Symptom Treatment Preferences of Cancer Survivors: Does Fatigue Level Make a Difference?

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Abstract

Background. Cancer-related fatigue (CRF) is among the most prevalent symptoms in cancer survivors and often co-occurs with other symptoms. However, little is known about survivors' preferences for treating CRF and associated symptoms.

Objective. The aim of this study was to examine cancer survivors' interest in learning skills to manage CRF and associated symptoms and their interest in various nonpharmacologic interventions and modalities. These outcomes were compared between survivors with high and normal fatigue.

Methods. Breast, gastrointestinal, lung, and prostate cancer survivors (N = 338) completed a 1-time survey, including a Patient-Reported Outcomes Measurement Information System fatigue measure and a checklist assessing interest in learning skills to manage CRF and associated symptoms as well as interest in nonpharmacologic interventions and modalities.

Results. Many cancer survivors reported interest in learning skills to manage CRF (range, 35%–78%) and associated symptoms (range, 13%–48%). Compared with survivors with normal fatigue (n = 180), highly fatigued survivors (n = 158; Patient-Reported Outcomes Measurement Information System fatigue *T* score ≥ 55) were more likely to report interest in learning skills to manage various symptoms, self-compassion training, and programs offered individually and in person. Interest in other interventions and modalities did not vary by fatigue level.

Conclusions. Many cancer survivors, especially those with high fatigue, report interest in learning symptom management skills. Given survivors' high level of interest in complementary

and integrative health interventions, future research should continue to assess their impact on symptoms and functioning.

Implications for Practice. Nurses can offer a menu of evidence-based options for symptom management, given survivors' diverse preferences. Nurses can also provide psychoeducation regarding their preferred treatments.

Introduction

Cancer-related fatigue (CRF) is a highly prevalent, debilitating problem in cancer survivors.[1] The National Comprehensive Cancer Network (NCCN) defines CRF as a "distressing, persistent, subjective sense of physical, emotional, and/or cognitive tiredness or exhaustion related to cancer or cancer treatment that is not proportional to recent activity and interferes with usual functioning."[2(ppFT-1)] CRF is prevalent throughout the cancer trajectory with an estimated 48% to 75% of cancer patients experiencing moderate to severe CRF during treatment and 17% to 40% experiencing CRF ≥5 years post-treatment.[3-7] Additionally, up to 90% of patients with advanced disease report CRF.[8] This symptom often co-occurs with sleep disturbance, pain, anxiety, and depressive symptoms, thus undermining quality of life.[9] Pharmacological interventions for CRF have limited evidence of efficacy; however, exercise and psychological interventions have improved CRF during and after primary cancer treatment.[10]

Although the evidence base for nonpharmacological CRF interventions is growing,[10] less is known about survivors' preferences for treating CRF and associated symptoms, which are critical for patient-centered care. The Institute of Medicine defines patient-centered care as "providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions."[11(pp6)] The Picker Institute identified eight characteristics of care that are especially important to patients: considering patients' needs, values, and preferences; coordinating care; providing high quality education to the patient and family; managing pain and other symptoms; psychosocial support; involving family members and friends; continuity of services; and access to services.[12] The conceptual model of patient-centered care emphasizes shared decision making, wherein providers describe treatment options, including their risks and benefits, and patients share their preferences and

values related to these options.[13] Thus, patients are empowered to actively participate in symptom management. Consistent with this conceptual framework, medical patients receiving preferred treatments are more likely to adhere to interventions and recommendations, resulting in improved health outcomes.[14] Patient preferences also inform new directions for symptom management research.

A few studies have examined preferences for treating CRF and associated symptoms such as depression and insomnia. Among hospitalized patients with various cancers in Switzerland (N = 160), preferred CRF treatments included managing nutritional deficiencies (32%), sleep medication (31%), emotional distress counseling (30%), bed rest (28%), progressive physical activity (26%), and complementary medicine (24%).[15] Regarding depression treatments, breast cancer patients (N = 32) preferred counseling alone (31%), anti-depressant medication alone (16%), counseling plus anti-depressants (19%), and wait-and-see or other non-evidence-based approaches (34%).[16] Regarding insomnia treatment, qualitative findings suggested that cancer patients with sleep difficulties preferred group over individual therapy and acupuncture over cognitive-behavioral therapy.[17,18]

Other studies have examined cancer survivors' interest in health promotion and cancer rehabilitation. Most of this research has focused on interest in exercise interventions, with the majority of post-treatment survivors and advanced cancer patients showing interest.[19-21] A study of cancer patients (N = 456) in Ireland, however, found that interest in exercise varied by fatigue level; although 50% were interested in exercise, 51% of fatigued survivors reported an inability to exercise or uncertainty about their ability to exercise.[22] In a population-based Swedish study, survivors' (N = 728) preferred interventions for cancer rehabilitation included psychoeducational groups (34%), lectures about cancer (30%), social work services (29%), individual cardio or

weight training with a physiotherapist (range, 28%-29%), an online support group (27%), and yoga (22%).[23] Preferred treatment modalities (e.g., online, phone, group, individual) have rarely received attention in the cancer survivorship literature.

Building on this limited research, the aims of this study were as follows: (1) among survivors with high and normal fatigue, determine the percentage interested in learning skills to manage CRF and associated symptoms (e.g., pain, sleep problems, depression) as well as various non-pharmacologic interventions (e.g., exercise, massage, mindfulness meditation) and intervention modalities (e.g., in-person, phone, computer, individual, group); and (2) compare high and normal fatigue groups regarding their interest in the services and modalities stated above while controlling for demographic and clinical covariates.

Methods

The present study is a secondary analysis of cross-sectional survey data from cancer survivors recruited from a public hospital, an academic medical center, and an affiliated clinic in the midwestern U.S. The university's institutional review board approved study procedures. Eligible survivors were: a) diagnosed with breast, gastrointestinal, lung, or prostate cancer; b) ≥3 weeks post-diagnosis of stage IV cancer or had completed primary treatment for stage I or II cancer ≥6 months ago (recent or ongoing endocrine therapy was allowed); c) ≥18 years old; d) fluent in English; and e) did not show evidence of severe cognitive impairment (<3 errors on a validated cognitive screener)[24] or other impairment precluding participation. A cut-off of three or more errors on the six-item cognitive screener had a sensitivity and specificity of 88.7 and 88.0, respectively, for a diagnosis of dementia.[24]

Participants were recruited between February and October 2018. Potential participants at the three study sites were identified through institutional cancer registries, and eligibility was

confirmed through medical chart review. Potentially eligible patients were mailed a study information sheet and introductory letter containing contact information for opting out of the study. Research assistants called patients who did not opt out to administer the cognitive screener[24] and seek verbal informed consent. Consenting patients self-reported demographics, health outcomes, and treatment preferences online or via a mailed paper survey, depending on their preference. Reminder calls were made as necessary, and for those sent an online survey, automated emails also served as reminders. Once the survey was received, participants were mailed a $25 gift card. Cancer information was collected from medical records.

The present study used author-constructed checklists to assess survivors' interest in learning skills to manage CRF and associated symptoms, interest in nonpharmacologic interventions, and interest in intervention modalities (see items in Table 1). Similar checklist formats have been tested in prior research on different treatment preferences of cancer survivors.[15,22] In our study, the list of nonpharmacological interventions included exercise and other empirically-supported treatments for CRF[2,25] as well as theoretically relevant interventions requiring further testing for CRF (e.g., resilient coping skills training, self-compassion training).[26,27] The 4-item Patient-Reported Outcomes Measurement Information System (PROMIS) fatigue measure was used to determine high vs. normal fatigue groups.[28] PROMIS measures have undergone rigorous testing[29] and have evidence of reliability and validity in cancer survivors.[30] PROMIS scores are transformed into T-scores such that 50 represents the mean for the U.S. general population and the standard deviation around that mean is 10. Highly fatigued participants had T-scores ≥55, whereas T-scores <55 were considered within normal limits.[31]

Descriptive statistics were calculated, and t-tests and chi-square tests were used to compare high and normal fatigue groups on demographic and medical factors. For aim 1, we computed the percentage of high and normal fatigue groups that showed interest in learning skills to manage CRF and associated symptoms and various nonpharmacologic interventions and intervention modalities. Then preliminary logistic regression analyses were run to identify demographic and medical correlates of study outcomes. For aim 2, logistic regression analyses were conducted to determine whether survivors with high and normal fatigue differed with respect to study outcomes. These analyses controlled for demographic and medical variables significantly correlated with the respective outcomes.

Results

Of the 701 survivors who received recruitment mailings, 592 (84%) were reached by phone. Of those reached, 99 (17%) refused to participate, and 29 (5%) were ineligible or deceased. Thus, 464 consented and 430 (93%) completed the survey. Sixteen completers were later deemed ineligible due to a stage III diagnosis or lack of treatment for stage I or II cancer. Of the remaining 414 survey completers, only participants who 1) checked at least one treatment preference and 2) completed the PROMIS fatigue measure and other main study measures were included in primary analyses (N = 338), with 47% (n = 158) of these respondents meeting criteria for high fatigue.

Descriptive statistics for demographic and medical variables by fatigue level are found in Table 2. Compared to survivors in the normal fatigue group, highly fatigued survivors were more likely to be unmarried ($\chi^2(1, 338) = 4.47$, $p < .05$), unemployed ($\chi^2(1, 338) = 7.70$, $p < .01$), have a lower income ($\chi^2(4, 338) = 19.46$, $p < .01$), and advanced stage disease ($\chi^2(1, 338) = 4.26$, $p < .05$). Highly fatigued survivors were also less likely to have prostate cancer ($\chi^2(3, 338) = 8.60$, p

< .05) and receive surgery for their cancer ($\chi^2(1, 338) = 4.44$, $p < .05$). Certain demographic (i.e., age, gender, race, marital status, income, employment status, education level) and medical factors (i.e., time since diagnosis, cancer type, cancer stage, cancer treatments) were correlated with some treatment preferences (*Ps* < .05) and were included as control variables in primary analyses when applicable.

Regarding aim 1, both high and normal fatigue groups were most interested in learning skills to manage fatigue, sleep problems, and fear of cancer recurrence (range, 27%-78%; see Figure). In addition, both fatigue groups were most interested in trying exercise, massage, and mindfulness meditation (range, 29%-53%). Regarding intervention modalities, both fatigue groups preferred individually delivered, in-person programs, followed by programs involving a family member, a peer group, or computer delivery (range, 29%-58%).

Regarding aim 2, significant differences in treatment preferences were observed between the high (n = 158) and normal (n = 180) fatigue groups (see Figure). The high fatigue group reported greater interest in learning skills to manage fatigue ($B = -1.83$, $P < .001$), sleep problems ($B = -.94$, $P <.001$), depression ($B = -1.18$, $P < .001$), anxiety ($B = -.73$, $P = .01$), stress ($B = -.84$, $P < .01$), and pain ($B = -.75$, $P =.01$). However, interest in learning skills to manage fear of cancer recurrence and clouded thinking did not differ by fatigue group. Interest in most specific interventions (e.g., exercise, massage, mindfulness meditation) and modalities (e.g., computer, workbook, phone) also did not vary by fatigue group. However, the high fatigue group reported greater interest in self-compassion training ($B = -.95$, $P < .01$) and programs offered individually ($B = -.53$, $P = .02$) and in-person ($B = -.60$, $P = .01$).

Discussion

Many cancer survivors, especially those with high fatigue, reported interest in learning skills to manage CRF and associated symptoms. Large subgroups of survivors were also interested in trying specific interventions, including exercise, massage, and other complementary and integrative health approaches (e.g., mindfulness meditation, tai chi, qigong, yoga). Survivors' intervention interests parallel their high use of complementary and integrative health care[32] but contrast with low enrollment rates in exercise trials and adherence to physical activity guidelines.[33,34] However, the present sample's reported interest in exercise is similar to that found in another survey of breast, prostate, and colorectal cancer survivors that did not assess fatigue level.[35] In our study, interest in specific interventions, except for self-compassion training, did not vary by fatigue level. Given the negative impact of fatigue on functioning,[36] highly fatigued survivors might have viewed self-compassion as more relevant to their experience than those with normal fatigue.

Highly fatigued survivors were more interested in programs offered individually or in-person than those with normal fatigue; however, all other modality preferences were similar between the two groups. Given their greater symptom burden, highly fatigued survivors may have been more motivated to seek care and therefore had greater interest in in-person and individually administered interventions. Large subgroups of survivors, irrespective of fatigue level, were most interested in programs offered individually (range, 47%-58%), followed by programs with a family member or in a peer group (range, 31%-37%). Additionally, survivors had more interest in in-person and computer-based modalities than phone-based modalities. In another survey of cancer survivors, rates of interest in health behavior change interventions, regardless of modality, were generally low.[35] However, similar to the current study, cancer

survivors were more interested in computer-based interventions (28%) and those delivered in clinic (17%) compared to phone-based modalities (range, 9%-17%).[35]

In the current study, gender was not associated with fatigue level, but highly fatigued survivors were less likely to have prostate cancer. Previous research with long-term survivors found that women reported higher fatigue then men;[37] however, this gender difference was not replicated among metastatic cancer patients.[38] Regarding cancer type, lung cancer patients had a higher prevalence of moderate-to-severe fatigue than patients with breast, colorectal, or prostate cancer across phases of care.[39] In another study, prostate cancer patients were less likely to experience high fatigue than breast cancer patients at the start of radiation.[40] Further research may determine whether disease and treatment characteristics or gender-related factors (e.g., menopausal symptoms) are more predictive of fatigue.

Limitations of the current study should be noted. The checklists for assessing interest in services warrant further testing. Results provide preliminary evidence of one checklist's validity, as having high fatigue was associated with interest in learning skills to manage CRF and related symptoms. Our results are limited by the sample's prevalence of White cancer survivors from the midwestern U.S. Thus, findings may not generalize to ethnic minorities or those in other geographic regions. Additionally, analyses included the 82% of eligible respondents who endorsed at least one treatment preference and completed other main measures. Future research should include an option to indicate no interest in any treatments. Finally, the cross-sectional design did not allow us to examine change in treatment preferences over the cancer trajectory, and symptom treatment history was not assessed.

Implications for Practice

Our results indicate that many highly fatigued survivors are interested in learning skills to manage CRF and associated symptoms. Nurses have the unique opportunity to spend considerable time with patients and are trusted professionals from whom patients often take advice. Thus, nurses can assess for symptoms and offer psychoeducation regarding patients' preferred interventions, such as those specified in the Oncology Nursing Society's (ONS's) "Putting Evidence into Practice" (PEP) resources.[41] Given survivors' diverse intervention preferences, nurses may offer a range of evidence-based options for symptom management to facilitate patient-centered care. In this framework, patient values, needs, and intervention preferences are paramount.[12] As survivors in our study were often interested in addressing multiple symptoms, nurses can introduce interventions that target symptom clusters. In general, interventions such as cognitive-behavioral skills have been shown to improve the pain, fatigue, and sleep disturbance cluster in cancer patients.[42] However, in a randomized trial with advanced cancer patients, a cognitive-behavioral intervention had limited effects on the pain, fatigue, and sleep disturbance cluster relative to cancer education.[43] Further rigorous testing of interventions for symptom clusters is needed.

According to a review of ONS, NCCN, and American Society of Clinical Oncology (ASCO) guidelines, 47 nonpharmacologic strategies are recommended for two or more symptoms, four of which are recommended for nine or more symptoms.[44] Across the three guidelines, the only recommended strategy for pain, fatigue, and sleep disturbance based on moderate to strong evidence is cognitive-behavioral therapy.[44] Guidelines show partial agreement in recommending the use of psychoeducation, exercise, and mindfulness-based stress reduction for these symptoms. Although growing evidence supports mindfulness-based stress

reduction for CRF and related symptoms,[43,45] less is known about the impact of broader complementary and integrative health approaches on CRF.

Conclusion

Many cancer survivors, especially those with high fatigue, report interest in learning skills to manage CRF and associated symptoms. Offering a range of evidence-based options for symptom management may help meet survivors' diverse needs and preferences to facilitate patient-centered care. Given survivors' high level of interest in complementary and integrative health interventions, future research should continue to assess their impact on symptoms and functioning.

References

1. Bower JE. The role of neuro-immune interactions in cancer-related fatigue: Biobehavioral risk factors and mechanisms. *Cancer.* 2019;125(3):353-364.
2. National Comprehensive Cancer Network. Cancer-Related Fatigue (Version 2.2020). https://www.nccn.org/professionals/physician_gls/pdf/fatigue.pdf. Accessed August 3, 2020.
3. Servaes P, Verhagen C, Bleijenberg G. Fatigue in cancer patients during and after treatment: Prevalence, correlates and interventions. *Eur J Cancer.* 2002;38(1):27-43.
4. Jones JM, Olson K, Catton P, et al. Cancer-related fatigue and associated disability in post-treatment cancer survivors. *J Cancer Surviv.* 2016;10(1):51-61.
5. Reinertsen KV, Cvancarova M, Loge JH, Edvardsen H, Wist E, Fosså SD. Predictors and course of chronic fatigue in long-term breast cancer survivors. *J Cancer Surviv.* 2010;4(4):405-414.
6. Bower JE, Ganz PA, Desmond KA, et al. Fatigue in long-term breast carcinoma survivors: A longitudinal investigation. *Cancer.* 2006;106(4):751-758.
7. Thong MSY, Mols F, Wang XS, Lemmens VEPP, Smilde TJ, van de Poll-Franse LV. Quantifying fatigue in (long-term) colorectal cancer survivors: A study from the population-based Patient Reported Outcomes Following Initial treatment and Long term Evaluation of Survivorship registry. *Eur J Cancer.* 2013;49(8):1957-1966.
8. Solano JP, Gomes B, Higginson IJ. A comparison of symptom prevalence in far advanced cancer, AIDS, heart disease, chronic obstructive pulmonary disease and renal disease. *J Pain Symptom Manage.* 2006;31(1):58-69.
9. Oh HS, Seo WS. Systematic review and meta-analysis of the correlates of cancer-related fatigue. *Worldv Evid-Based Nu.* 2011;8(4):191-201.

10. Mustian KM, Alfano CM, Heckler C, et al. Comparison of pharmaceutical, psychological, and exercise treatments for cancer-related fatigue: A meta-analysis. *JAMA Oncol.* 2017;3(7):961-968.

11. Institute of Medicine (US) Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century.* Washington (DC): National Academies Press (US); 2001.

12. Gerteis M, Edgman-Levitan S, Daley J, Delbanco T. *Through the Patient's Eyes: Understanding and Promoting Patient-Centered Care.* San Francisco, California: Jossey-Bass; 1993.

13. Barry MJ, Edgman-Levitan S. Shared decision making—The pinnacle of patient-centered care. *N Engl J Med.* 2012;366(9):780-781.

14. Robinson JH, Callister LC, Berry JA, Dearing KA. Patient-centered care and adherence: Definitions and applications to improve outcomes. *J Am Acad Nurse Pract.* 2008;20(12):600-607.

15. Luthy C, Cedraschi C, Pugliesi A, et al. Patients' views about causes and preferences for the management of cancer-related fatigue—a case for non-congruence with the physicians? *Support Care Cancer.* 2011;19(3):363-370.

16. Reece JC, Chan Y-F, Herbert J, Gralow J, Fann JR. Course of depression, mental health service utilization and treatment preferences in women receiving chemotherapy for breast cancer. *Gen Hosp Psychiatry.* 2013;35(4):376-381.

17. Davidson JR, Feldman-Stewart D, Brennenstuhl S, Ram S. How to provide insomnia interventions to people with cancer: Insights from patients. *Psychooncology.* 2007;16(11):1028-1038.

18. Garland SN, Eriksen W, Song S, et al. Factors that shape preference for acupuncture or cognitive behavioral therapy for the treatment of insomnia in cancer patients. *Support Care Cancer.* 2018;26(7):2407-2415.

19. Albrecht TA, Taylor AG. Physical activity in patients with advanced-stage cancer: A systematic review of the literature. *Clin J Oncol Nurs.* 2012;16(3):293-300.

20. Szymlek-Gay EA, Richards R, Egan R. Physical activity among cancer survivors: A literature review. *N Z Med J.* 2011;124(1337):77-89.

21. Wong JN, McAuley E, Trinh L. Physical activity programming and counseling preferences among cancer survivors: A systematic review. *Int J Behav Nutr Phys Act.* 2018;15(1):48.

22. Blaney J, Lowe-Strong A, Rankin-Watt J, Campbell A, Gracey J. Cancer survivors' exercise barriers, facilitators and preferences in the context of fatigue, quality of life and physical activity participation: A questionnaire–survey. *Psychooncology.* 2013;22(1):186-194.

23. Ohlsson-Nevo E, Alkebro I, Ahlgren J. Cancer patients' interest in participating in cancer rehabilitation. *Acta Oncol.* 2019;58(12):1676-1683.

24. Callahan CM, Unverzagt FW, Hui SL, Perkins AJ, Hendrie HC. Six-item screener to identify cognitive impairment among potential subjects for clinical research. *Med Care.* 2002;40(9):771-781.

25. Bower JE. Cancer-related fatigue—Mechanisms, risk factors, and treatments. *Nat Rev Clin Oncol.* 2014;11:597-609.

26. Mosher CE, Secinti E, Li R, et al. Acceptance and commitment therapy for symptom interference in metastatic breast cancer patients: A pilot randomized trial. *Support Care Cancer.* 2018;26(6):1993-2004.

27. Dodds SE, Pace TW, Bell ML, et al. Feasibility of Cognitively-Based Compassion Training (CBCT) for breast cancer survivors: A randomized, wait list controlled pilot study. *Support Care Cancer.* 2015;23(12):3599-3608.

28. Cella D, Riley W, Stone A, et al. The Patient-Reported Outcomes Measurement Information System (PROMIS) developed and tested its first wave of adult self-reported health outcome item banks: 2005–2008. *J Clin Epidemiol.* 2010;63(11):1179-1194.

29. Magasi S, Ryan G, Revicki D, et al. Content validity of patient-reported outcome measures: Perspectives from a PROMIS meeting. *Qual Life Res.* 2012;21(5):739-746.

30. Jensen RE, Moinpour CM, Potosky AL, et al. Responsiveness of 8 Patient-Reported Outcomes Measurement Information System (PROMIS) measures in a large, community-based cancer study cohort. *Cancer.* 2017;123(2):327-335.

31. Cella D, Choi S, Garcia S, et al. Setting standards for severity of common symptoms in oncology using the PROMIS item banks and expert judgment. *Qual Life Res.* 2014;23(10):2651-2661.

32. Keene MR, Heslop IM, Sabesan SS, Glass BD. Complementary and alternative medicine use in cancer: A systematic review. *Complement Ther Clin Pract.* 2019;35:33-47.

33. Adams RN, Mosher CE, Blair CK, Snyder DC, Sloane R, Demark-Wahnefried W. Cancer survivors' uptake and adherence in diet and exercise intervention trials: an integrative data analysis. *Cancer.* 2015;121(1):77-83.

34. Troeschel AN, Leach CR, Shuval K, Stein KD, Patel AV. Physical activity in cancer survivors during "re-entry" following cancer treatment. *Prev Chronic Dis.* 2018;15:170277.

35. Martin EC, Basen-Engquist K, Cox MG, et al. Interest in health behavior intervention delivery modalities among cancer survivors: A cross-sectional study. *JMIR Cancer.* 2016;2(1):e1.

36. Siefert ML. Fatigue, pain, and functional status during outpatient chemotherapy. *Oncol Nurs Forum.* 2010;37(2):E114-E123.

37. Husson O, Mols F, van de Poll-Franse L, de Vries J, Schep G, Thong MS. Variation in fatigue among 6011 (long-term) cancer survivors and a normative population: A study from the population-based PROFILES registry. *Support Care Cancer.* 2015;23(7):2165-2174.

38. Cheung WY, Le LW, Gagliese L, Zimmermann C. Age and gender differences in symptom intensity and symptom clusters among patients with metastatic cancer. *Support Care Cancer.* 2011;19(3):417-423.

39. Cleeland CS, Zhao F, Chang VT, et al. The symptom burden of cancer: Evidence for a core set of cancer-related and treatment-related symptoms from the Eastern Cooperative Oncology Group Symptom Outcomes and Practice Patterns study. *Cancer.* 2013;119(24):4333-4340.

40. Garrett K, Dhruva A, Koetters T, et al. Differences in sleep disturbance and fatigue between patients with breast and prostate cancer at the initiation of radiation therapy. *J Pain Symptom Manage.* 2011;42(2):239-250.

41. Johnson LA. Putting evidence into practice. *Clin J Oncol Nurs.* 2014;18 Suppl:2-4.

42. So WKW, Law BMH, Chan DNS, Xing W, Chan CWH, McCarthy AL. The effect of nonpharmacological interventions on managing symptom clusters among cancer patients: A systematic review. *Cancer Nurs.* 2020;43(6):E304-E327.

43. Kwekkeboom K, Zhang Y, Campbell T, et al. Randomized controlled trial of a brief cognitive-behavioral strategies intervention for the pain, fatigue, and sleep disturbance symptom cluster in advanced cancer. *Psychooncology.* 2018;27(12):2761-2769.

44. Kwekkeboom KL, Wieben A, Stevens J, Tostrud L, Montgomery K. Guideline-recommended symptom management strategies that cross over two or more cancer symptoms. *Oncol Nurs Forum.* 2020;47(5):498-511.

45. Xie C, Dong B, Wang L, et al. Mindfulness-based stress reduction can alleviate cancer-related fatigue: A meta-analysis. *J Psychosom Res.* 2020;130:109916.

Table 1. Author-Constructed Checklists Assessing Survivors' Symptom Treatment Preferences

Table 2. Characteristics and Comparisons of Normal and High Fatigue Groups

Figure. Treatment Preferences of Survivors with High vs. Normal Fatigue. *$P < .05$.