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Clinical Correspondence

Patient-provider discussion of physical activity among early stage lung cancer survivors

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Dear Editor,

Lung cancer accounts for approximately 14% of all new cancer cases and 28% of cancer deaths in the United States each year [1], with 52% of those diagnosed with localized disease now expected to live beyond 5 years [1]. Lung cancer survivors can experience significant ongoing symptom burden, including impairments in quality of life and high rates of dyspnea and fatigue. Evidence suggests that physical activity can enhance cardiorespiratory fitness, improve quality of life, and reduce symptom burden [2]; however, the majority of cancer survivors do not engage in sufficient physical activity to meet national guidelines (≥150 min per week of moderate intensity exercise) [3]. Participation in physical activity may be particularly crucial for lung cancer survivors who tend to be older, often have a history of smoking, and commonly suffer from comorbid conditions such as chronic obstructive pulmonary disease.

Cancer survivors remain at increased risk of cardiovascular disease, secondary cancers, and diabetes [4]. The importance of health promotion has become increasingly recognized, with the role of providers in encouraging participation in physical activity noted, along with a recommendation to include physical activity in survivorship care plans [5,6]. The majority of Americans identify their physician as their primary source of advice concerning health information [7] and the American College of Preventive Medicine recommends physical activity counseling as part of all routine patient visits. Importantly, the discussion of physical activity with an oncologist has been associated with greater patient participation in physical activity [8]; however, exercise may not be discussed as frequently as needed. A nationwide survey found that few survivors received recommendations regarding physical activity, diet, and smoking guidelines and that survivors were less likely than those without a history of cancer to receive a physical activity recommendation [9].

The goals of the current study were to (1) describe early stage lung cancer survivors' self-reported discussion of physical activity with health-care providers and (2) examine the association between sociodemographic, disease, and health behavior variables and discussion characteristics.

Materials and methods

Participants and procedure

Details of the larger study from which the reported data are extracted have been published previously [3]. To summarize, potentially eligible individuals were identified for study inclusion through review of clinical and research databases of thoracic surgery cases at a major urban cancer center. Eligibility criteria included (a) primary pathological stage IA or IB non-small cell lung cancer, (b) surgical resection from 1 to 6 years prior to study, (c) no current evidence of cancer, and (d) permission from oncologist to contact the patient. Eligible individuals received by mail a consent form and an invitation to participate in a study examining physical activity in survivors of lung cancer. Those who consented to participate completed a questionnaire packet by telephone or mail. Approval for the current study was granted by the Institutional Review Board.

Measures

Demographic and medical characteristics

Participants self-reported gender, age, education, race/ethnicity, income, smoking status, height, and weight (from

which body mass index (BMI) was calculated) and the total number of comorbid conditions based on patient self-report [10]. Electronic medical charts were also reviewed to obtain participants' time since treatment completion.

Physical activity

A modified version of the Godin Leisure-Time Exercise Questionnaire [11] was used to assess participants' current physical activity. Participants reported average number of minutes per week and frequency spent engaging in light, moderate, and strenuous leisure-time activities during a typical week, which were multiplied to provide weekly minutes of each type of activity, an approach used in the previous studies (e.g. Jones [12]).

Patient-provider discussion of physical activity

Participants reported whether the topic of exercise or physical activity had been raised in the past year with a physician or other health-care provider, and if so, who initiated the discussion, and whether a recommendation for physical activity to be increased, decreased, or to remain unchanged was made. These same questions were also asked in reference to their lung cancer treatment period.

Table 1. Patient discussion and recommendations regarding physical activity ($N = 175$)

Discussion characteristic		Results (%*)
During the last year, did topics of exercise and physical activity come up during discussions with doctor or other HCP? ($N = 173$)	Yes	112 (65%)
	No	57 (33%)
	Do not know	4 (2%)
If yes, who initiated the discussion? ($N = 112$)	You	21 (19%)
	Doctor/HCP	78 (70%)
	Do not know	13 (11%)
Were you advised to change level of exercise or physical activity? ($N = 112$)	Yes, increase	47 (41%)
	Yes, decrease	2 (2%)
	No	61 (55%)
	Do not know	2 (2%)
During your cancer treatment, did topics of exercise and physical activity come up during discussions with doctor or other HCP? ($N = 173$)	Yes	89 (51%)
	No	60 (35%)
	Do not know	24 (14%)
If yes, who initiated the discussion? ($N = 89$)	You	10 (11%)
	Doctor/HCP	71 (80%)
	Do not know	8 (9%)
Were you advised to change level of exercise or physical activity? ($N = 89$)	Yes, increase	62 (70%)
	Yes, decrease	1 (1%)
	No	23 (26%)
	Do not know	3 (3%)

HCP, health-care provider.
*Valid percentages reported.

Results

Detailed demographic details have been published previously [3]. In brief, 275 of 514 patients screened were found to be eligible for study inclusion, of which 175 (63.6%) consented and completed questionnaires. Participants were on average 68.73 (SD = 9.62) years old, predominantly Caucasian (92.6%), female (63.4%), married (62.3%), and retired (53.8%). Of the entire sample, 26% had an annual household income less than $50,000, and 35% reported income beyond $90,000. The majority of participants had been diagnosed with stage IA disease (69.7%), received surgical treatment only (91.4%), and were on average 3.62 (SD = 1.23) years since treatment.

Of the 175 participants, 90 (51.5%) were not engaging in any moderate or strenuous exercise, 41 (23.5%) were insufficiently active (active but not meeting guidelines), and 44 (25.1%) were meeting physical activity guidelines. The majority of participants (64.7%) reported discussing physical activity with their physician or other health-care provider in the past year, with 69.6% of these discussions initiated by the provider. Of those who discussed physical activity and were not meeting guidelines, half (49.4%) indicated they received no recommendation to change their level of physical activity. During cancer treatment, slightly fewer (51.5%) individuals recalled discussions of physical activity. The majority of these discussions (69.7%) resulted in a recommendation to increase physical activity among those not currently meeting physical activity guidelines. These results are presented in Table 1.

Chi-square and *t*-test analyses were conducted in order to examine the relationship between discussion of physical activity and demographic and medical characteristics. Male participants were more likely to report discussing physical activity with a health-care provider in the past year ($\chi^2(1,\ N = 169) = 5.95,\ p < 0.05$). Those who reported a recommendation to increase their activity level were less likely to be engaging in any moderate or strenuous activity ($\chi^2(2,\ N = 108) = 6.07,\ p < 0.05$) and similarly reported significantly fewer minutes of participation in moderate or strenuous activity ($t(105.9) = 2.48, p < 0.05$). During cancer treatment, those reporting a higher income level were more likely to report discussion of physical activity ($\chi^2(2,\ N = 117) = 12.11,\ p < 0.01$). Participants' smoking status, education, comorbid conditions, BMI, and time since treatment were not related to physical activity discussion characteristics at either time point.

Discussion

Although the benefit of physical activity during lung cancer treatment and survivorship has been increasingly recognized, few lung cancer survivors meet recommended levels of physical activity [3]. Comparable with prior patient surveys [13], nearly one third of early stage lung cancer survivors surveyed reported no discussion of physical activity with a health-care provider in the past year. This increased to nearly half during their treatment phase. Providers were largely responsible for initiating

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discussion of physical activity, suggesting that provider-level interventions could enhance awareness of the importance of discussing physical activity or, alternatively, brief activation patient-level interventions could encourage survivors to initiate discussion themselves.

Consistent with the previous findings [13], few differences emerged in patterns of physical activity discussion across demographic, medical, or health behavior characteristics. Notably, male participants were more likely to report discussion of physical activity in the past year than female survivors, possibly mirroring gender differences that have been documented in a variety of clinical contexts, including cardiovascular disease whereby women have been reported to consistently receive less aggressive care [14].

Importantly, of those who discussed physical activity in the past year and were not meeting guidelines, only half reported a recommendation to increase activity. This provides a conservative assessment of the number of missed opportunities to provide physical activity counseling as many individuals who should have received a recommendation to increase participation did not even discuss physical activity. While less active survivors were more likely to receive a recommendation from their provider, suggesting some problem-focused assessment and targeted discussion, the average number of minutes of exercise of those who did not receive a recommendation (105 min) was still well below the 150-min recommendation. Of note, only 48% of survivors received a recommendation to increase physical activity during discussions in the past year, compared with 71% during their treatment phase. This decrease is concerning, as health promotion should be a priority in survivorship and may warrant further examination of assessment practices and decision strategies for physical activity counseling.

The reported findings must be considered in light of study limitations. The requested information regarding discussion of physical activity during the active treatment phase was for some participants 5 to 6 years prior and may be subject to recall inaccuracies. We cannot therefore conclude that our findings are representative of current practices in cancer care. Further, information was not collected regarding health-care provider type (e.g. primary care physician vs thoracic oncologist) nor detailed characteristics of the discussion (length, questions asked, and specific advice given). In addition, the cross-sectional study design and lack of information regarding participants' physical activity level prior to their discussion with providers did not allow for the impact of physical activity recommendations on participant behavior to be assessed. Finally, the individuals surveyed were primarily Caucasian and thus caution must be used in generalizing these results to other ethnic and racial groups.

Conclusion

The current study suggests that patient-provider discussion of physical activity among lung cancer survivors is not optimal. Despite few participants meeting physical activity guidelines, a significant number had neither discussed physical activity with their provider nor received a recommendation to increase participation. Health-care providers can play a critical role in promoting health among the growing cancer survivor population. Discussion and physical activity interventions should be routine components of comprehensive survivorship care, along with cancer screening, dietary recommendations, and psychosocial services. Further work is needed to characterize discussion of physical activity, increase awareness among health-care providers, examine the impact of provider recommendations, as well as to inform interventions to enhance patient participation in physical activity.

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Key points

- Lung cancer survivors can benefit from participation in physical activity, yet evidence suggests that few individuals meet recommended levels of activity.
- Health-care providers can play a critical role in promoting such behavior; however, less is known about patient-provider discussions of physical activity in the context of survivorship.
- In the current study, patient-provider discussion of physical activity was not optimal: one third of the 175 lung cancer survivors surveyed had not discussed physical activity with their provider in the past year and even among those who did, only half received a recommendation to increase participation to recommended levels.
- Physical activity discussions and recommendations were largely unrelated to participant characteristics; although male participants tended to receive more counseling than female participants, thus suggesting a lack of guided assessment and counseling.
- This study provides insight into physical activity discussion in survivorship and a conservative estimate of missed opportunities for counseling survivors. This highlights the need for further efforts to enhance discussion of physical activity in follow-up care and examine the impact of provider recommendations.

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