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Stress Matters: A Case Report in Occupational Therapy for Cancer-Related Cognitive Impairment

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Stress Matters: A Case Report in Occupational Therapy for Cancer-Related Cognitive Impairment

Abstract

Background: This case report details occupational therapy (OT) for a woman with breast cancer experiencing cancer-related cognitive impairment (CRCI), referred to OT for memory strategies.

Method: Preliminary subjective and cognitive screenings were completed with further/finer assessment diarized.

Results: While the cognitive aspect of CRCI is often addressed via OT, in this case, stress was the most prevalent barrier to function reported. Stress was identified as: impacting occupational engagement, CRCI presentation, interfering with return-to-work goals, and accentuated given the COVID-19 pandemic. A common cancer-specific stress screening tool appeared inadequate in identifying the impact and interplay of stress on function, necessitating a more narrative exploration around these themes. Intervention details, clinical reasoning, and outcomes are profiled in this case report.

Conclusion: Current published literature showcases the multi-factorial nature of CRCI, highlighting stress as an important, though often overlooked, factor, and thus an area for OT practice growth. Developing the OT approach to functional management of CRCI involves further exploration and appreciation of the relationship between stress and function. Clinical case studies offer a foundation and serve as a first step for expanding the value of OT in approaching CRCI and stress from a functional perspective, particularly considering the stressors of the current pandemic.

Comments

The authors declare that they have no competing financial, professional, or personal interest that might have influenced the performance or presentation of the work described in this manuscript.

Keywords

breast cancer, cancer-related cognitive impairment (CRCI), case report, function, occupational therapy, stress

Credentials Display

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Breast cancer care has seen advances in disease detection and control, and as a direct effect of these medical advancements, breast cancer survivorship has improved. In turn, there is a need to consider the impact of cancer on life post treatment (Cardoso et al., 2017). Subsequently, the occupational therapy (OT) approach to post-cancer sequela, specifically cancer-related cognitive impairment (CRCI), a condition for which there is no current gold standard of treatment, is not yet well established (Braveman & Newman, 2020). CRCI appears to be common, affecting up to 75% of cancer survivors (Moore et al., 2019), and persistent, with negative consequences on quality of life. CRCI impacts cognitive domains, including, but not limited to, processing speed, language, executive function, and memory (Moore et al., 2019).

CRCI is common in breast cancer populations, with up to 77% of breast cancer patients reporting cognitive symptoms during or after treatment (Van Dyk & Ganz, 2021). As these symptoms impact participation and function, occupational therapists should be vested in understanding and responding to CRCI in holistic and meaningful ways for patients. Through the use of a case report, the practice relevance and importance of a well-rounded oncology OT approach to CRCI will be shared. This case study showcases the need for contemplating, establishing, and formalizing oncology OT roles that attend to and include a tailored approach to individualized symptom presentations rather than simply targeting the more widely known OT care pathways for cognitive symptom management. In this case study, particular attention to stress as a barrier to performance and engagement is explored. Importantly, as will be shared in the case report, the unique contribution of OT in stress-management interventions offers a functional perspective and, therefore, can compliment and be collaborative with an inter or multidisciplinary care plan.

Patient Information

"Gloria," the patient, is a 48-year-old, married, Canadian female currently on disability leave from her work as a legal assistant at a busy, local real estate law firm. She has supportive adult children who live in the same province, and Gloria is excited for her first grandchild to arrive in the spring.

Brief Medical History

Gloria was diagnosed with Stage 3, left-sided breast cancer late in 2020, and her oncologic treatments included surgery, chemotherapy, and radiotherapy. She has a past medical history of medically controlled hypertension, and otherwise, she was healthy prior to her breast cancer diagnosis.

OT Referral Details

Gloria was referred to OT from a cancer-specific community-based exercise program for "memory strategies," as she was noted to have difficulty following instructions and recalling details of her exercise routine. Gloria was not familiar with OT prior to her initial session.

Context

This case study took place during the COVID-19 pandemic in a Canadian health care clinic. Sessions were virtual (including an initial assessment and an intervention session), and treatment included arranging sub-referrals and establishing a tailored care plan for future OT sessions. Standardized assessments used in the initial assessment included the Montreal Cognitive Assessment (MOCA; MOCA Cognitive Test, 2016) and the Edmonton Symptom Assessment Scale Revised (ESAS-R; Hui & Bruera, 2016). These tools will be discussed in the session findings below. The sessions occurred over 2 months in 2021, with future sessions scheduled. Consent for OT consultation and treatment was obtained, and the choice to carry out sessions virtually was based on Gloria's preferences. Gloria's occupational profile was

explored through the Person Environment Occupation (PEO) model (Law et al., 1996). The PEO model offers a tool and template to examine the relationship of a cancer survivor in context and through their occupations (Loh, 2021).

Clinical Findings

Occupational Profile

The occupational profile was obtained through the interplay of the PEO model as it applied to Gloria.

Gloria indicates her interests as baking, knitting, and watching TV with her husband. She notices she does not have as much initiative for these activities as she once had. When she is engaging in these tasks, Gloria sometimes loses her focus and cannot initiate them, or mid-task she just stops engaging and cannot complete them. She is feeling lonely, isolated, and stressed since the pandemic, as she is not able to spend as much time with her social and support network. She has been relying more on virtual and video interactions but does not find these interactions as satisfying compared to in-person visits. Gloria is hoping that the pandemic may be in a better state so that she can feel comfortable spending more time with the grandchild due to arrive in the spring. She confirms her marital status with a supportive husband and her work status, noting that her return-to-work timeline is likely in the next 9 months.

Gloria reflects that her habits have changed during the pandemic. She feels she was exercising less before joining the cancer exercise program she had just completed. She worries that she will "go back to old ways" now that she does not have someone to coach her. Gloria has no accessibility concerns with living in her bungalow home, though she feels more tired usual when bringing laundry up and down the stairs.

Physically, she experiences cancer-related fatigue, left shoulder and chest tightness and tenderness, which were all targeted in the recent in-person cancer exercise program. Emotionally, she reports feeling "burdened" and "sad" since the breast cancer diagnosis. She is starting to get more stressed as she approaches her upcoming oncology appointments for follow-up scans and consultation with her oncologist for fear that the cancer has returned. Since diagnosis, she has been followed regularly by providers in psychology, spiritual care support, and psychiatry. She has been feeling disconnected from her faith community, more so during the pandemic, and notes that this bothers her. She adds that she is concerned about her ability to return to work from the perspective of her stamina, cognitive abilities, as well as a sense of uncertainty about her safety in light of the pandemic. She mentions an intention to see OT about this but wishes to diarize this type of consultation in the future once she has a better sense of the required return-to-work timeframe after meeting with her doctors at next month's check-up appointments.

She recounts that her job as a legal assistant in a real estate law firm requires a lot of attention to detail. Her office is set up as a shared office setting with paralegal colleagues, and it can be quite noisy at times, and the proximity to other workers increases her fear of contracting COVID-19.

Medications recently prescribed for anxiety and depression by psychiatry seem to be helpful, according to Gloria. However, she is getting used to them and thinks the medications may be contributing to her reduced energy and feelings of drowsiness. She wants to ask the psychiatrist about this at her upcoming visit. She also notices that she is eating to soothe feelings of boredom, loneliness, and preoccupations about her overall health, future, and nutritional choices. She does not have the drive or energy to focus on healthy eating like she used to, and this disappoints her, as she feels now is the time that she really ought to be focusing on her nutrition as she continues to recover from her breast cancer and

treatments. Her sleep is often interrupted, and she has frightening dreams that awake her, the content of which is usually around her breast cancer recurring and/or the pandemic worsening and her catching COVID-19. When questioned, she admits she has been staying awake late to search news, articles, and Twitter feeds regarding the pandemic. This may raise her stress level and impact sleep negatively.

The cancer exercise program staff who referred Gloria to OT had also provided her with a CRCI fact sheet for her information, which she says she has had a chance to skim over. She notices that her memory is not what it used to be. She finds that she loses her train of thought and is more easily distracted. She recounts that she used to be able to do her banking easily on her own. Now, she has been asking her husband to double-check the numbers and account information for any mistakes. She mentions that it was hard to keep track of the names of the other patients in the exercise group, even though she saw them over many weeks. She is very concerned about changes in her cognitive presentation and reports that she perseverates on thoughts about being dependent on others and unable to return to her job. She reports these thoughts in particular interfere with her sleeping and creep up as she engages in daily activities, distracting her from previously routine tasks, like cooking or cleaning. She reports that her oncologists are already aware of the cognitive changes that Gloria is reporting during the OT intake.

Timeline

The timeline from Gloria's breast cancer surgery until her upcoming OT sessions is detailed from December 2020 to 2022. Refer to Table 1, which outlines the historical and current information from this episode of care.

Table 1

Episode of Care Timeline and Details

December 2020	Breast cancer surgery.
January 2021	Chemoradiation scheduled and begins.
End of September 2021	Completion of in-person community exercise program. Referral to OT by the community exercise program.
Early to Mid- October 2021	Virtual initial OT assessment at cancer care center, sub-referrals to neuropsychology, yoga, and CRCI multidisciplinary education class arranged. The CRCI multidisciplinary education class includes review of CRCI factors and preliminary nutritional, occupational, and psychological strategies. Home-based knitting project begins; knitted blanket for first grandchild whose due date is in April 2022.
Early November 2021	Virtual led yoga program begins. Virtual OT follow-up, treatment Session 1 and future session planning. Medical and radiation oncology follow-up appointments.
Mid-December 2021	Booked for virtual CRCI education class and in-person neuropsychology appointment. In-person OT follow-up, treatment Session 2 appointment scheduled for January 2022. Patient, doctor, and insurance team plan for graduated return-to-work date of May 2022.

Diagnostic Assessment (Details of OT Assessment)

In the initial session documented above, Gloria's reports of concerns and stressors, particularly in the context of perseverating thoughts interfering with activity engagement, led to the use of the National Comprehensive Cancer Network (NCCN) distress thermometer (NCCN, 2020). Gloria rated her stress levels to be 9–10/10, a score indicating extreme stress levels. She was unsure which number best suited her current state, so she circled both numbers 9 and 10. Using the NCCN distress thermometer practical problems section, Gloria checked off the following problems: work/school; depression; worry; Sadness; fatigue; memory/concentration; sleep.

Because the original referral noted cognitive issues, which Gloria identified as concerning to her, a cognitive screen was completed. The Montreal Cognitive Assessment (MOCA) is a cognitive screening tool used to flag major cognitive considerations, with the understanding that it may lack some sensitivity

in the CRCI context (Chao et al., 2021). It was completed virtually. Her score was 29/30, which generally indicates both normal cognitive function and no cognitive concerns. The 1-point loss was an error in the serial subtraction attentional subtask. While she was pleased that she scored highly and within what is considered to be normal ranges on the MOCA, she stated that she certainly did not feel normal; education around the phenomenon of subjective-objective disparity in CRCI cognitive testing and potential sensitivity issues (Chao et al., 2021) was also shared with Gloria. She agreed to follow up on further cognitive assessment, including a subjective cognitive complaints assessment in a future OT session. This would be used to further capture the functional implications and detail what she is noticing cognitively in her day-to-day living that the MOCA is not designed to capture. She also agreed to a neuropsychology consult for a further, finer objective assessment of her cognition. In agreeing to these further assessments, Gloria became emotional and reported that she was feeling high stress levels around the potential of cognitive decline. In describing these concerns, she was forgetting words and details, which in turn exacerbated her feelings of stress.

Given the multi-factorial nature of CRCI, assessing from various angles and for various concurrent cancer-related symptoms, such as fatigue, depression, and anxiety, is important in the OT evaluation. Gloria's ESAS-R noted mild depression, rated at 3/10, and moderate anxiety symptoms, rated at 6/10 at the time of the initial OT assessment. She planned to continue psychology, spiritual care, and psychiatry regarding these symptoms and was open to exploring OT strategies as well over the course of her treatments. Her fatigue was rated at 3/10 on the ESAS-R. She wished to take home a cancer-related fatigue patient booklet to review on her own time.

Therapeutic Intervention

Given the multifactorial nature of CRCI and Gloria's presentation of concerns, several interventional possibilities were reviewed with, and ranked by, Gloria. Initial interventions were grounded in expanding Gloria's CRCI multifactorial education beyond the fact sheet she already had reviewed briefly. As stress presented so clearly as a functional issue, particularly given the rise in cognitive symptoms when stress peaked, Gloria opted to prioritize focus on her current stress levels. She wished to defer more focused memory strategy OT sessions to another time in the future. However, in the meantime, she was willing to sign up for a virtual, single-session multidisciplinary patient education class on CRCI, which covers information about CRCI, including generalized memory strategies. She felt that this class may be a simple and time-effective session for her to attend online and may serve to alleviate some of her stressors around her cognition. While changes to eating had been identified as a concern, Gloria felt that if she could manage and control her stress, her need to soothe through food might change. She did not wish to explore a dietary referral quite yet; however, on her own accord, she planned to write down her intake in a food diary for the next week to understand better her eating habits, especially how stress was impacting her eating.

Functional Activity Engagement for Stress Management and Attentional Focus

Given that she indicated knitting was a previously enjoyed occupation that seemed to calm her, Gloria chose to focus on a knitting blanket project in preparation for the birth of her grandchild. This activity combines planning, attention, and stress management (Hartzell et al., 2021) and focuses on joy and new life, with further benefits of sensory engagement, creativity, and routine establishment. Despite Gloria having reported difficulty initiating knitting projects since the pandemic, approaching knitting as a therapeutic engagement for her mind and her stress offered her an opportunity to reintegrate this activity into her life. She reported that the shift of knitting from a leisure task to a therapeutic task motivated her

to plan her time to work on her focus in being present for knitting, with the goal to finish the blanket before the baby's birth. Her plan is to present this gift the day she meets her grandchild.

After the initial OT assessment session, Gloria was also introduced to breathing strategies incorporated with a brief body scan, which she felt to have a calming ability, allowing her to focus on aspects of her body she may not have been attending to as readily. She was informed of an occupational therapist led yoga program that interested her; she felt that this type of program may be particularly useful in targeting multiple concerns at once, as she anticipated that it may help to reinforce the breathing exercises and maintain her ROM and stamina while allowing for some processing of her stress through intentional physical positions.

Follow-Up and Outcomes

In her follow-up virtual session, Gloria reported she has been making progress on her knitting project, both in terms of working on the blanket design and the actual knitting and also in attending to the knitting project as a way to reduce her stress levels. She was pleased to report her increased awareness of her stressors and stress levels as fluctuating during the day. She reported that mornings were the best time for her to concentrate on knitting. Her review of the cancer-related fatigue patient booklet given on the initial visit helped give her the idea that activities that require concentration, in particular, may best be accomplished during times when she feels less tired. She also noted that she could knit for 30 min with complete focus on the knitting task before her mind would begin to wander to concerns over her health and her future.

From an OT perspective, the knitting task had helped her understand that the activity is not just "busy work" but could be helpful to her well-being in several ways. On her own accord, she experimented by blending the knitting activity with listening to soft, peaceful classical music in the background to increase stimuli and decrease the perseverative thoughts. She scheduled knitting time on her calendar to help give her day some routine, adding a check mark to the calendar as she completes her knitting session. She reported that treating the activity like a "prescribed medicine" has changed the way she focuses on and tolerates engagement, both in knitting and now in some other daily tasks, including cooking and cleaning.

She is thinking of including a note card to give with the knitted blanket that tells her grandchild how much she enjoyed making this blanket, thinking about how she would soon get to meet him or her. This naturally led to discussion that Gloria may appreciate journaling as a method to use writing to process and reflect on progress, function, and her stresses. Various journaling tips and sentence starters were provided.

She also shared that when she is busy with her knitting, she is not so tempted by excessive snacking. She feels that being engaged in a meaningful activity has helped to curb some of her boredom and help tackle this dietary habit that was causing her added concern. She appreciated how getting back into activities that she had put aside during her recovery and the pandemic was not particularly helpful, especially for her mood. Reduced activity was actually creating more stress for her and causing her to not feel like "herself." Being busy was reducing that stress. She self-identified the need to find balance in her engagements.

She enjoyed her very first virtual yoga session. She thinks that the yoga postures are useful to maintain the shoulder range she gained back in her exercise program. She also thinks that the regimented breathing will be a good tool to use in stress management. Gloria had spoken with the exercise class staff to confirm that the yoga would be good for her arm. She appreciated that this OT yoga class was virtual

and noted that the occupational therapist instructor seemed creative in encouraging a social and connected feel despite the virtual format.

On reassessment, the NCCN distress thermometer ratings were now routinely at 5–7/10, indicating a reduction in distress to a moderate level, a marked improvement from her baseline (9–10/10) extreme stress levels. This allowed her to appreciate better the degree of improvement with her stress management. It also provided feedback that encouraged her therapeutic efforts and multidisciplinary contributions and involvement. She was motivated to monitor her stress levels over time. She reported awareness of how her stress trended higher on days that she had more medical appointments out of the home and on days that she felt more tired. She also noticed that during busier days, she may not have had as much energy for her usual virtual chats with her friends and family. Gloria also related that even if connections took energy to initiate, her fatigue and her stress reduced after she had connected with her loved ones, even for a short virtual chat. She identified communication with her loved ones as a strategy for reducing her stress.

She reported that she is scheduled for the upcoming CRCI education class and was booked into neuropsychology for an initial consult. She was making a point to be thorough with her calendar system to help keep her organized as a means of reducing stressors. Gloria reported that before her OT session, she had not thought of stress as the factor exacerbating CRCI and was surprised by the functional implications of making changes to her activities and routines. When the options for OT sessions were broached, Gloria wanted to focus sessions on further understanding of how body awareness and breathing techniques can be used to manage the functional barriers resulting from high stress.

The next OT session was booked for January 2022. Gloria elected an in-person visit for the next OT session, as she feels her self-awareness of her stress triggers and her breathing strategies for stress mitigation will make it plausible for her to come to the cancer center without exacerbating her symptoms.

Intervention Rationale

Knitting has been reported as a means to target cognition and stress in CRCI (Hartzell et al., 2021). Hartzell et al. (2021) noted statistically significant improvements in perceived stress, cognitive flexibility, and psychomotor speed in a group of female cancer survivors with CRCI who were new to knitting; these participants learned how to knit and were engaged in knitting for over 8 weeks. As Gloria already had some baseline knitting skills and experience, and given that her own knitting project was one that was self-directed in nature, she was made aware that the study results cannot be fully generalized to her situation. Nonetheless, she decided that initiating a knitting project for possible improvements in stress and cognition therapeutically “made sense” to her, and she was excited and fascinated to learn about Hartzell et al.’s study during her OT session. Further rationale for including knitting in Gloria’s care focused on the opportunity for reciprocity and gift giving of occupational creations given the upcoming birth of her grandchild.

Breathing, body scanning, physical awareness, and yoga interventions would naturally combine physical, affective, and cognitive domains given the movement, meditative, breath work, and pattern processing required. Occupational therapists have profession-specific yoga examples to draw on, including that of Hunley et al. (2018), that have incorporated yoga into community-based OT for stress reduction to reduce chronic disease risk and progression. Evidence for improvement in cancer anxiety and depression (Braveman & Hunter, 2020), as well as cognition (Chao et al., 2021), has been found in mindfulness-based therapy/stress reduction, which incorporates the use of body scans. Journaling allows for reflection, expression, and the processing of stresses; it can also be customized according to patient

preference and, interestingly, can serve as an adjunct psychosocial assessment and monitoring tool helpful in the OT process (Haertl, 2008).

Discussion

Strengths and Limitations in Approach to this Case

Strengths

This case study portrays the functional impacts of stress on function, cognition, and overall well-being. This case also allowed us to understand that occupational therapists and patients may prioritize OT care based on presenting symptoms, reminding us of the importance of tailoring OT care to match individual needs and contexts. In addition, this case study explored how occupational therapists can adapt to meet patient-directed goals while showcasing the broad offerings of OT, including those in psychosocial realms so relevant in the CRCI multifactorial condition.

Limitations

This case is limited by the selected stress tool that did not seem to capture the functional implications of Gloria's stress adequately for the purpose of an OT consultation. Where the tool excelled at helping quantify stress levels and identifying factors that were stress-inducing for Gloria, the OT assessment of Gloria's stress lacked efficiency in its ability to link function and stress in ways that were meaningful to Gloria. The limited tools available for occupational therapists to use in determining stress in cancer care have led the authors to conceptualize, develop, and pilot a new stress screening tool (currently in progress) that aims to improve the connection and assessment of the bidirectional link between stress and function.

Discussion of the Relevant Literature

CRCI as Multifactorial

Although primary and historical CRCI study focus has been on the consequences of anti-cancer therapies, of which chemotherapy (Moore et al., 2019) appears to be the most readily studied, multiple factors are implicated in the etiology of this unfortunate sequela. Understanding CRCI factors beyond cancer treatments include accelerated aging, hormonal, radiation, and targeted therapy effects, as well as key behavioral, psychological, and system influences (Ahles & Root, 2019). Poor sleep, fatigue, sedentary activity levels, inadequate nutrition, cancer itself as a stress, premorbid conditions, maladaptive coping behaviors, stress, anxiety, and depression have also been identified (Ahles & Root, 2019). Premorbid IQ levels are also an important consideration for CRCI in that lower premorbid IQ is predictive of baseline CRCI (Lycke et al., 2016). Not surprisingly, Lycke et al. (2016) also found that lower IQ influences individual cognitive domains and is a predictor of poorer neurological psychological test performance and score. In addition, new research is helping to understand better genetic risk factors for CRCI (Buskbjerg et al., 2021). The factors highlighted here are considered interconnected and feasible, cumulative causes of CRCI. A review of these numerous factors points to why the older terminology used to describe CRCI, i.e., "chemo brain," was likely poor and imprecise terminology (Asher et al., 2020). Education is an important component of CRCI care (Braveman & Newman, 2020; Van Dyk & Ganz, 2021), particularly given its complexity and many factors. This complex aspect inherent in CRCI requires that the occupational therapist consistently considers tailored assessment and intervention for individualized presentation and meaningful goals (Braveman & Newman, 2020).

Consideration of Stress in CRCI Presentation

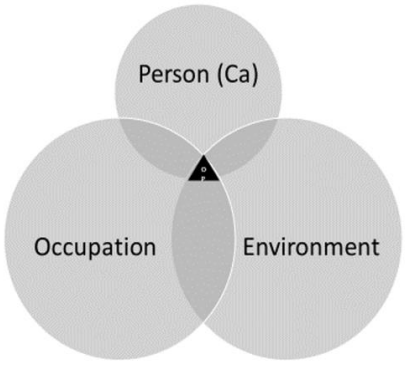
With psychological factors featuring quite prominently in the contextual CRCI research, dual screening/assessment methods that seek to understand concurrent affective and cognitive symptomatology

clinically appear warranted. Understanding the nuances and connections between affective concerns, including stress and cognitive dysfunction, and working to address affective needs in cancer patients may improve their cognitive outcomes in turn (Gutenkunst et al., 2021). It is also understandable that the cognitive deficits themselves may create high levels of stress (Hartzell et al., 2021), and these effects may compound fatigue and uncertainty (Dolgoy et al., 2019). It is also important to acknowledge the stressors that arise related to disability in cancer survivors (Banks et al., 2010): the functional impairments, role changes, and independence losses. Studies are showing cancer-related post-traumatic stress disorder to be prevalent and easily missed or often not even considered in cancer care (Leano et al., 2019).

Stress, its varying degrees, and allostatic load conditional factors are worthy of closer consideration, particularly by occupational therapists with their occupational-minded stance. The PEO-P model (Law et al., 1996) can be used to understand the ways that CRCI can affect occupational performance. Figures 1 and 2 illustrate the following description of the potential impact of OT on the occupational performance of a person with cancer. In the PEO-P model, occupational performance is the amount of overlap of three circles in a Venn diagram. If the person (P) experiences reduced functional capacity because of cancer, the P "circle" will become smaller, reducing the surface area of overlap with the environment (E) and occupation (O) circles. The reduced overlap (in black solid fill) represents decreased occupational engagement (see Figure 1). An OT intervention can increase the size of either or both of the other model components, the environment or occupation, thereby increasing the overlap (in black solid fill) with the person circle leading to increased occupational performance (see Figure 2).

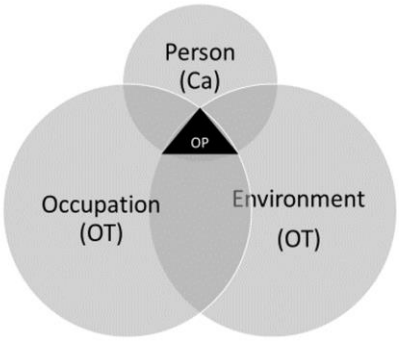
Figure 1

Person with Cancer and Decreased Occupational Performance, Without OT



Note. OP = occupational performance.

Figure 2
Person with Cancer and Increased Occupational Performance through OT



Note. OP = occupational performance.

Exploration of Occupational Therapy Role in CRCI Related to Stress

The literature appears to be quite underdeveloped in terms of occupational therapists' exploration and involvement in stress-related realms, and certainly so with respect to CRCI/stress implications. Clinically and anecdotally, occupational therapists may already be providing stress-related interventions in a cancer context. However, the extent to which such treatment is used in consideration of cognitive-related stress symptoms is unclear. It is useful for occupational therapists to be actively involved in stress-themed work with cancer patients, as "the risk of psychological distress in individuals with cancer relates much more strongly to their level of disability than it does to the cancer diagnosis itself" (Banks et al., 2010, p. S62). Occupational therapists, though often underused with cancer patients (Pergolotti et al., 2016), seek to minimize disability and may also detect and address individual contexts that may not be discovered by other health professionals in the course of usual cancer care. Occupational therapists' expertise, importantly integrated early and across the cancer trajectory (Dolgoy et al., 2021; Pergolotti et al., 2016), can help target critical and additive reasons for cancer patients' concerns, including stress and stressors. Examples of such concerns include the identification and management of unnecessary suffering and stress related to unmet impairments and rehabilitative needs; difficulty performing usual, basic, and instrumental activities of daily living; environmental challenges and barriers to community access; undesirable changes to occupational roles, and the resultant financial stresses regarding work-related issues (Pergolotti et al., 2016; Silver et al., 2013).

OT consideration of stress is important not only to the CRCI management vantage point but also cancer patients' quality of life and overall cancer-related symptom burden (Jakovljevic et al., 2021). Further, stress has been connected to concerning outcomes of cancer progression (Iftikar et al., 2021) and poorer survival (Kruk et al., 2019). Hunley (2013) compared baseline measures of stress for a sample of women with breast cancer history to a control group of women without cancer history and found physiological signs of stress among women with a breast cancer history. Baseline cortisol levels were significantly lower in women with breast cancer than in controls [$F(2,45) = 4.79$, $p = .03$]. Further, low cortisol levels in women with a breast cancer history were associated with high depressive symptom levels ($r = -.229$) and low well-being levels ($r = .226$). Whereas low cortisol was associated with low depressive symptom levels ($r = .212$) and high well-being ($r = -.180$) in the control group of women without breast cancer history. Cortisol at baseline, and in converse associations with depression and well-being levels, in women with and without breast cancer is a functional demonstration of cortisol depletion in the context

of cancer as a chronic stressor. McEwen (2004) describes this process through allostatic load theory, where he stresses the positive associations between stress and pathophysiology. Andreotti et al. (2015) discuss both cancer itself as a stress, as well as a chronic developmental stress contributing to increased allostatic load and resultant cognitive difficulties in cancer patients.

Interestingly, in the oncology setting, stress concerns are often referred solely to other departments, such as psychiatric and psychology services (Klassen & Wallis, 2021). Rather than routinely including stress in their own CRCI practice, occupational therapists may routinely be guided by their organizations to defer and refer stress concerns; guidance to refer these matters can be seen in cancer and OT-specific texts (Braveman & Newman, 2020). This may indeed affect occupational therapists' overall confidence in integrating stress-related practice into CRCI care. Preliminary data from a study of oncology/palliative care occupational therapists (N = 12) uncovered that 58.3% of respondents did not feel any degree of confidence in assessing or screening for stress in their patients; even more, 67% of them did not feel any degree of confidence with intervening around stress as part of their patients' occupational therapy process (Driga, 2022). These preliminary findings indicate the need for further exploration of stress-related care offerings as part of CRCI patient outcomes.

Rationale for Conclusions

Remarkably, in this case study, what appeared to be a cognitive issue in CRCI, was multifactorial and driven by stress factors impacting function. By thinking beyond the typical cognitive-centric scope of OT practice for CRCI, stress was addressed through the interplay of the PEO-P model; specifically, how stress factors were negatively affecting the person's sense of self, engagement in occupations, and exploration of their environment. The experience of managing CRCI can itself be stress-provoking—admitting to having cognitive issues and being referred and 'tested' for cognitive impairments. This alone speaks to the need for further consideration of the incorporation of stress management into OT practice for CRCI. Ultimately, occupational therapists are positioned to help individuals understand "symptoms in a way that is more meaningful to the quality of life of the patient" (Pergolozzi & Crespo, 2020, p. 5055); despite stress being a factor that can impede engagement, is still often thought of as primarily psychologically driven, rather than functionally implicit.

Primary Takeaways

Formalizing stress in CRCI OT assessment may open the doors wider to further therapeutic possibilities and improved outcomes in CRCI care. Further research is required to understand the bidirectional connections between stress and function. Studying how OT care can intentionally/directly and indirectly target stress, general coping, and the uncertainty that comes with a life-limiting diagnosis such as cancer would be helpful. Stress and related themes may be newer interventional territory for occupational therapists, who may normally and/or obligingly, given organizational dictate, defer to other cancer care departments outside of OT. Collaborations with other professions and learning of stress screening, assessment, and management strategies may be particularly supportive in such practice development and enhance the ownership of stress as an important and routine area of oncologic OT practice.

Patient Perspective

In this case, the authors were quite taken by the patient's feedback and appreciation for what can be termed an occupationally-focused approach to stress management. By looking at how her stress impacted function and by examining how her function impacted her stress, she remarked that this was a

new way of looking at stress. She voiced that the approach made it (stress) feel "practical," that she could practically try and work with her stress, and that it was different than her experiences "talking about it."

References

Ahles, T. A., & Root, J. C. (2018). Cognitive effects of cancer and cancer treatments. *Annual Review of Clinical Psychology*, *14*(1), 425–451. https://doi.org/10.1146/annurev-clinpsy-050817-084903

Andreotti, C., Root, J. C., Ahles, T. A., McEwen, B., & Compas, B. (2015). Cancer, coping and cognition: A model for the role of stress reactivity in the cancer-related cognitive decline. *Psycho-Oncology*, *24*, 617–623. https://doi.org/10.1002/pon.3683

Asher, A., Cole, P., Sharafeldin, N., & Wagner, L. I. (2020). *'Chemo brain': An imprecise term for a complex phenomenon*. Navigating survivorship. Healio News. https://www.healio.com/news/hematology-oncology/20200518/chemo-brain-an-imprecise-term-for-a-complex-phenomenon

Banks, E., Byles, J. E., Gibson, R. E., Rogers, B., Latz, I. K., Robinson, I. A., Williamson, A. B., & Jorm, L. R. (2010). Is psychological distress in people living with cancer related to the fact of diagnosis, current treatment or level of disability? Findings from a large Australian study. *The Medical Journal of Australia*, *193*(5), S62–S67. https://doi.org/10.5694/j.1326-5377.2010.tb03931.x

Braveman, B., & Hunter, E. G. (2020). *Occupational therapy practice guidelines for cancer rehabilitation in adults*. AOTA Press.

Braveman, B., & Newman, R. (2020). *Cancer and occupational therapy: Enabling performance and participation across the lifespan*. AOTA Press. https://library.aota.org/cancer-occupational-therapy/

Buskbjerg, C. D. R., Amidi, A., Demontis, D., Nissen, E. R., & Zachariae, R. (2021). Genetic risk factors for cancer-related cognitive impairment. A systematic review. *Acta Oncologica*, *58*(5), 537–547. https://doi.org/10.1080/0284186X.2019.1578410

Chao, D., Hale, A., Henry, N. L., Kratz, A. L., & Gabel, N. M. (2021). Cancer-related cognitive impairment or "chemobrain:" Emerging assessments, treatments, and targets for intervention. *Current Physical Medicine and Rehabilitation Reports*, *9*, 108–118. https://doi.org/10.1007/s40141-021-00319-2

Cardoso, F., Harbeck, N., Barrios, C. H., Bergh, J., Cortés, J., El Saghir, N., Francis, P. A., Hudis, C. A., Ohno, S., Partridge, A. H., Sledge, G. W., Smith, I. E., & Gelmon, K. A. (2017). Research needs in breast cancer. *Annals of Oncology*, *28*(2), 208–217. https://doi.org/10.1093/annonc/mdw571

Dolgoy, N., Driga, A., & Brose, J. M. (2021). The essential role of occupational therapy to address the functional needs of individuals living with advanced chronic cancers. *Seminars in Oncology Nursing*, *37*(4), 151172. https://doi.org/10.1016/j.soncn.2021.151172

Dolgoy, N., Krishnasamy, M., & McNeely, M. L. (2019). Uncertainty and sense-of-self as targets for intervention for cancer-related fatigue. *European Journal of Cancer Care*, *28*(4), e13048. https://doi.org/10.1111/ecc.13048

Driga, A. (2022). *Feasibility and usability of a stress management pocket booklet to enhance palliative/oncology occupational therapists' personal knowledge, skills and confidence with stress management via experiential learning* [Manuscript in preparation]. Mount Mary University.

Gutenkunst, S. L., Vardy, J. L., Dhillon, H. M., & Bell, M. L. (2021). Correlates of cognitive impairment in adult cancer survivors who have received chemotherapy and report cognitive problems. *Supportive Care in Cancer*, *29*, 1–10. https://doi.org/10.1007/s00520-020-05616-5

Hartzell, J. W., Yaguda, S., & Boselli, D. (2021). Knitting to improve cognition and reduce stress in cancer survivors: A pilot study. *Journal of Clinical Oncology*, *39*(15_Suppl), e24049–e24049. https://doi.org/10.1200/jco.2021.39.15_suppl.e24049

Haertl, K. (2008). Journaling as an assessment tool in mental health. *Assessments in occupational therapy mental health: An integrative approach* (2nd ed.). SLACK Incorporated.

Hui, D., & Bruera, E. (2017). The Edmonton Symptom Assessment System 25 years later: Past, present, and future developments. *Journal of Pain and Symptom Management*, *53*(3), 630–643. https://doi.org/10.1016/j.jpainsymman.2016.10.370

Hunley, J., Kamaraju, S., Holder, P., Szabo, A., Burlingame-Toppen, R., & Stolley, M. (2018). The effect of yoga on barriers to occupational engagement in African American breast cancer survivors. *Cancer Medicine Journal*, *1*(1), 3–11. https://doi.org/10.46619/cmj.2018.1-1002

Hunley, J. H. (2013). *Managing stress in breast cancer's wake: A brief isometric intervention* (dissertation). The University of Wisconsin, Madison. ProQuest, Ann Arbor, MI.

Iftikhar, A., Islam, M., Shepherd, S., Jones, S., & Ellis, I. (2021). Cancer and stress: Does it make a difference to the patient when these two challenges collide? *Cancers*, *13*, 163. https://doi.org/10.3390/cancers13020163

Jakovlijevic, K., Kober, K. M., Block, A., Cooper, B. A., Paul, S. M., Hammer, M. J., Cartwright, F., Conley, Y. P., Wright, F., Dunn, L. B., Levine, J. D., & Miaskowski, C. (2021). Higher levels of stress are associated with a significant symptom burden in oncology outpatients receiving chemotherapy. *Journal of Pain and Symptom Management*, *61*(1), 24–31. https://doi.org/10.1016/j.jpainsymman.2020.07.019

Klassen, Z., & Wallis, C. J. D. (2021). Assessing patient risk from cancer and COVID-19: Managing patient distress. *Urologic Oncology: Seminars and Original Investigations*, *39*(5), 243–246. https://doi.org/10.1016/j.urolonc.2021.01.023

Kruk, J., Aboul-Enein, B. H., Berstein, J., & Gronastaj, M. (2019). Psychological stress and cellular aging in cancer: A meta-analysis. *Oxidative Medicine and Cellular Longevity*, Article ID 1270397, 1–23. https://doi.org/10.1155/2019/1270397

Law, M., Cooper, B., Strong, S., Stewart, D., Rigby, P., & Letts, L. (1996). The person-environment-occupation model: A transactive approach to occupational performance. *Canadian Journal of Occupational Therapy*, *63*(1), 9–23. https://doi.org/10.1177/000841749606300103

Leano, A., Korman, M. B., Goldberg, L., & Ellis, J. (2019). Are we missing PTSD in our patients with cancer? Part 1. *Canadian Oncology Nursing Journal*, *29*(2), 141–146.

Lycke, M., Pottel, L., Pottel, H., Ketelaars, L., Stellamans, K., Van Eygen, K., Vergawue, P., Werbrouck, P., Goethals, L., Schofield, P., Boterberg, T., & Debruyne, P. (2017). Predictors of baseline cancer-related cognitive impairment in cancer patients scheduled for a curative treatment. *Psycho-Oncology*, *26*(5), 632–639. https://doi.org/10.1002/pon.4200

Loh, S. Y. (2021). Occupational therapy in cancer survivorship – A toolkit for stimulating rapid-research on the neglected domain of "participation" during COVID-19. *Health*, *13*, 637–646. https://doi.org/10.4236/health.2021.136048

McEwen, B. S. (2004). Protection and damage from acute and chronic stress: Allostasis and allostatic overload and relevance to the pathophysiology of psychiatric disorders. *Annals of the New York Academy of Sciences*, *1032*, 1–7. https://doi.org/10.1196/annals.1314.001

MOCA Cognitive Test. (2016, September 28). *Cancer*. https://www.mocatest.org/type-references/cancer/

Moore, K., Stutzman, S., Priddy, L., & Olson, D. (2019). Chemobrain: A pilot study exploring the severity and onset of chemotherapy-related cognitive impairment. *Clinical Journal of Oncology Nursing*, *23*(4), 411–416. https://doi.org/10.1188/19.CJON.411-416

National Comprehensive Cancer Network [NCCN]. (2020). *NCCN distress thermometer and problem list for patients*.https://www.nccn.org/patients/resources/life_with_cancer/pdf/nccn_distress_thermometer.pdf

Pergolizzi, D., Crespo, I. (2020). Recognition of cognitive complaints for patients with advanced cancer. Supportive Care in Cancer, *28*, 5055–5057. https://doi.org/10.1007/s00520-020-05678-5

Pergolotti, M., Williams, G. R., Campbell, C., Munoz, L. A., & Muss, H. B. (2016). Occupational therapy for adults with cancer: Why it matters. *The Oncologist*, *21*(3), 314–320. https://doi.org/10.1634/theoncologist.2015-0335

Silver, J. K., Baima, J., & Mayer, R. S. (2013). Impairment-driven cancer rehabilitation: An essential component of quality care and survivorship. *Cancer: A Cancer Journal for Clinicians*, *63*(5), 295–317. https://doi.org/10.3322/caac.21186

Van Dyk, K., & Ganz, P. A. (2021). Cancer-related cognitive impairment in patients with a history of breast cancer. *JAMA*, *326*(17), 1736–1737. https://doi.org/10.1001/jama.2021.13309

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