

Original Research Article

Bridging the Gap After Physical Therapy: Clinical–Community Linkages With Older Adult Physical Activity Programs

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Abstract

Background and Objectives: Many barriers exist to older adult participation in physical activity, despite known benefits. Referrals from physical therapists (PTs) through clinical–community linkages offer novel, promising opportunities to increase older adult engagement in appropriate community-based physical activity programs. We assessed the capacity of PTs to participate in such linkages.

Research Design and Methods: We collected qualitative data using semistructured phone interviews ($n = 30$) with PTs across 14 states. We conducted thematic analysis using a priori themes based on the 2008 Bridging Model of Etz and colleagues: capacity to assess patient risk, ability to provide brief counseling, capacity and ability to refer, and awareness of community resources.

Results: Risk assessment and counseling were already part of routine practice for our respondents, but counseling could be further facilitated if PTs had more skills to engage less-motivated patients. PTs expressed a desire to refer their patients to community programs; however, barriers to referrals included lack of knowledge of and trust in community programs, and limited infrastructure for communicating with potential partners.

Discussion and Implications: PTs have the capacity to develop patient referral linkages with community-based physical activity programs. PT session length and content facilitates patient risk assessment and behavioral counseling. Integrating motivational techniques can help PTs engage less-motivated patients in physical activity. Systemic improvements should include innovations in communication infrastructure, identifying clinic-level champions, and in-person outreach initiated by organizations that deliver community physical activity programs.

Translational Significance: Results suggest that further improvements in the effectiveness of physical therapist counseling of older adults to join physical activity programs could be achieved with the integration of provider training in motivational techniques. A lack of knowledge and trust in community programs, and a lack of bidirectional communication systems may be addressed through innovations in communication infrastructure, identifying clinic-level champions, and in-person outreach initiated by organizations that deliver community physical activity programs.

Keywords: Exercise/physical activity, Occupational and/or physical therapy, Organizational and institutional issues, Physician–patient communication/relationships, Qualitative analysis: Thematic analysis

Background and Objectives

As few as 20% of older adults in the United States participate in adequate physical activity (Sun, Norman, & While, 2013), despite multiple known benefits (Giné-Garriga, Roqué-Fíguls, Coll-Planas, Sitjà-Rabert, & Salvà, 2014; Hamer, Bates, & Mishra, 2011; Pahor et al., 2014). One underutilized means of facilitating older adult adherence to recommended physical activity levels is community-based physical activity programs (Bauman, Merom, Bull, Buchner, & Fiatarone Singh, 2016; Centers for Disease Control and Prevention (CDC), 2013; Farrance, Tsofliou, & Clark, 2016). More older adults participate in these programs when counseled and referred by a health care provider (Heath et al., 2012; Tuso, 2015). Counseling-and-referral interventions are, in most cases, conducted by primary care physicians who spend only minutes with patients during each visit (Dymek et al., 2015). However, frequency and length of patient contact is one of the most salient predictors of success for this type of intervention. A review by the United States Preventive Services Task Force (USPSTF) showed that low-intensity (1–30 total minutes of patient contact time across all sessions) counseling-and-referral interventions did not lead to improvement in physical activity outcomes, whereas medium (31–360 total minutes) and high (>360 total minutes) intensity counseling-and-referral interventions were associated with an average of 38 additional minutes of physical activity per week (Lin, O'Connor, Whitlock, & Beil, 2010; US Preventive Services Task Force, 2016).

Referrals from physical therapists (PTs) are a promising alternative to referrals from primary care physicians for connecting older adults to physical activity programs for several reasons. First, physical therapy (PT) care generally consists of a series of 45- to 60-min treatment sessions, enabling higher-intensity physical activity counseling. Second, diagnoses associated with later life and PT treatment, including osteoporosis, osteoarthritis, joint stiffness/reduced range of motion, pain, injury, or surgical rehabilitation, are also conditions targeted by physical activity behavioral interventions (American Physical Therapy Association, 2011; Ohtake, 2010; US Preventive Services Task Force, 2016). Third, PT treatment of older adults leads to a holistic understanding of their patients and includes comprehensive treatment (i.e., patient examination, evaluation, diagnosis, prognosis, intervention, and outcome assessment). Furthermore, evaluations assess a broad range of factors that may affect treatment in addition to the physical indication for PT care. These include vision, strength, and functional capacity limitations; response to changing conditions; and nonphysical factors that may affect learning or execution of specific skills (Guccione,

Wong, & Avers, 2012). Finally, active PT patients may be more likely to adhere to physical activity programs (Jack, McLean, Moffett, & Gardiner, 2010).

Building formal referral partnerships between evidence-based physical activity programs and PTs is one way to harness the promise the PT setting offers. Clinical–community linkages are formal partnerships between a clinical entity and a community organization, designed to help manage disease and deliver preventive care (Buckley et al., 2015; Dymek et al., 2015). Linkages are an important tool for promoting older adults' engagement in physical activity outside the clinic. Here, we use the term clinical–community linkages to describe referrals from PTs to community-based physical activity programs. However, research on such linkages in the PT setting is limited.

The purpose of this study is to assess the capacity of PTs to develop clinical–community linkages with community-based physical activity programs for older adults. Our results may inform future efforts to increase older adult physical activity by referring them from clinical providers to appropriate evidence-based programs in their communities.

Conceptual Model: Bridging Model

We used the Bridging Model to guide our study. This model is one of few existing theoretical frameworks for understanding and evaluating clinical–community linkages. The Bridging Model includes the following four foundational anchoring characteristics (hereafter, “anchors”) influencing a clinical provider's ability to partner with a community organization for patient referrals: *capacity to assess patient risk*, *ability to provide brief behavioral counseling*, *capacity and ability to make referrals*, and *awareness of community resources* (Etz et al., 2008).

Assessing patient risk are quick screening procedures integrated into practice, such as one-click operations on the electronic medical record. Risk refers to potential benefits and negative consequences of engagement in long-term physical activity in community-based programs.

Brief behavioral counseling interventions to promote physical activity generally consist of tailored discussions between patient and clinical provider mixing assessment, behavior change advice, and counseling (Lin et al., 2010).

Capacity and ability to make referrals indicates the presence of infrastructure that facilitates referrals, such as linked electronic medical record systems, or specialized referral forms to connect the patient with a known program.

Awareness of community resources requires that a clinic be aware of available community programs and that someone in the clinic possesses a deep enough understanding to navigate the system (Etz et al., 2008).

Research Design and Methods

This project was part of a larger intervention trial to increase PT referrals to an evidence-based physical activity program, EnhanceFitness. The trial is discussed in detail elsewhere (Petrescu-Prahova, Steinman, Fishleder, Harris, & Bennett, 2016). The project was approved by the University of Washington Institutional Review Board.

Data Collection

We conducted semistructured interviews (Bernard, Wutich, & Ryan, 2017) with PTs to get a detailed understanding of the capacity of PTs to develop clinical–community linkages with physical activity programs. Because our team did not have previous experience conducting research with PTs, we first conducted direct observations in PT clinics and developed the interview guide based on learnings from these observations.

Direct observation is a structured approach to gathering systematic data about physical environments, clinical processes, and patient–provider interactions (Callahan & Bertakis, 1991; Spencer, Logan, & Coiera, 2002). We observed PT clinics in the Seattle metropolitan area from April to June 2015. We selected clinics through a mixture of warm referrals from members of the research team who had an existing relationship with the clinic, and cold calls to clinics with which we had no connection. We observed physical environments and patient–provider interactions with older adults in exam rooms during scheduled appointments at varying points throughout the entire episode of care. We used a checklist to record information about the physical environment and an open-ended instrument to record notes about patient–provider interactions, focusing in particular on recommendations for activities outside the clinic (Callahan & Bertakis, 1991; Spencer et al., 2002). Participating clinics received a framed “Certificate of Research Participation” that they could display in their waiting rooms, but no monetary compensation. Four members of our research team coded field notes and identified emergent themes, which we then reviewed and discussed. From these, we identified areas to explore in-depth through interview questions.

The final interview guide was related to Bridging Model anchors. Specifically, interview guide questions covered PTs’ intention to engage in referral behaviors to community-based physical activity programs; knowledge (or lack thereof), and attitudes about community physical activity programs and referrals; provider belief about their ability to successfully refer, and barriers and facilitators to the referral process itself. Interview questions are presented in Table 1.

We used two methods to recruit PTs for interviews. We made cold calls and emails to 23 PT schools across the country, requesting they distribute a recruitment letter to their email list of practicing alumni and clinical PT partners. We made a similar request to a research partner affiliated with the Aging Section of the American Physical Therapy Association (APTA). We interviewed a different sample of PTs than we observed to gain a more nationally representative sample and capture potential differences in provider behaviors and experiences. The APTA Aging Section and 19 PT schools sent a recruiting email to practicing PTs, inviting those with a patient base of at least 30% older adults to fill out an online demographic screener as a first step to participation. We received 118 responses from potential participants. To reduce the risk for sampling bias, we stratified on the following factors: APTA membership, race/ethnicity, years in practice, and U.S. Census region. From the stratified list, we generated a random sample of 50 participants from which to enroll 30 for interviews. This number of interviews was determined a priori based on previous qualitative studies conducted by the research team (Petrescu-Prahova, Belza, Kohn, & Miyawaki, 2016). The sample size was selected to achieve both breadth and depth to reach conceptual saturation while also being feasible given participant availability and project funding. A recent study discussing principles for determining sample size for theory-based interview studies found that 30 interviews are sufficient for reaching saturation (Francis et al., 2010).

Four members of our research team conducted interviews in July 2015. Each interview began with an IRB-approved consent script that explained the purpose of the study, funders and leadership, what to expect during the interview, the anticipated burden and benefits, and advised

Table 1. Interview Questions for Physical Therapists

How do your older patients benefit from participating in community physical activity programs?
How do you decide which older patients may need additional physical activity outside of the clinic?
What makes you refer to one particular physical activity program versus another?
How often do you refer your older patients to community-based physical activity resources?
When you refer an older patient to a local physical activity program, what kind of organizations or programs do you usually refer to?
What makes you refer to one particular physical activity program versus another?
When during an older patient’s episode of care do these referrals usually take place?
What are some things that would prevent you from referring your older patients to community-based physical activity programs?
What would make it easier for you to refer your older patients to community physical activity programs?
How do you or your staff currently make it easier for your older patients to follow up on a referral to a physical activity program?
What would make it more likely (in the future) for your older patient to follow up on a referral?

participants of their rights. We verbally asked if they consented to participate and be audio-recorded. Phone interviews lasted 30–45 min, were audio-recorded, and were transcribed verbatim by a professional transcriptionist. We protected participant data confidentiality by not audio-recording any personal information such as full names or addresses and sharing audio files securely through a password-protected website. Participants were compensated with a \$75 gift card.

Data Analysis

We developed the interview codebook using a combination of emergent codes and a priori codes based on the four anchors of the Bridging Model and then coded the interviews in an iterative process (Miles, Huberman, & Saldaña, 2014). A random sample of transcripts was coded independently by two members of the research team using ATLAS.ti software. The two researchers then met and identified emergent codes that they incorporated into the codebook. After this process, the interview codebook contained 17 a priori codes and 7 emergent codes. In the iterative coding process, the researchers first discussed areas of disagreement in the sample of transcripts until reaching consensus (Bernard et al., 2017). After reaching consistent agreement in the sample of transcripts, remaining transcripts were divided and coded independently.

The second phase of analysis was to group the 24 a priori and emergent codes into 12 broader themes, which we then mapped onto one of the four anchors of the Bridging Model. Although some of the themes could be interpreted as relating to more than one anchor, we assigned them to the most relevant anchor for ease of interpretation.

We used several strategies to enhance the rigor of our findings, focusing on credibility, dependability, and transferability (Lincoln & Guba, 1985). We improved *credibility* by randomly selecting interview participants from diverse geographic areas, racial/ethnic groups, years in practice, and APTA membership, so we could address our research questions from multiple perspectives (Denzin & Lincoln, 2011). We also developed our interview guide after prolonged engagement (Lincoln & Guba, 1985) in PT clinics so that we could better understand the PT clinic setting and PT therapist and older patient interactions. *Dependability* looks at whether the study procedures are consistent and reasonably stable over time and across researchers and methods (Lincoln & Guba, 1985; Sandelowski, 1993). We included multiple research investigators from different disciplines on our study team to foster dialogue and tried to provide a context in which researchers' hidden beliefs, values, and assumptions could be revealed and contested (Miles et al., 2014). *Transferability* asks whether the research findings are transferable to other contexts and whether they have any larger import (Malterud, 2001). We have provided detailed information on sampling, data collection, and analysis for the reader to assess whether our findings are transferable to other settings (Graneheim & Lundman, 2004).

Results

The final sample of interviewees (Table 2) included only PTs whose patient population included at least 30% older adults. Participating PTs worked in a variety of settings: outpatient clinics; home health; inpatient clinics; and "multiple settings." All Census regions were included (Northeast, Midwest, West, and South). About 83% of participants were female, and 26.6% were members of racial and ethnic minorities. Age ranged from 22 years to 50 or older, and years of experience ranged from fewer than 5 to 15 or more. In the next section, we present the key themes that emerged during our analysis, organized by the four anchors of the Bridging Model.

Table 2. Characteristics of 30 Physical Therapists Participating in Telephone Interviews

Characteristic	% (n)
Gender	
Female	83.3 (25)
Male	16.7 (5)
Race	
White	73.3 (22)
Black	10.0 (3)
Asian	13.3 (4)
Unknown/prefer not to answer	3.3 (1)
Ethnicity	
Not Hispanic/Latino	86.7 (26)
Hispanic	3.3 (1)
Unknown/prefer not to answer	10.0 (3)
Age category	
22–34 years	36.7 (11)
35–50 years	33.3 (10)
>50 years	30.0 (9)
Practice setting	
Outpatient only	30.0 (9)
Inpatient and/or other only	13.3 (4)
Home health only	20.0 (6)
Multiple settings	36.7 (11)
Years in practice	
<5 years	20.0 (6)
5–9 years	26.7 (8)
10–14 years	26.7 (8)
≥15 years	26.7 (8)
Census region	
Northeast	26.7 (8)
Midwest	13.3 (4)
West	43.3 (13)
South	16.7 (5)
Recruitment source	
PT school	43.3 (13)
APTA	23.3 (7)
Other	33.3 (10)
American Physical Therapy Association Membership	
Yes	50.0 (15)
No	50.0 (15)

Anchor 1: Capacity to Assess Risk

Assessing patient risk refers to quick screening procedures integrated into practice, such as one-click operations on the electronic medical record. Risk refers to potential benefits and negative consequences of engagement in long-term physical activity in community-based programs.

Integrated, repeated risk assessment

PTs described understanding the patient's specific physical activity-related risks, needs, abilities, and health concerns when deciding what exercise was appropriate to recommend.

By the end of treatment, I have a feel for the patient and what their abilities are going to be . . . it's important that they continue to be active and not fall back down that slippery slope. (Therapist with 15 or more years of experience, home health setting)

Multiple tools are already integrated into practice to understand physical activity-related risk for continued exercise. Some tools are based on patient self-report (e.g., questionnaires), and others based on objective clinical measures (e.g., balance, range-of-motion, strength).

We use different questionnaires. We use some tests for balance. We use also a compression scale that talks about what they're doing. We use a functional scale. A lot of those scales tell us where someone might be, and if they may need an extra push to really get themselves going. (Therapist with less than 5 years of experience, outpatient setting)

It was important to get to know the patient during therapy to assess risk.

You really couldn't know how that patient is going to present by just looking at their medical record . . . really until you talk to that person you don't know. (Therapist with 5–9 years of experience, inpatient setting)

Challenges of assessment

Challenges existed in assessing physical activity-related risk in their sickest patients. Because it was often difficult to predict patient abilities, PTs did not refer to programs until they obtained a clear understanding of progress.

They [the patient] could be very incapacitated when they first come in. . . . We kind of play it by ear and we wait until we see how much they can actually accomplish and how willing they are to take the advice that we've given them. (Therapist with 15 or more years of experience, inpatient setting)

Anchor 2: Ability to Provide Brief Behavioral Counseling

Behavioral counseling interventions include condensed, tailored discussions mixing assessment, behavior change advice, and counseling.

Perceived responsibility to encourage physical activity

PTs saw encouraging physical activity outside the clinic as a responsibility and their main goal for the patient. When asked specifically about current practices to connect older adults to local physical activity programs, a participant responded, "I encourage everyone to get physical activity outside the clinic, particularly older individuals, but everyone. That's kind of our goal in therapy" (therapist with less than 5 years of experience, outpatient setting).

PTs reported counseling almost all older adult patients repeatedly throughout the episode of care. Counseling included encouragement, following up, and ensuring the patient had adequate information.

Ideally, I have people make a connection or check out the class before I discharge them, so that I can follow up with them. "How was your experience there? Is it something that you felt safe while you were doing? At least have you made the call? Do you know where the building is located, so that you can follow up in the future?" (Therapist with less than 5 years of experience, home health setting)

Helping patients understand the benefits of physical activity

Several strategies emerged to counsel patients about the benefits of physical activity. These included verbal counseling, and leveraging patients' improved mobility and physical ability after therapy.

I don't think that they've seen enough benefit that the activity and exercise can do for them. Once they are participating with therapy and they're like oh, I can walk better or oh, this or oh, that—then they're more receptive to the idea of continuing with a program. (Therapist with over 15 years of experience, outpatient setting)

Helping patients acquire barrier-breaking skills

Counseling to join physical activity programs included the reduction of instrumental barriers (i.e., systemic or financial impediments), whereas discussing programs in-depth appeared effective in reducing emotional barriers (e.g., fears of safety, performance, or not fitting in).

I do my best to get them connected with community resources to access busing or . . . some of the other community-based transit options that we have available in our area. (Therapist with less than 5 years of experience, home health setting)

Talking about program specifics helps people get over their nerves of what to expect going to a class, because they might think that it might be too hard for them, or that they can't, or that they're not fast enough to keep up. (Therapist with less than 5 years of experience, outpatient setting)

Counseling is hindered by a lack of patient motivation

Almost all PTs reported one consistent obstacle: “My chief barrier is their motivation” (therapist with 15 or more years of experience, outpatient setting).

It’s easy to become cynical and not refer, because we’re thinking the patient won’t even bother. It’s a real concern and very common. (Therapist with 10–14 years of experience, inpatient setting)

Balancing short-term recovery and long-term maintenance

Counseling targeted both short-term recovery (i.e., returning patients to their prior level of function through the prescribed home exercise program therapy) and long-term maintenance (i.e., encouraging more general healthy behavior).

Basically, after we have done the rehab and gotten into a much higher functional level . . . then we encourage them to participate. (Therapist with more than 15 years of experience, inpatient setting)

Anchor 3: Ability to Refer Patients to Community Programs

Capacity and ability to make referrals indicates the presence of infrastructure that facilitates referrals, such as linked electronic medical record systems, or specialized referral forms to connect the patient with a known program.

Lack of communication infrastructure

Interviews showed no organized systems in place to refer patients, who often went home with written materials or flyers to follow up by themselves. PTs noted they usually lost track of patients after discharge.

Really, for the most part [. . .] we get the patient the information. Once they’ve discharged from care, I really don’t have any feedback to let me know if they are continuing with it, or if they aren’t, unless the patient decides that they want to call and update me which doesn’t happen all that often. (Therapist with less than 5 years of experience, home health setting)

Some PT practices with clinics in multiple states have policies and restrictions on referral processes, such as having to offer multiple programs.

I work for a big organization . . . when I give a recommendation, I have to give several different choices. I can’t just give one. (Therapist with 5–9 years of experience, outpatient setting)

Most PTs also noted the importance of a strong communication infrastructure for any potential linkage.

The other thing would just be having better direct communication with the organizer so that I would be able to troubleshoot anything for the patient, as far as where it’s

located, or did the patient actually make contact with the group. Just kind of helping to bridge that gap. (Therapist with 10–14 years of experience, outpatient setting)

On the other hand, one therapist suggested that obtaining feedback about a patient after discharge might not be appropriate from a patient privacy perspective.

It’s kind of a tricky line once somebody is discharged from PT care as to how much kind of oversight you should have on their life after they’ve been discharged, or their episode has been discharged. Should I really be checking over them on what they’re doing activity-wise after they’ve been gone from me for two months? . . . I don’t know that it would be necessarily appropriate for me to get information about what they’re doing two months after I’ve discharged them. (Therapist with less than 5 years of experience, home health setting)

Desire for partnering with programs

There was a clear desire to build close linkages with programs. PTs felt partnerships would enable continued supervision of the patient, encourage adherence, and expand the relationship beyond referrals.

Having a relationship with something like that is like bridging the gap from therapy into the community. (Therapist with less than 5 years of experience, outpatient setting)

I mean, it just gives us a place. I develop relationships and most PTs develop relationships with their clients. Just knowing where they’re sending them and feeling comfortable about that. . . . And then if there was a relationship or a connection, you’d be able to follow your clients, or at least know how they were doing. You’d be able to check in . . . that would go a long way to helping most people feel comfortable about transitioning. (Therapist with more than 15 years of experience, home health setting)

The instructors are going to get to know those patients. They might notice a change in medical status . . . I mean, maybe a person has developed a sudden onset of vertigo, and their balance has just gone downhill. It would be nice to have kind of that back-and-forth communication just because that exercise program might spend more time with the patient and recognize things that need to be addressed. (Therapist with 10–14 years of experience, outpatient setting)

Anchor 4: Awareness of Community Resources

Awareness of community resources requires that specific community programs be available and that someone in the clinic have a deep enough understanding to navigate the system.

Lack of knowledge of community resources

Most PTs reported knowing of very few options in the community for older adults and were not aware of specific program details.

I think the main thing is just in my area kind of a general lack of options for referring patients out. (Therapist with less than 5 years of experience, home health setting) I can give them [the patient] the general information and then they have to do the research. . . . If I had more information, then I would be able to be more specific with them. (Therapist with 10–14 years of experience, multiple settings)

Sometimes we can't be that fussy [to refer to an evidence-based program]. It would be my preference, but that is not always an option. (Therapist with 15 or more years of experience, outpatient setting)

Acquiring program knowledge

Respondents generally sought knowledge by themselves about physical activity programs, which was inefficient, burdensome, and frustrating.

I was just trying to put together a list of community exercise options . . . Everybody is so separate in how they run their programs . . . and we just don't have the time to go looking for all of these programs that are out there—that we know are beneficial, but you don't know when they're offered, and whom they're going with that month. I think that it just needs to be much more transparent and accessible to providers. . . . I'm trying to market it for them. I can't find their information. It's ridiculous! (Therapist with 10–14 years of experience, outpatient setting)

They also reported relying on passive methods, such as word-of-mouth.

Once a place has gotten good success or a therapist has gotten good feedback, usually everybody is clamoring to get their patient into it next . . . Stuff spreads pretty quickly once the word is out to a group. It usually disperses out. (Therapist with less than 5 years of experience, home health setting)

PTs repeatedly expressed a desire for more efficient ways to obtain information, such as a centralized list of available programs. They wanted to learn in-depth about the programs via face-to-face meetings. PTs were enthusiastic, noting that information is all that is needed to gain buy-in.

It would be great if they stepped out to say that this is what we are; this is what we do and can we come and in-service you. I know that my facility does so much better if people are there. We get the handouts and are educated that way. We're very busy, and it's just really hard for us to look outside to see what's available, and so it would be easier if they came to us. (Therapist with 15 or more years of experience of experience, inpatient setting)

We're all desperately looking for those resources for our patients that are consistent, available, accessible, and affordable. All it would really take is just information

for us and kind of a personal commitment to the topic and to the community. That's about all it would take for us to get excited about a program. (Therapist with 10–14 years of experience, outpatient setting)

Concerns about program safety and instructor competence

Particularly lacking was knowledge about program details, such as safety. PTs pointed out the dangers of sending their older adult patients to a program they did not know or trust. Specifically, concerns were related to instructor competence and program safety.

I had a woman come in to me with a hip injury. How did she get the hip injury? She was doing standing leg lifts with an 8-lb. weight strapped to her leg, you know!? The instructor was really not aware and really didn't have the education to be providing the program, and so to me, you don't need people getting injured. They're supposed to do it and keep well, and so yes, there's the abilities of the instructor and the knowledge of the instructor. (Therapist with more than 15 years of experience, outpatient setting) I'm afraid that there isn't enough supervision or instruction [in many settings]. Our elderly population has a lot of comorbidities. I like to know where I'm sending them, or to know a little bit about the program. (Therapist with more than 15 years of experience, home health setting)

Discussion and Implications

In this study, we assessed the capacity of PTs to develop clinical–community linkages with community-based physical activity programs for older adults. To do so, we conducted semistructured qualitative interviews with a national sample of PTs. The study was informed by the Bridging Model, which includes four anchoring characteristics that influence a clinical provider's ability to partner with a community organization for patient referrals: capacity to assess patient risk, ability to provide brief behavioral counseling, capacity and ability to make referrals, and awareness of community resources (Etz et al., 2008).

We found that risk assessment and counseling were already part of routine practice for our respondents, but counseling could be further facilitated if PTs had more skills to engage less-motivated patients. PTs expressed a desire to refer their patients to community programs. However, barriers to referrals included lack of knowledge of and trust in community programs, and limited infrastructure for communicating with potential partners. In the remainder of this section, we expand on each of these findings and their implications.

Risk Assessment and Counseling Already Part of Routine Practice

PTs assessed risk of injury through patient self-report questionnaires or objective clinical measures. They provided counseling for long-term physical activity outside the clinic,

as well as counseling to support a patient's short-term recovery from an acute injury or condition. These results align with previous research that PTs feel it is their role to give patients physical activity advice and that incorporating brief physical activity counseling into regular treatment sessions is feasible (Shirley, van der Ploeg, & Bauman, 2010).

The most common deterrent to counseling, named by PTs in all settings and at all levels of experience, was the concern that patients' lack of motivation would render counseling ineffective. Previous literature found the perception of counseling as ineffective to be barrier in its provision (Hébert, Caughy, & Shuval, 2012; Shirley et al., 2010). To improve PT self-efficacy as counselors, clinics could provide training in motivational techniques, which are effective and adaptable in both the PT setting (Bland et al., 2016; McGrane, Galvin, Cusack, & Stokes, 2015) and the older adult population (Babor et al., 2007; Gum, Schonfeld, Tyler, Fishleder, & Guerra, 2016; Schonfeld et al., 2010). This amplified set of skills would allow PTs to better leverage the strong therapeutic alliance they have with their patients due to lengthy, repeated interactions that help them build rapport and gain knowledge (e.g., patient's personality, lifestyle, condition). Therapeutic alliance is a known predictor of patient adherence to PT counseling (Hall, Ferreira, Maher, Latimer, & Ferreira, 2010). A systematic review provided advice on adjusting communication strategies to further increase therapeutic alliance, including using patient-centered interactions to provide emotional support and patient involvement (Pinto et al., 2012).

Lack of Knowledge of and Trust in Community Programs

Regardless of years of experience, PTs were reluctant to refer when they lacked relevant program information and were concerned about safety and the programs' ability to serve older adults. PTs explicitly noted that detailed program information was essential not only to alleviate their own concerns, but also to help patients break emotional (e.g., anxiety about safety or fitting in) or instrumental barriers (e.g., transportation or alternative programs). Previous literature in the PT setting also found that PTs integrated more physical activity promotion when they felt confident about referring to specific physical activity programs (Shirley et al., 2010) and that information similarly breaks down barriers for patients (Conraads et al., 2012). PTs' lack of information highlights the importance of knowledge, trust, and efficient communication in clinical–community linkages.

Faced with lack of time, no consolidated resources, and the sentiment that programs should be responsible for their own marketing, PTs were frustrated about shouldering the responsibility of researching community programs. Although a few centralized lists of available community programs exist (e.g., Washington State Information Network [<https://win211.org/>] or the Arthritis Resource

Finder [<http://resourcefinder.arthritis.org/>]), it is unlikely that these would provide detailed information to guide PTs to programs or help patients navigate options. Rather, physical activity programs should initiate education and outreach. Face-to-face informational interactions (e.g., in-person meetings or community expositions) would help establish trust, build knowledge of the community program's structure and staff qualifications, and decrease concerns about the quality of programs.

Limited Infrastructure for Communicating With Potential Partners

PTs generally had no systems in place to promote communication and streamline referrals with partner organizations. However, PTs noted the potential improvements in efficiency, trust, patient adherence, and monitoring patient progress that such systems would afford. There are examples in the literature of systems that successfully increase both referrals and patient physical activity adherence. These include adding physical activity into patient records as a “vital sign” (Golightly et al., 2017; Kohl et al., 2012; Sallis et al., 2015), integrating referral systems with exercise partners (Lobelo, Stoutenberg, & Hutber, 2014), and including feedback components from partner programs (Adsit et al., 2014). To comply with federal regulations, electronic systems may need to be based in HIPAA-compliant, cloud-based servers or complementary electronic health record systems, and program staff may need to obtain relevant training (Mair et al., 2012; Menachemi & Collum, 2011).

Our results suggest approaches that could lead to successful implementation of electronic referral systems. For example, PTs' strong desire to build partnerships suggests implementation efforts could be aided by identifying and engaging champions (i.e., PTs that believe in the value of the proposed system and work actively to advocate, facilitate, and support members of the organization through implementation; Warrick, 2011). In another example, PTs' overall lack of knowledge and trust in programs suggests that referral systems should be built at the clinic level in collaboration with a trusted national organization (e.g., APTA), whose endorsement may help scale the referral system up, and overcome organizational policies restricting referrals.

Strengths and Limitations

Our study was informed by an existing conceptual model for clinical–community linkages, and we collected data using an interview guide that was based on learnings from direct observations in PT clinics. We took a number of steps to minimize the risk of various types of bias throughout our research: observers acted as unobtrusively as possible to reduce reactivity bias, and interviewers probed to capture details of the interview narrative. Furthermore,

we chose the final interview sample randomly from the set of PTs who expressed interest in participation, and we stratified the sample on important characteristics to reduce sampling bias and increase national representativeness. However, this study does not provide information about the specific demographics of older adult patients served, nor does it provide information about the relationship between PTs and the many active older adults who get exercise outside formal programs. We included PTs who represented different clinical settings to understand different contexts and patient populations that might be appropriate for EnhanceFitness referral. However, our sample was too small to allow an in-depth comparison of issues related to connecting patients from different clinical settings to community-based physical activity programs. Last, we acknowledge that our interviews focused on providers and not on the administrative representatives of the clinical systems in which the providers worked. Any referral-related innovations would need support at the system level.

Conclusion

PTs have the capacity and desire to create linkages with community-based physical activity programs. PT session length and content facilitates patient risk assessment and behavioral counseling, as well as strong therapeutic alliances between PTs and their patients. Further improvements in the effectiveness of counseling could be achieved with the integration of provider training in motivational techniques. Barriers to linkages remain, due to lack of knowledge and trust in community programs, and a lack of bidirectional communication systems. These weaknesses may be addressed through innovations in communication infrastructure, identifying clinic-level champions, and in-person outreach initiated by organizations that deliver community physical activity programs.

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Conflict of Interest

None reported.

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