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A Survey of Interventions for Cancer Survivors Provided by Occupational Therapy Practitioners

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Abstract

Purpose: Currently, there is a lack of research exploring evidence-based occupational therapy intervention practices at the activity level in survivorship care, which is important to identify for future research and clinical needs of the profession. The purpose of this study was to describe what activity level interventions OT practitioners are using and report any practice trends that might exist. **Method:** A cross-section design was used with non-probability purposive sampling to recruit occupational therapy practitioners working with adults living with and beyond cancer. A three-phase process for survey development and implementation was used, as recommended by the literature, for improving content validity and minimizing measurement error. **Results:** A total of 267 surveys were distributed and 70 surveys returned (26.20% response rate). Given the range and frequency of responses, it is suggested that occupational therapy practitioners focus on individual needs for function and participation and are not limiting practice to physical impairments. There were several areas that only a small percentage of respondents identified addressing with clients, including shopping (range 5.83-9.23%), driving and community mobility (range 5.90-9.58%), and financial management (range .74-10.20%) that typically fall into outpatient and community health practice settings. **Conclusion:** We reviewed current oncology intervention and referral practice trends for occupational therapy and pose several implications for advancing clinical practice in oncology. Future research into interventions not supported by literature that occupational therapists identified currently using in practice is needed.

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A Survey of Interventions for Cancer Survivors Provided by Occupational Therapy Practitioners

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ABSTRACT
Purpose: Currently, there is currently a lack of research exploring evidence-based occupational therapy intervention practices at the activity level in survivorship care, which is important to identify for future research and clinical needs of the profession. The purpose of this study was to describe what activity level interventions OT practitioners are using and report any practice trends that might exist. **Method:** A cross-section design was used with non-probability purposive sampling to recruit occupational therapy practitioners working with adults living with and beyond cancer. A three-phase process for survey development and implementation was used, as recommended by the literature, for improving content validity and minimizing measurement error. **Results:** A total of 267 surveys were distributed and 70 surveys returned (26.20% response rate). Given the range and frequency of responses, it is suggested that occupational therapy practitioners focus on individual needs for function and participation and are not limiting practice to physical impairments. There were several areas that only a small percentage of respondents identified addressing with clients, including shopping (range 5.83-9.23%), driving and community mobility (range 5.90-9.58%), and financial management (range .74-10.20%) that typically fall into outpatient and community health practice settings. **Conclusion:** We reviewed current oncology intervention and referral practice trends for occupational therapy and pose several implications for advancing clinical practice in oncology. Future research into interventions not supported by literature that occupational therapists identified currently using in practice is needed.

Keywords: occupational therapy intervention, cancer survivorship, oncology

INTRODUCTION

More individuals are surviving cancer diagnosis and treatment today than in previous decades.[1] Yet, impairments in body functions and structures, including the physical and psychosocial side effects associated with cancer treatment, can influence overall quality of life (QOL) and restrict an individual's participation in daily activities.[2] The body functions and structures potentially affected by secondary conditions of cancer and the medical treatment of cancer, may include cognitive impairments, fatigue, psychosocial issues, sexual dysfunction, lymphedema, pain, and neuropathy.[3-4] These impaired body functions and structures may result in participation restrictions in activities of daily living (ADL), instrumental activities of daily living (IADL), social participation, work, and education.[5] The side effects of cancer and their impact on participation and activities can occur at any time across the cancer care and survivorship continuum. Side effects and subsequent limitations can arise as early as the time of diagnosis, or can occur years after cancer treatments have ceased, any time in between.[6] Additionally, these participation restrictions and activity limitations can be long-lasting; resulting in cancer survivorship now being redefined as a chronic condition.[7]

Scholars have identified a pressing need to optimize function and decrease disability across the cancer population. They further indicated that there needs to be concerted efforts toward identifying patterns of referral and practice in rehabilitation in cancer care from the point of diagnosis.[8] Additionally, there is a need for rehabilitation professionals to be involved in shared decision-making regarding rehabilitation to provide comprehensive cancer care and to maximize the functional capabilities of those with or surviving cancer.

Currently, there is literature documenting occupational therapy (OT) interventions especially with a treatment focused at the impairment level in acute, inpatient, and outpatient settings.[4,9] Researchers have explored the interventions that occupational therapists provide in acute and inpatient oncology care, with an additional focus on what services were billed for in oncology care in the two practice settings.[9] With this exploration, inpatient and acute care practice settings represented 65% of the 167 participants, and researchers found that 90% of OT practitioners reported focusing their interventions on physical impairments, weakness, fatigue, and ADL. These results suggest that occupational therapists are primarily providing physical interventions for oncology patients.[9] Silver and Gilchrist provide a review which highlights the need for and the role of occupational therapy and physical therapy in working with cancer survivors on the physical and mental impairments of musculoskeletal issues, management of pain, fatigue and endurance, balance and falls, lymphedema, and psychosocial issues.[4] The authors do not identify interventions or trends in occupational therapy that focus on participation or activity. These articles provide examples of the ongoing need for exploring current OT intervention at the participation and activity level.

There is burgeoning literature that focuses on various OT interventions in specific oncology populations. Newman et al explored the feasibility, acceptability and potential effectiveness of an activity focused cognitive self-management program for fifteen breast cancer survivors.[10] Activity challenges, activity level, subjective cognitive function and quality of life were measured at baseline, at the end of the program, and three months after completion. Researchers found that after the program, participants reported high satisfaction with skills related to confidence in problem-solving and goal setting. Additionally, post-program assessments showed significant increases in self-perceived performance and satisfaction in daily living, participation, cognitive impairment, and physical and functional wellbeing.[10] While Newman et al found positive results, this was a pilot study that only included breast cancer survivors and the intervention was focused solely on one side effect.

Only one occupational therapy study has included survivors of multiple cancers with a focus on improving participation by identifying a myriad of cancer sided effects and applying self-management principles to reduce activity limitations.[11] Polo et al evaluated the impact of a 4 week community Occupational Therapy Health and Wellness Program (OT-HAWP) on self-perceived satisfaction and performance of daily activities, health-related quality of life, sleep quality, and fatigue among adults living with and beyond various cancer diagnoses.[11] The four week intervention consisted of 90-minute occupational therapy group sessions including education on side effects and their impact on participation, identification of strategies to overcome activity limitations and improve participation.[11] Researchers found statistically significant differences for all outcomes.[11]

In a two arm, randomized control trial researchers studied the effectiveness of occupational therapy and physical therapy on functional activities and strength/endurance needs in older adults with cancer.[12] Researchers used a single-institution outpatient occupational therapy and physical therapy facility and recruited adults 65 years and older with a recent diagnosis or recurrence of cancer within 5 years.[12] At follow-up, both groups experienced a decline in functional status, yet activity expectations and self-efficacy scores were improved in the intervention group. Additionally, the authors found barriers in the implementation of the intervention program including recruitment, concerns about cost, distance, scheduling, and limited amounts of treatment provided.[12] The authors further recommend that future research is needed to further identify and address barriers to the access and use of occupational therapy and physical therapy services with the cancer population.[12]

Although there is a growing body of literature in occupational therapy intervention, there continues to be a lack of evidence exploring current OT intervention practices that support participation across the cancer care continuum. Understanding the particular types of interventions that occupational therapists provide daily to individuals living with and beyond cancer is essential to identify clinical needs and future research for rehabilitation. Information about current practice in OT for this population could aid in understanding gaps in the quality of care delivered to clients. Further, understanding current OT practice is the first step towards implementing evidence in practice critical for supporting knowledge translation.[13] Therefore, the purpose of this study was to describe the interventions that OT practitioners are using in cancer survivorship care and identify practice trends that might exist

METHODS

Design

For this project, a cross-sectional design was used with purposive sampling to identify occupational therapists who work specifically in oncology care. Using recommended procedures, a three-phase process for survey development and implementation was used.[14-15] Phase One included an expert review of the original questionnaire that was developed after a thorough review of intervention literature. In Phase Two, we used another expert review process to pilot the changed survey and to improve content validity, minimize measurement error, and assess the survey's possible success.[14-15] The study reported here is the results of Phase Three of the overall project which is the pivotal phase that included implementation of the final survey with data collection and analysis. Data were collected via Qualtrics Survey Software, which allowed for lower costs, convenient data gathering, and the recruitment of a large number of participants.[16-17] This study was approved by a university institutional review board.

Development of the Survey Instrument

Phase One

For Phase One, we developed an initial 19-item questionnaire to analyze practice trends in OT survivorship care based on a literature review of chronic side effects of cancer, and evidence-based occupational therapy interventions from a two-part systematic review.[20-21] Questions were designed specifically for OT interventions targeting performance issues due to pain, fatigue, neuropathy, cognitive impairments, sexual dysfunction, psychosocial issues, and lymphedema. First, five expert reviewers with at least three years of experience providing OT intervention in oncology from diverse OT practice settings, including inpatient, outpatient, home health, and skilled nursing facilities, provided feedback on questions to establish the content validity of the questionnaire. After we reached a saturation of data with expert reviewers' feedback, changes were made to the questionnaire and the result was a 25-item pilot questionnaire.

Phase Two

In Phase Two, also known as the pilot phase, eleven participants completed the 25-item pilot questionnaire developed from Phase One. Data were analyzed, and the information was used to improve the questions to enhance clarity, reading flow, and add additional recommended areas of OT intervention. These changes contributed to the final survey.

Phase Three

After incorporating changes in Phase Two, a final 34-item survey was finalized for Phase Three, the pivotal phase. This pivotal survey included closed, partially closed-ended, and a text box for participants to add any interventions used that were not listed to get a more comprehensive perspective of current OT interventions in survivorship care. See Appendix A for the final rendition of the survey.

Participants

Participants were identified from personal contacts, professional networks, and online resources to identify occupational therapy practitioners working in acute care and rehabilitation who provide intervention for persons with cancer.[18-19] In occupational therapy, there is no formal mechanism through state or national organization membership for practitioners to identify a specialty practice in oncology, nor a way to identify a role in treating clients with cancer. Therefore, we used non-probability purposive and snowball sampling to recruit participants in these practice settings for this study. Specifically, we used national organization communication platforms, professional organization special interest groups, Facebook groups, and personal contacts. Inclusion criteria consisted of English-speaking OT practitioners who identified as working in rehabilitation or acute care settings with adult (18 years+) cancer survivors in the US. All participants indicated consent before completing the survey.

Data Analysis

The analysis was completed on the data from Phase Three, the final survey. The data were collected using Qualtrics software.[16] Descriptive and frequency statistics were used to summarize demographics and responses to the final survey.

RESULTS

There were 267 surveys sent to OT practitioners around the United States. Of these 267 surveys, 82 surveys were returned; however, two lacked informed consent, and ten were partially completed resulting in 12 discarded surveys. Data from the remaining 70 participants surveys were analyzed, yielding a 26.2% response rate. Practitioners working in acute settings represented 44% (n=31) of the respondents, whereas practitioners working in skilled nursing represented 2.8% (n=2). See Table 1 for data on practice settings and caseload of participants.

Table 1. Demographic characteristics of Participants (n=70)

Variable	n	%
Practice Setting	31	44.4
Acute	21	30.6
Outpatient	8	11.1
Inpatient	2	2.8
SNF	8	11.1
Home Health		
% Caseload Cancer		
Less than 30%	40	57.1
31%-60%	12	17.1
Greater than 61%	18	25.7
% Caseload Age of Patients		
18-39 years old	17	24.7
40-46 years old	27	38.5
65+ years old	26	36.8

Current Practice Trends

Caseload

We asked the participants at what time in the survivorship journey they first intervened with their clients. Respondents reported seeing cancer survivors before receiving active treatment (15.04%, n=29), while actively receiving life-saving treatment (30.57%, n=59), receiving sustaining quality of life care (25.91%, n=50), and post-treatment remission (28.50%, n=55). Figure 1 includes a visual of when participants first intervene with their clients along the survivorship continuum.

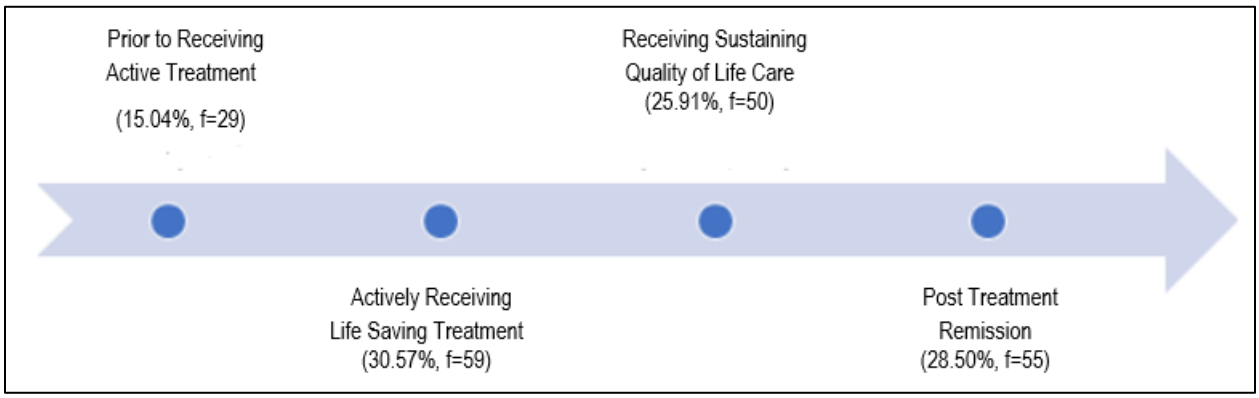

Figure 1. Time in Survivorship Continuum OT is Initiated

Referrals

Therapists were asked to identify the referral sources for occupational therapy. The respondents were able to identify multiple referral sources. The top three referral sources were from medical oncologists (17.79%, n= 58), medical doctors/hospitalists/physiatrists (15.03%, n=49), and primary care physicians (PCPs) (14.11%, n=46). See Table 2 for further information on referral sources.

Table 2. Referral Source to Occupational Therapy Services

Professional Recommendations for OT Services	Percent
Medical Oncologist	17.79%
Medical Doctor/Hospitalist/Physiatrist	15.03%
Primary Care Physician	14.11%
Surgical Oncologist	11.96%
Neurosurgeon/Neurologist	8.59%
Rehab Professionals (Speech Language Pathologist, Physical Therapist)	8.28%
Patient Navigator/Case Manager/Care Coordinator/Discharge Coordinator	6.44%
Radiation Oncologist	5.83%
Oncology Nurse	5.83%
Oncology/Medical Social Worker	2.76%
Psychiatrist	1.84%
Other: Critical Care, Automatic Order Set from ADL Screening, Palliative Care Nurse Practitioner, Nurse Practitioner, Home Health Aid	1.53%
Total	100.00%

Intervention of Occupation Across Side Effects

Recognizing that specific side effects will impact ADL and IADL differently, therapists were asked what activity interventions were used for each side effect. The majority of therapists addressed specific ADL and IADL interventions (see Table 3) that depended on the side effect(s) that the individual client experienced. For instance, Bathing/Showering was addressed by 5.5% - 12.2% of the respondents, with the highest percentage being addressed with Fatigue. Sexual Activity was addressed by .7% to 61% of the respondents and specifically addressed with 61% of the respondents who had clients with sexual dysfunction. Other areas that participants reported as frequently being addressed were Social Participation (range 19% - 40%) and Leisure (range 20% -26%). Participants expressed minimally addressing some areas of activity in therapy including Communication Management (range 1.8% - 9%) and Religious and Spiritual Activities (range .78% - 9.5%). Table 3 provides details of the activities used in interventions across the specific side effects.

Table 3. Results

	Pain		Neuropathy		Fatigue		Cognitive Impairment		Lymphedema		Psychosocial Issues		Sexual Dysfunction	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
ADL														
Bathing/Showering	46	16.6	35	15.42	59	17.20	46	16.25	26	15.57	22	14.47	1	5.56
Toileting/Toilet Hygiene	34	12.27	29	12.78	50	14.58	43	15.19	19	11.38	21	13.82	2	11.11
Dressing	54	19.49	43	18.94	59	17.20	43	15.19	32	19.16	24	15.79	1	5.56
Swallowing/Eating	9	3.25	2	0.88	12	3.50	13	4.59	8	4.79	7	4.61	0	0.00
Feeding	13	4.69	20	8.81	27	7.87	26	9.19	11	6.59	9	5.92	0	0.00
Functional Mobility	57	20.58	46	20.26	61	17.78	45	15.90	28	16.77	26	17.11	1	5.56
Personal Device Care	15	5.42	11	4.85	17	4.96	22	7.77	14	8.38	10	6.58	1	5.56
Personal Hygiene/Grooming	45	16.25	38	16.74	53	15.45	43	15.19	25	14.97	25	16.45	1	5.56
Sexual Activity	4	1.44	3	1.32	5	1.46	2	0.71	4	2.40	8	5.26	11	61.11
IADL														
Financial Management	2	0.74	5	2.08	13	3.62	35	10.20	2	1.56	13	5.42	0	0.00
Health Management	46	16.97	41	17.08	43	11.98	44	12.8	31	24.22	28	11.67	5	100
Home Management	42	15.50	37	15.42	50	13.93	41	11.95	19	14.84	21	8.75	0	0.00
Care of Others	30	1.07	24	10.00	39	10.86	23	6.71	12	9.38	24	10.00	0	0.00
Care of Pets	20	7.38	17	7.08	33	9.19	17	4.96	7	5.47	16	6.67	0	0.00
Child Rearing	17	6.27	9	3.75	21	5.85	14	4.08	7	5.47	19	7.92	0	0.00
Communication Management	5	1.85	6	2.50	11	3.06	31	9.04	2	1.56	18	7.50	0	0.00
Driving & Community Mobility	16	5.90	23	9.58	28	7.80	30	8.75	12	9.38	20	8.33	0	0.00
Meal Preparation & Cleanup	45	16.61	38	15.83	56	15.60	37	10.79	15	11.72	23	9.58	0	0.00
Religious/Spiritual Activities	6	2.21	3	1.25	12	3.34	12	3.50	1	0.78	23	9.58	0	0.00
Safety/Emergency Maintenance	17	6.27	19	7.92	22	6.13	37	10.79	9	7.03	21	8.75	0	0.00
Shopping	25	9.23	18	7.50	31	8.64	22	6.41	11	8.59	14	5.83	0	0.00
Other Occupations														
Social Participation	46	20.63	37	20.33	55	21.57	41	23.43	21	19.09	44	25.43	6	40.0
Leisure	52	23.32	42	23.08	57	22.35	41	23.43	22	20.00	40	23.12	4	26.67
Rest/Sleep	59	26.46	35	19.23	59	23.14	25	14.29	25	22.73	29	16.76	3	20.0
Work	39	17.49	40	21.98	49	19.22	35	20.00	25	22.73	32	18.50	1	6.67
Education	27	12.11	28	15.38	35	13.73	33	18.86	17	15.45	28	16.18	1	6.67

Specific Interventions Per Side Effect

Pain

Respondents reported directly addressing pain (84.29%, n=59). Interventions addressing pain involved education and problem-solving (18.21%, n=59), cognitive-behavioral strategies (15.12%, n=49), and promotion of self-management of flare-ups (14.81%, n=48).

Neuropathy

Respondents reported directly addressing neuropathy (78.57%, n=55) with a variety of interventions. Such interventions included compensatory and adaptive strategies (46.55%, n=54), cognitive-behavioral strategies (22.41%, n=26) and sensory stimulation (19.83%, n=23).

Fatigue

Fatigue interventions were reported as the most commonly utilized (98.57%, n=69). In practice, participants reported using interventions such as energy conservation (21.10%, n=65), education (20.78%, n=64), and light exercise (18.18%, n=56).

Cognitive Impairment. In regards to cognitive intervention, (80%, n=56) of respondents reported that they were directly addressing cognitive impairments when working with cancer survivors. In practice, participants reported using interventions such as compensatory strategies (36.08%, n=57), cognitive strategy training programs (25.32%, n=40), memory training (21.52%, n=34), and cognitive-behavioral interventions (15.82%, n=25).

Lymphedema

Respondents reported directly addressing lymphedema during service provision (50%, n=35). Top listed interventions implemented were exercise regimens (19.75%, n=32), compression garments (14.20%, n=23), and manual lymphatic drainage (16.05%, n=26).

Psychosocial

Psychosocial issues were reported being addressed by respondents (68.57%, n=48). In practice, participants reported using interventions such as self-management (23.04%, n=44), problem-solving therapy (16.23%, n=31), and mindfulness-based therapy (14.14%, n=27).

Sexual Dysfunction

Respondents reported addressing sexual dysfunction (20.29%, n=14). Interventions utilized focused on modifying sexual activity (30.77%, n=12), energy conservation (20.51%, n=8), and modifications or activity changes, and adaptive tools such as lubricants, vibrators, etc. (15.38%, n=6).

DISCUSSION

The primary purpose of this study was to describe the interventions that practitioners are using in the acute care and rehabilitation settings for cancer survivorship care and to identify any practice trends that might exist. The respondents identified acute care as the most frequent practice environment. Representation of responses from OTs in community-based settings such as outpatient and home health were at lower rates in total than the acute care setting. This response rate appears to align with several authors indicating increased availability of rehabilitation services in acute care settings.[1,2,22,23] Although Occupational Therapy (OT) services continue to be needed within acute care, therapists in this setting, by nature of the timing of intervention related to diagnosis, cannot address the late side effects that impact ADL and IADL performance.

A critical first step in rehabilitation practice is appropriate referrals; therefore, we asked participants what the referral sources for their practice were. Respondents indicated that medical oncologists and Hospitalist/Physiatrists in acute care refer to OT services at more than double the rate of primary care physicians (PCPs) care in the community. It is likely that a cancer survivor is followed by a medical oncologist in the community who would be the primary medical provider in addressing any cancer related concerns or side effects. Hwang et al found an underutilization of OT services for survivors that had completed cancer treatment (4.5% of the sample referred to OT).[2] One possible explanation for this low referral rate to OT services from PCPs could be their lack of understanding of OT's scope of practice and service provision to this population. If a lack of referral is attributed to limited knowledge about OT's scope of practice, education and advocacy efforts can serve to bridge this gap and improve patient care in the primary care setting.[24] Another potential explanation for the low referral rate is that individuals living with and beyond cancer often do not feel prepared to recognize or report their side effects and performance deficits to their PCPs.[25] Those living with and beyond cancer may benefit from a survivorship care plan that provides education and resources to address the side effects of treatment.[23,26]

In the responses, several areas of ADL performance were identified by only a small percentage of respondents as being addressed with clients. These areas include shopping, driving and community mobility, financial management, and sexual activity. These activities would traditionally be addressed in an outpatient or community practice setting. These results are not surprising given the larger number of participants who worked in acute care where community-based activities are not typically addressed. Given the range and frequency of responses, it appears that occupational therapy practitioners that participated in this study, focus on individual needs for function and participation and are not limiting practice to physical impairments. This information is in contrast to published work which states that occupational therapy interventions are focused on physical activity interventions.[9] A focus on daily activities is imperative as there is evidence that higher hospital spending on occupational therapy is associated with lower readmission rates.[27] Stout et al indicate there is a nationwide need for rehabilitation that focuses on the functional needs of the patients and begins at the time of diagnosis and continues throughout the course of illness and recovery.[8] Stout et al further recommended that rehabilitation services be provided by trained rehabilitation professionals who use evidence-based practices to evaluate and treat the physical, cognitive, and functional impairments associated with the cancer population.

Our findings support the current literature that provides strong to moderate evidence for occupational therapy interventions and supports efficacy in rehabilitation practice.[20,28-30] Respondents reported using evidence-based interventions for cancer-related pain including education and problem-solving. Interventions for neuropathy included cognitive-behavioral strategies, and interventions for fatigue included light exercise which are supported by literature. Furthermore, the role of occupational therapy in rehabilitation contributes positively to the overall functioning of a facility. Evidence shows that when hospitals have higher spending on occupational therapy which focuses on daily activities and function, there are lower readmission rates and subsequently improved overall spending.[27] Therefore, both the clients and the facility benefit when occupational therapy is provided.

Our findings suggest that cancer survivors are being referred to OT along the cancer care continuum. Yet, the percentage in this study is still low (28.5%). This is supported by Pergolotti et al who found that only 32% of older adult cancer survivors received OT services within two years of their cancer diagnosis.[31] Additionally, other researchers indicate that many cancer survivors continue

to experience impairments in function and have unmet needs that occupational therapy might address for individual's post-cancer treatment.[2]

We found that cognitive compensatory strategies were the most frequently identified cognitive intervention used in practice. Yet, there is a lack of research supporting these interventions. Indeed, Giles et al challenged the profession of occupational therapy to define and use cognitive intervention strategies based on function and based on evidence.[32] Future research studies exploring the efficacy of cognitive compensatory strategies that are being used in practice would contribute support for such use in practice.

Approximately half of the participants reported addressing lymphedema. Interventions included exercise routines, provision and wear of compression garments, and performance of manual lymphatic drainage. Each of these interventions is strongly supported by evidence.[20]

Over half (68%) of the respondents reported addressing psychosocial concerns with their clients, using self-management, problem-solving therapy, and mindfulness-based therapy. In a systematic review of effective interventions for stress and anxiety in cancer survivors, Hunter et al indicated there is strong evidence for cognitive-behavioral therapy and educational interventions to reduce anxiety and depression.[21] Further, Hunter et al found moderate evidence for the use of life review interventions in improving the quality of life of cancer survivors; however, this intervention was also not reported as an intervention used by the occupational therapists in this study.[21]

Few respondents identified addressing sexual dysfunction with intervention. Given the majority of the respondents practiced in acute care and this practice setting focus is on medical issues, ADLs, and safety, this is a logical outcome. Also, given that sexuality is a complicated topic, and not one that is frequently prioritized by clients, they may not want to discuss such with the OT. Community-based practice settings could be a more appropriate setting to address cancer-related sexual dysfunction.

Limitations

In cancer care and oncology, the subsection of practicing therapists from the profession of occupational therapy is much smaller than the total number of practitioners. Further, there is no formal mechanism for occupational therapy practitioners to identify expertise or practice areas specific to cancer care and oncology. This limited the identification and recruitment of practitioners in this specific area of practice, thereby impeding recruitment. Therefore, the results of this study are limited in generalizability due to the sample size and response rate. The response rate of 26% was approximately midpoint to the recommended liberal (5%) and stringent conditions (58%) for survey response rates.[33]

A further limitation is the unequal distribution of responses from various practice settings. Specifically, the number of respondents from acute care settings was over-represented compared to other practice settings. Respondents working in inpatient, skilled nursing, and home health were underrepresented. The focus of intervention is likely different from setting to setting, so it is difficult to generalize results across all oncology settings. However, recognizing that cancer survivors have many unmet daily activity needs, it is encouraging to see the number of therapists addressing ADL and IADL and integrating evidence-based interventions across all settings. In our study the respondents were not given definitions for levels of care. Concepts such as "receiving quality of life care," "actively receiving life sustaining treatment," and "post-treatment remission" could be confusing and lead to a variety of responses. Therefore, it may be difficult to generalize results across a care continuum.

Another limitation of the study is the lack of questions related to the evaluation information that informs practice. Ideally, the evaluation of clients directs interventions and the choice of evaluation tools is an important step in the intervention process.[34] Yet the intent of this study was specifically on the interventions in current survivorship care.

Implications for Practice

The results of this study have the following implications for interdisciplinary care of cancer survivors and the role of occupational therapy in cancer care:

- There is a range of daily activities that appear to be minimally addressed with clients, especially IADLs that address participation in the community and late side effects that interfere with participation. OT practitioners in outpatient and community settings might consider expanding interventions and practice to include IADLs such as financial management, driving and community mobility, religious and spiritual activities, safety management, and sexual activities that are not being addressed in acute and inpatient care.
- Education of referral sources such as PCPs, oncologists, nurse practitioners, nurse navigators, and care coordinators on the role of occupational therapy in cancer care is imperative to assure survivors receive adequate care for their performance needs after cancer treatment. Increasing the presence of occupational therapy in primary care settings may

help bridge the gap in access to services and assist with direct education to the value of occupational therapy with referral sources. Communication between OT practitioners to build connections with key referral sources will likely increase referrals to needed occupational therapy services for cancer survivors.

- Alongside the need for education to occupational therapy's distinct value in survivorship care, referral sources could also benefit from a screening tool to indicate the need for these OT survivorship services. This could be an important tool to empower interdisciplinary referral sources to occupational therapy for those survivors who have activity limitations and participation restrictions with daily activities.
- Additionally, OT practitioners can lead screening and referral planning (how to and when to refer) in primary care settings, community ,and outpatient care to assure survivors are receiving needed OT services.[26] Comprehensive occupational therapy screening across all daily activities will lead to more effective evaluation and directed and individualized interventions to improve participation restrictions and decrease activity limitations with IADLs of financial management, driving and community mobility, religious and spiritual activities, safety management, and sexual activities.

Future Research

For the profession to recognize the link between evaluation and intervention, future researchers could identify how OT's are evaluating individuals with cancer and how evaluation findings affect intervention choices.[34] Further, this study identifies several intervention strategies occupational therapists are using for specific cancer-related side effects. Many of these interventions have little efficacious support in oncology literature, including self-management interventions, energy conservation strategies, and sensory stimulation, to name a few. Research is needed to identify the efficacy and outcomes of specific interventions for addressing cancer-related participation limitations.

CONCLUSION

With this study, we identified occupational therapy practice patterns in the survivorship care continuum, including practice settings, referral sources, and intervention patterns. Identifying the specific interventions across specific cancer-related side effects contributes to the growing body of literature related to occupational therapy practice with cancer survivors. We pose several implications for advancing clinical practice in oncology, including the need for referrals, education of interdisciplinary care providers on the role and benefits of occupational therapy and the need for continued evidence for practice outcomes..

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