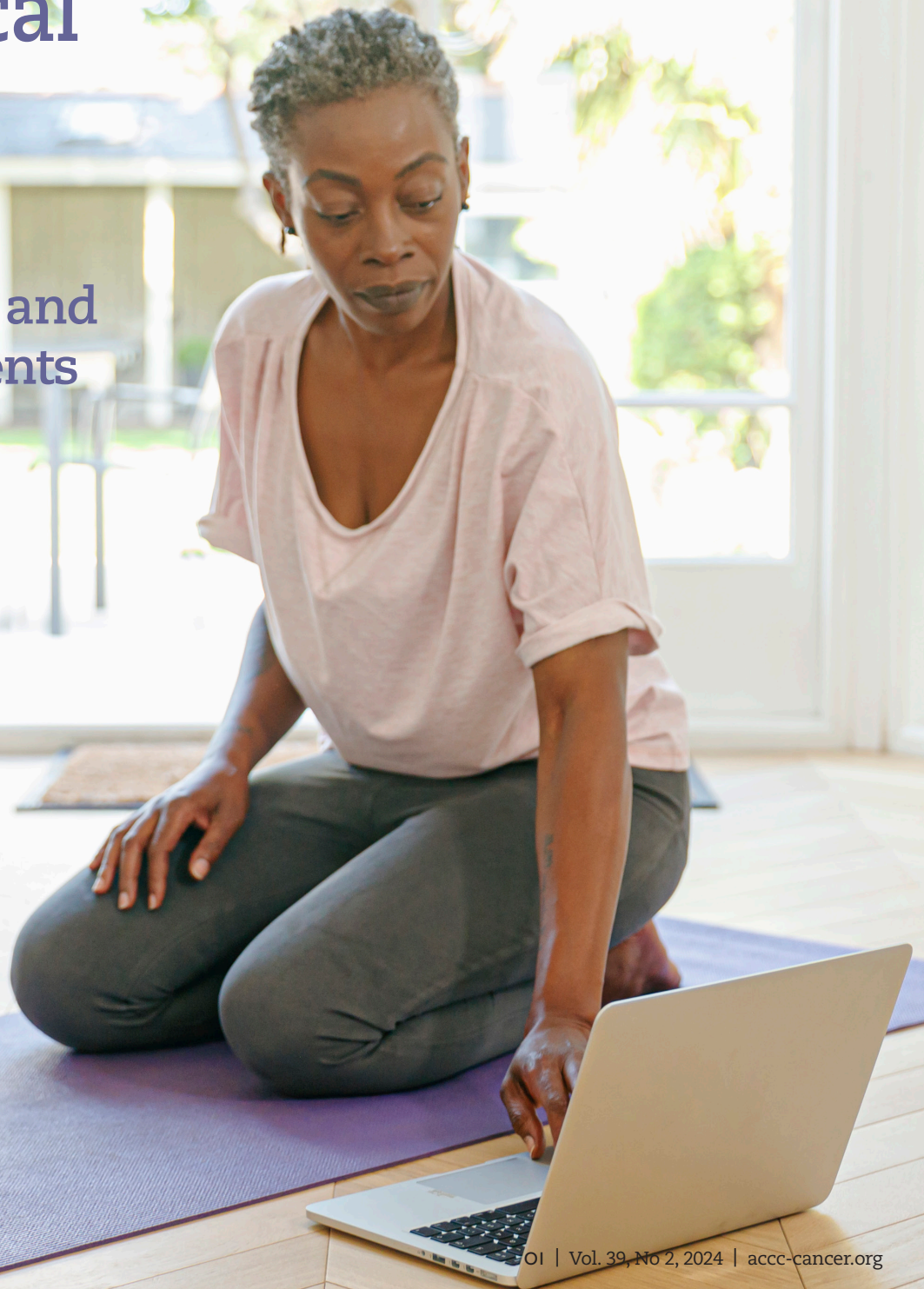

Feasibility of a Physical Activity Index in Clinical Practice

Perspectives
of Providers and
Cancer Patients



In Brief

Physical activity is a common clinical recommendation for cancer survivors, yet the use of clinical tools to counsel patients is understudied. We developed an integrated Physical Activity Index to assist with this task. The purpose of this project was to conduct interviews to assess the feasibility and clinical utility of the Physical Activity Index from both provider and patient perspectives. Our findings indicate that a Physical Activity Index may be a useful tool to facilitate productive patient-provider communication about physical activity goals.

Physical activity is a well-established clinical recommendation for older adults,¹ and it has specific benefits for cancer survivors (adults with cancer history). This finding was reaffirmed by the American Cancer Society in 2022.² For decades, physical activity has shown benefits for recovery from a variety of health conditions including cancer. Considering the global incidence and growing prevalence of cancer propelled in part by the aging of the population,³ there is interest in physical activity for cancer prevention and control. However, the ability to assess and monitor physical activity over time in clinical settings has not been fully explored.⁴

Clinicians play an important role in supporting positive behavioral changes,⁵ although there are several barriers to conducting physical activity counseling in clinical practice. Provider barriers to physical activity counseling include insufficient time, uncertainty of what to recommend, and the perception that activity counseling is too complicated or outside their skillset.⁶ New tools that facilitate the implementation of physical activity counseling in clinical practice are needed for clinical staff, including physicians and nurses.⁷

Previously, we developed an integrated Physical Activity Index screener to briefly assess physical activity in concert with relevant assessment of related behaviors, including sedentary behavior and physical performance metrics. These studies provided evidence on the efficacy of a multicomponent physical activity assessment strategy (ie, the Physical Activity Index) in estimating key health outcomes with both the general population and cancer survivors.^{8,9} However, these studies did not assess clinical utility from such stakeholders as clinicians and patients. The purpose of this project was to conduct interviews to assess the perceptions and clinical utility of the Physical Activity Index from provider and survivor perspectives.

Materials and Methods

This qualitative study used cognitive interviewing¹⁰ and a structured interview guide. Research was carried out by a team at the National

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Cancer Institute and supported by Westat, a research consulting firm with experience conducting interviews. Fidelity to the interview procedure was maintained through an interviewer training session and direct observation for approximately one third of interviews (6 patients). Study procedures were consistent with National Institutes of Health Institutional Review Board (IRB) policies for quality improvement and were also approved by the Westat IRB. Weststat conducted the interviews in February 2016 in Rockville, Maryland.

We purposively sampled 18 participants from the Washington, DC, area (9 providers and 9 posttreatment cancer survivors) for one-on-one, in-person interviews. Providers were selected from primary care or oncology practices. Eligible providers reported seeing cancer survivors regularly (ie, $\geq 10\%$ of their practice). Eligible survivors completed treatment (eg, surgery, radiation, chemotherapy) within the last 5 years; these individuals were racially diverse. All participants provided verbal consent to participate.

All interviewers were female. They presented participants with the Physical Activity Index brief screener and report card. The Physical Activity Index screener assesses minutes per day of moderate- and vigorous-intensity physical activity, hours per day of sedentary behavior

(ie, screen time), and days per week of strength training activities using validated questions. The Physical Activity Index screener is then scored as a personalized report card based on Physical Activity Index screener responses. The purpose of the Physical Activity Index report card is to help providers and patients understand how to interpret results generated through the Physical Activity Index screener and to counsel patients on their specific physical activity needs. Physical Activity Index report cards also include links to cancer-specific physical activity guidelines.² A mock-up example of the Physical Activity Index report card was used for this study. Mock ups also included examples of talking points to facilitate provider-patient conversations about results of the Physical Activity Index report card. Participants were asked about the usefulness of this tool.

Cognitive interviews took place to assess comprehension of the Physical Activity Index screener, and structured qualitative interviews were completed to evaluate perceptions and perceived clinical utility of both the screener and the report card. During cognitive interviews,

cancer survivors completed the Physical Activity Index screener while thinking aloud in the presence of an interviewer.¹⁰ Interviewers then conducted retrospective probing to address questions from the cancer survivor about completion of the Physical Activity Index screener, hesitation in responding, or changes in responses. Qualitative questions assessed perceptions of the Physical Activity Index screener and report card. Questions gauged initial reactions to the Physical Activity Index screener and report card, preferences for format of completion (paper vs electronic), clinical utility of the Physical Activity Index tool, and barriers and facilitators to using the Physical Activity Index in clinical practice.

An interview guide strengthened consistency in data collection. Interviews were audio recorded and transcribed verbatim. Cognitive interviews were analyzed using a segmented coding strategy; qualitative data were analyzed using a similar structured coding format corresponding with the interview guide. Coding and thematic analysis was supported by direct comments and quotes.

Table 1. Participant Characteristics

CLINICAL PROVIDERS (PHYSICIANS, NURSE PRACTITIONERS, NURSES)							
ID	GENDER	AGE, YEARS	CLINICIAN TYPE	POST-TREATMENT CANCER SURVIVORS, %			
C1	Male	55	Oncologist	20%			
C2	Female	49	Oncology nurse	40%-50%			
C3	Female	50	Primary care physician	10%			
C4	Female	58	Nurse/Nurse practitioner	10%			
C5	Female	59	Nurse/Nurse practitioner	10%			
C6	Male	65	Primary care physician	10%			
C7	Female	46	Oncology nurse	50%			
C8	Male	47	Oncologist	30%			
C9	Male	62	Oncologist	25%			

CANCER SURVIVORS							
ID	GENDER	AGE, YEARS	TUMOR SITE	EDUCATION	RACE	TIME SINCE CANCER DIAGNOSIS, YEARS	TIME SINCE TREATMENT COMPLETION
S1	Female	70	Breast	College	White	4	4 years
S2	Male	65	Prostate	Graduate school	White	4	3 years
S3	Male	76	Prostate	High school	Black	3	2 years
S4	Male	79	Prostate	College	White	6	5 years
S5	Female	79	Breast	Graduate school	Black	9	3 years
S6	Male	72	Prostate	Graduate school	White	7	7 years
S7	Female	65	Breast	High school	White	10	10 years
S8	Female	61	Breast	High school	Black	5	3 years
S9	Female	55	Breast	High school	Black	5	7 months

Results

Five oncology providers (3 physicians and 2 nurses) and 4 primary care providers (2 physicians and 2 nurse practitioners/nurses) were interviewed. On average, survivors were 4 years post-cancer treatment (mean age, 69 years) (Table 1).

Cognitive and Qualitative Interviews

Survivors reported that the Physical Activity Index was easy to understand and complete; however, there was confusion about how to report physical activity intensity. Survivors recommended using relatable examples like walking the dog, gardening, or heavy chores to help elucidate these differences. Additional clarification

between occupational and leisure-time physical activity was also needed. Survivors misunderstood the screen time question, which was also intended to include time sitting by a computer or other screen; some only reported time spent watching television. Strength training frequency was well understood, but few survivors engaged in strength training activities.

Perceptions of the Physical Activity Index

Most providers were receptive to the Physical Activity Index as a screener; however, they identified a need to differentiate between moderate- and vigorous-intensity physical activity as well as occupational versus leisure-time physical activity. Providers recommended simplifying and

Table 2. Exemplar Quotes From Participants

	PARTICIPANT GROUP	EXEMPLAR QUOTES
Perceptions of the Physical Activity Index	Clinical providers	<p>“It’s very simple and very user-friendly. It’s not complicated. I think even a patient [who] is not educated should be able to fill it out...This is not complicated. It is user-friendly and gives you a lot of information.” [C9]</p> <p>“It’s really good and thorough, but there are too many words for the patients. We give lots of things to fill out, different surveys for depression, sleeping habits, and we’ve noticed that the less words, the better.” [C3]</p>
	Cancer survivors	<p>“I like the way it’s laid out. You have your different points. You’ve got your different goals that you can work toward. That’s what I like about it. It’s like a report card.” [S3]</p> <p>“People are intimidated by paperwork. If it’s smaller, you become more intimidated. I would make [the font size] as big as possible.” [S2]</p>
Clinical utility of the Physical Activity Index	Clinical providers	<p>“I think it will be an excellent tool to have in your practice. At least you know how much the patient is doing at home. If they come and [the score is] low, you know you’re not doing much exercise at home. That would encourage them to do more, because there’s a result. There’s an outcome of what their status is.” [C7]</p> <p>“[The output is] a little bit [useful], but not greatly, because it takes effort to go through it. Looking at this, to me, this is not intuitive...Then on the part of the patient, [it] probably [would be] handed to me [as the patient asks], ‘OK, so what do you think, Doc?’ Then we [would ask ourselves], ‘I’m going to spend the time analyzing it for them?’” [C1]</p>
	Cancer survivors	<p>“It really gives me...good input to what I am doing okay and what I am not doing and [gives] me guidelines on how to help myself to change my routine or change the habits I have.” [S7]</p> <p>“I just know that this is not something that’s going to happen, because these doctors...don’t spend that much time with you, and they’re not going to do this. There are no nursing assistants who aren’t harried and rushed to death. I just don’t think it’s very realistic...My experience has not been spending any appreciable amount of time with a medical doctor. I think they will entertain your questions, if they’re not too long or too complicated.” [S5]</p>

shortening wording to facilitate comprehension. Overall, providers liked the report-card style output to monitor and counsel patients on lifestyle changes (Table 2) and provided some suggestions for changing the configuration of the report card. Provider preferences for Physical Activity Index format (paper vs electronic) were mixed.

Cancer survivors were also receptive to the Physical Activity Index. Survivors held positive perceptions of the Physical Activity Index report card and liked that it would be tailored specifically to them. Survivors indicated that the report card was visually pleasing and informative, although some thought there was too much text. Most survivors indicated that they prefer to complete the Physical Activity Index on paper.

Clinical Utility of the Physical Activity Index

All providers indicated that they assess physical activity in their patients but do not use a standardized tool. A standardized tool was viewed as potentially helpful, with 1 participant (C6) stating, “It will be more objective. I can see the progress and measure something in the beginning and see how it progresses or regresses.” Providers indicated it would be feasible for their patients to complete the Physical Activity Index screener in the waiting room before their appointment. Providers indicated the Physical Activity Index report card would be useful (Table 2), although some reported limited time as a concern. Patient motivation to engage in physical activity was seen as an important factor to consider. The ability to link Physical Activity Index responses to clinical records was suggested to facilitate Physical Activity Index use in practice.


Cancer survivors reported that their providers frequently recommended exercise. However, these survivors wanted additional advice on how to exercise safely with chronic health conditions. Although survivors held positive perceptions of the Physical Activity Index, they expressed concern that it would not be reasonable to expect to do this during a clinic visit. One patient (S5) stated, “I would say that most of the physicians, and especially if they’re good ones...don’t have the time. To me, it would just be very unrealistic for my doctor to do.” Most cancer survivors believed that the Physical Activity Index report card would motivate their behavior, especially if they clinicians offered extra support. Survivors indicated that it would be most useful to track their behavior with the Physical Activity Index over time and to implement results to discuss specific strategies with their clinicians.

Discussion and Conclusion

The Physical Activity Index could be feasible in clinical practice for providers and cancer survivors, especially if results could be integrated in electronic health records. All participants liked the Physical Activity Index and provided helpful suggestions to clarify instructions for its use. Provider education resources on patient counseling would facilitate use of the Physical Activity Index in primary care and oncology programs. Cancer survivors may specifically benefit from physical activity, but they could need additional support from providers to adapt physical activity goals based on individual health concerns.

This brief study was meant to affirm the need for a clinical tool that would support productive patient-provider communication about physical activity and behavioral goals. We believe that there was sufficient interest and consensus in the benefit of such a tool to continue the development of this approach.

The study’s main strength was the direct input of clinical stakeholders. These include different types of providers (physicians and nurses) with whom, and settings (oncology and primary care) in which, cancer survivors would be likely to receive physical activity counseling. Additionally, our patient participants were all older adults (mean age, 69 years) who were similar to members of the general population of cancer survivors. We also intentionally included breast and prostate cancer survivors and racially diverse participants to ensure that we had a range of perspectives on the clinical utility of materials from the patient perspective.

However, there were study limitations. We used a convenience sample to identify participants, which does not support representativeness of the population. Additional work on how to reach survivors in nonurban areas would be valuable given the evolution of the US population. 

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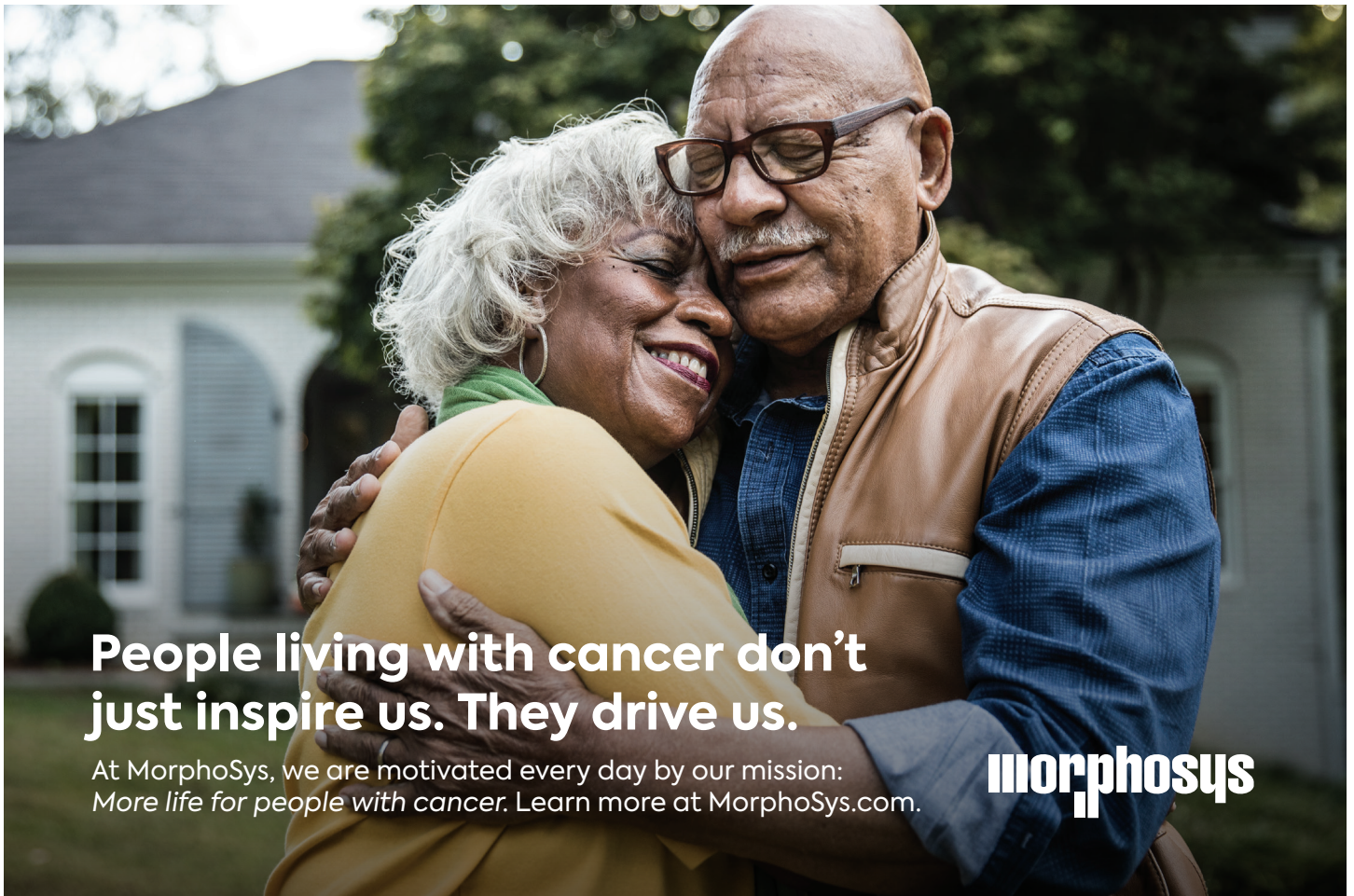
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