] highlight the perception among dialysis staff that special training is needed to implement exercise programs precisely and attribute responsibility for these interventions to physicians, trained physical therapists or exercise physiologists. Concern about inadvertently harming patients if the program is not conducted correctly or that patients are not selected appropriately was identified as a pervasive barrier to implementing these programs. Exercise programs were also seen as an 'add-on' to patients' overall treatment plan.

These findings identify opportunities to address specific barriers on the path to implementing an intradialytic cycling program in hemodialysis centers, and the authors delineate a 'checklist' of items for institutional leadership to consider in developing local programs. More broadly, the themes identified in this and prior literature also hint that an intervention focused on vigorous exercise may not be sufficient to support the needs of the diverse population of people receiving dialysis and suggest the need for a broader examination of the underlying needs and goals of this patient population [4].

Person-centered medicine is gaining traction as an optimal approach to aligning care with what matters most to individual patients. This model of care may be especially valuable for older adults and people with complex comorbidities, who make up an increasing proportion of the dialysis population. Aligned with this philosophy, the dialysis exercise physiology community has recently endorsed a broader scope of interventions intended to support physical activity for the heterogenous

population of people receiving dialysis [5]. A more inclusive view on the kinds of physical activity that might benefit patients as well as the goals of behavioral interventions offers an opportunity to better serve a diverse dialysis population.

Physical activity is defined as 'bodily movement produced by skeletal muscles that require energy expenditure', whereas exercise can be considered a subset of physical activity that is 'planned, structured, repetitive and purposefully focused on improvement or maintenance' of physical fitness [6]. Physical activity includes ambulation, activities of daily living and activities intended purely for recreation. A range of intensity levels of physical activity have been shown to improve physical fitness.

Although high-intensity exercise is undoubtably valuable for a subset of people with kidney failure, a diverse dialysis population necessitates the addition of more adaptable ways to support physical fitness. Indeed, patients often see the value in physical activity but may perceive *exercise* as taking too much time or as being risky or unpleasant [2–4, 7]. Programs encouraging physical activity more broadly may be more readily incorporated into a patient's usual activities. Researchers investigating barriers to exercise suggest focusing on identifying times in patients' daily routine in which they can incorporate physical activity and tailoring activity to their level of fitness [7]. For example, a recent trial that equipped patients with pedometers and encouraged them to increase ambulation through the day without prescribing the specific activity or degree of exertion was successful in increasing walking activity [8].

The toolbox of approaches to support an array of physical activity should include not only the addition of behavioral interventions, but also removal of iatrogenic barriers such that patients may resume their habitual physical activities to the extent possible. For example, Painter *et al.* [3] describe how people receiving dialysis may internalize messaging that they should 'take it easy', allow others to do daily activities for them or avoid use of extremities with a vascular access, each of which can interfere with engagement in usual physical activities. Although some physical activities may need to be adapted to the realities of serious illness, identifying and removing any barriers imposed unintentionally by the medical system may be the first step in helping patients to engage in the kinds of physical activity that would otherwise be naturally integrated into their day-to-day lives.

In addition to improving physical fitness and cardiovascular outcomes, a focus on physical activity may better support a broader array of patients' intrinsic personal goals. In addition to encountering risks to their health and longevity, patients living with kidney failure may experience existential distress and challenges to their personal identity [9]. The anthropologist Kay Toombs describes ways in which limitations in ability to perform physical activities may narrow a person's lived world and how supporting patients in coping with illness often involves helping them to physically engage with their environments [10]. This lens aligns with perceptions of dialysis center staff that physical activity should be aimed at helping patients to do routine tasks for themselves and suggests that interventions targeting more intrinsic life activities may promote a sense of autonomy and self-actualization.

Formal exercise programs offer a valuable opportunity for many people receiving dialysis to improve physical fitness and other health outcomes. However, a focus on supporting physical activity more broadly may better align with the needs of many patients receiving dialysis, including older adults with multiple comorbidities. In addition to improving physical fitness, physical activity may be integrated into daily life rather than adding to treatment regimen complexity. Further, support for routine physical activities may enhance autonomy and facilitate coping with existential distress. An adaptable menu of interventions to encourage physical activity is needed as we work to support an increasingly diverse dialysis population.

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CONFLICT OF INTEREST STATEMENT

None declared.

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