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The Effects of Cervical Cancer Diagnosis on Occupational Performance

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The Effects of Cervical Cancer Diagnosis on Occupational Performance

Abstract

Background: In the United States, it was predicted that approximately 13,960 new cases of invasive cervical cancer would be diagnosed in 2023 (American Cancer Society, 2023). The research question focused on identifying changes in occupational performance for patients with cervical cancer. The areas of occupational performance considered were activities of daily living, leisure, work, education, social participation, and mental health.

Methods: The respondents completed a cross-sectional, mixed methods Qualtrics survey. Likert scale questions captured the degree of functional impact of cervical cancer on the predetermined areas of occupational performance.

Results: Twenty-seven subjects (ages 18 to 70) fully participated in the survey. The most widely affected categories were psychosocial factors, such as mental health (100%), self-image (96.30%), body image (92.00%), self-confidence (74.07%), and energy levels (96.03%). However, all occupations from the categories of activities of daily living, rest and sleep, leisure, work, education, and social participation were reported to be impacted by cervical cancer.

Conclusion: Cervical cancer can have a significant impact on many areas of occupational performance. Health professionals should be aware of the potential decrease in occupational performance for those who are experiencing or who have experienced cervical cancer treatment.

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

cervical cancer, mental health, occupations, occupational performance, occupational therapy, quality of life

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Cervical cancer (CC) is the fourth most common cancer in women worldwide (WHO, 2023). The most frequent age range for women diagnosed with CC is between 35 and 44 years of age, with the average age being 50 years (American Cancer Society, 2023). In the United States (US), it is predicted that there will be approximately 13,960 new cases of invasive CC and 4,310 deaths in 2023 (American Cancer Society, 2023). In 2024, there will be more than 10,000 individuals who must adapt to the ways CC has impacted their lives and meaningful occupations. Occupations are the everyday activities that make up an individual's life, contributing to one's sense of purpose and quality of life (QOL) (World Federation of Occupational Therapy, 2022). CC influences how individuals participate in their occupations, such as complicating one's ability to care for themselves and others.

Occupational therapy (OT) can play a vital role in preserving the dignity and QOL of CC patients. Occupational therapists are health care professionals who are clinically skilled to aid patients across the lifespan to learn, habilitate, and rehabilitate skills to be successful in daily activities, thus increasing occupational performance (American Occupational Therapy Association [AOTA], 2020). Occupational performance is achieved when individuals can participate and find satisfaction in activities they need and want to do (AOTA, 2020).

CC, in its early stages, typically has minimal signs and symptoms, which may delay diagnosis (Mayo Clinic, 2022). However, in the advanced stages, patients may experience vaginal bleeding after sexual intercourse, bleeding between periods or after menopause, and excessive bloody or watery vaginal discharge that may be odorous. Additional symptoms of late-stage CC include pelvic pain and painful intercourse. While there is ample evidence on screenings, treatments, and medical interventions, there is a gap in the literature regarding the functional impact CC has on occupational performance (Dykens et al., 2020; Lague et al., 2018).

Sleep and mental health impact QOL (Tian et al., 2015). In a study of people with CC, sleep quality was twice as poor compared to the female population without CC. This study indicated that high distress, anxiety, and depression all contribute to poor sleep quality. This study also indicated that treatment-induced side effects, such as pain and fatigue, can also affect patients' sleep quality and may even cause patients to suffer from sleep disturbances. Consequently, poor sleep can negatively influence one's performance in all other occupations (Tian et al., 2015).

A research study focusing on women's health and wellness found that sexual dysfunction was the main source of patients' distress after CC treatment (Corrêa et al., 2016). In this study, sexual function and sexual activity were significantly affected in 60% of patients with CC. In addition, a cross-sectional study reported statistically significant differences ($p = 0.000$) in sexual enjoyment between patients undergoing treatment and patients post-treatment (Sabulei & Maree, 2019). Currently, there is a lack of support, education, and professional assistance regarding sexual function given to individuals diagnosed with CC, which negatively impacts treatment (Corrêa et al., 2016). This study goes on to report that 80% of sexually active individuals diagnosed with CC experience negative relationship challenges, such as increased tension, decreased confidence, and the fear of potential abandonment.

The purpose of this pilot study was to examine alterations in occupational performance and identify the impact CC imposes on functionality. Therefore, the aim of this study was to (a) identify changes in occupations and (b) quantify the degree of functional impact CC has on individuals. Implications of this study will lead to future opportunities for in-depth research pertaining to the lived experiences of CC survivors and OT's potential role in women's health.

Method

Design

Researchers developed a cross-sectional, mixed methods survey with a majority of questions offered as a Likert scale, except one final open-ended question that invited participants to share their lived experience with CC. Ethical approval was obtained through Wingate University's Regulatory Review Board before conducting the research. Before completing the survey, all of the respondents provided informed consent. The respondents were cautioned regarding potential heightened emotional experiences, including resurfaced memories, thoughts, and emotions from past events related to their CC diagnosis. To minimize the potential for emotional discomfort when answering survey questions, the topics of the study were clearly explained within the consent form. Contact information regarding the research project was made available to the eligible participants throughout the project.

Participants

To best understand the functional impacts CC has on individuals in the US, participants were required to meet the inclusion criteria of being a US resident, at least 18 years of age, with a CC diagnosis at any stage. The subjects were excluded if they did not meet all the inclusion criteria. Data indicated that 60 people accessed the survey link. Seven people did not consent to the survey and 11 were not US residents. Seven people did not have a CC diagnosis, thus excluding them from the remainder of the survey. While 33 people met inclusion and exclusion criteria, eight did not finish the survey, and their responses were removed from Qualtrics, resulting in a sample of 27 respondents. Analysis found that the overall attrition rate for survey completion was 24.24%.

Procedures

Facebook CC support groups were initially used to disseminate the survey link and the QR code biweekly. Instagram was used as a secondary social media source to publish the survey. Snowball and network sampling were used to recruit participants from various cancer Facebook groups. Search terms included "cervical cancer," "cervical cancer groups," "gynecological cancer," and "cervical cancer support groups" to identify appropriate Facebook networks.

Research flyers were placed around the town of Wingate and the city of Monroe, North Carolina, in areas such as public libraries and senior centers to increase recruitment. Patients were contacted through the researchers' personal networks, additional local cancer support groups, and occupational therapists who treat CC. A mass email was distributed to all the health science programs at Wingate University to gain more participants for the study.

Instrument

The respondents were asked if a specific occupation was or is affected by their CC diagnosis. A follow-up question prompted the respondent to specify if the occupation was minimally, moderately, or significantly impacted through an ordinal 3-point Likert scale. One free-response question was included at the end of the survey to allow space for the respondents to elaborate on their lived experiences.

The survey questions were tailored to occupational performance to gain insight into the functional implications CC has on individuals and their QOL. The survey questions were scaffolded based on the *Occupational Therapy Practice Framework (OTPF)* (AOTA, 2020). The areas addressed in the survey included mental health, rest and sleep, activities of daily living, sexual activity, social participation, leisure, and work.

Questions were carefully worded for uniformity throughout the survey to limit response bias. Sampling bias was mitigated by widespread dissemination of the survey through Facebook with the potential of reaching individuals across the US. Twenty out of 27 of the sample group found the survey through Facebook groups. The other seven members of the sample group accessed the survey via friends, family, or connections to the researchers.

Data Analysis

The survey was conducted through Qualtrics, an online data collection software program that stores survey questions, collects responses, and conducts data analysis (Qualtrics, 2022). Qualtrics and Microsoft Excel were used for descriptive statistical analysis. Percentages were calculated from the total sample per occupation and ranked accordingly by degree of impact to determine the occupations most widely affected by CC. The researchers trimmed data by eliminating data from the respondents who did not complete the full survey.

Results

The age of the sample ($n = 27$) ranged from 18 to 70 years of age. The most prevalent age range of those who responded to the survey was 36 to 45 years of age. The most frequent age range (mode) for diagnosis reported in the sample was 36 to 40 years of age. Twenty-two out of the 27 respondents identified as White, and one respondent identified with each of the following demographic categories: Native American or Alaskan Native, multiracial, Hispanic, Black, and Asian or Pacific Islander. Ten of the respondents were diagnosed with Stage 1, four with Stage 2, five with Stage 3, and seven with Stage 4 cancer. All of the respondents reported receiving treatment for CC. Three out of the 27 (11.11%) respondents used OT for symptom management.

Data indicated that 100% of the respondents reported challenges regarding their mental health after receiving a CC diagnosis. Of the 27 respondents, 18 (66.67%) noted their mental health was significantly impacted, four (14.81%) were moderately impacted, and five (18.52%) experienced a minimal impact. One respondent stated that “[cervical cancer] is a huge mental game” and that “the [mental strain of] waiting in between scans is just horrible.” Another respondent reported “out of control emotions, feeling like your body betrayed you, [and] realizing that this could be what kills you” as their mental health experience.

Furthermore, 26 out of the 27 subjects (96.30%) encountered changes regarding their self-image (see Table 1). Of the 26 whose self-image was impacted, 69.23% reported a significant impact. In addition, body image perceptions and self-confidence were altered in 92.59% and 74.07% of the subjects, respectively (see Table 1). Impaired energy levels were identified in 26 of the 27 respondents (96.30%). Of the 26 respondents impacted, 61.54% of individuals reported significant impairment.

Table 1

Percentage of Respondents who Reported an Impact on Psychosocial Factors

Psychosocial Factors Impacted by Cervical Cancer	Number of Respondants (Yes)	Percentage (Yes)
Mental Health	27/27	100.00%
Energy Levels	26/27	96.30%
Self Image	26/27	96.30%
Energy Levels	26/27	96.30%
Body Image	25/27	92.59%
Self-Confidence	20/27	74.07%

Sleep was reported as the most affected occupation (88.89%, $n = 24$) and is intrinsically linked to occupational performance. Ninety-six percent reported their sleep was moderately to significantly impacted. The ability to rest and relax is an important precursor for productive sleep. Of the 27 respondents, 25 (92.59%) responded that their ability to rest and relax was impacted. Eighty-four percent ($n = 21$) reported that rest and relaxation were moderately to significantly impacted.

Activities of daily living (ADLs) pertain to the “taking care of one’s own body” and includes bathing/showering, toileting, dressing, eating/swallowing, feeding, functional mobility, personal hygiene/grooming, and sexual activity (AOTA, 2020, p. 44). Eating, toileting, and bathing were additional ADLs identified as highly affected by CC, according to the survey responses. Twenty (74.07%) of the respondents indicated their desire to eat was impacted, with 80% of those respondents reporting it was moderately to significantly impacted. Seventeen (62.96%) of the respondents reported their ability to eat, toilet, and bathe was affected by their CC diagnosis. More than half of the subjects (52.94%) who reported that their ability to toilet was impacted disclosed a significant impact. Similarly, seven (41.18%) reported their ability to bathe was significantly impacted. Grooming and dressing were the least impacted ADLs, with a reported impact in 48.15% and 44.44% responses, respectively. However, one respondent stated, “not knowing if [they] would have energy to get out of bed or get dressed that day,” indicating dressing and grooming activities are relevant for intervention.

Sexual activity was the ADL most affected by a CC diagnosis (see Table 2). Of the 27 respondents, 20 (74.07%) reported being sexually active. The respondents were asked what areas of sexual activity were most affected. Vaginal sex was the area most impacted and was selected 17 times (85.00%). When asked about sexual desire, 20 of 25 respondents (80.00%) indicated their sexual desire was impacted by their CC diagnosis. Of the 20 respondents who reported changes in sexual desire, 13 (65.00%) stated it was significantly impacted, three (15.00%) stated it was moderately impacted, and four (20.00%) stated it was minimally impacted. Further, one respondent reported in the open-ended discussion, “I had the most pain with vaginal sex and my periods after my surgery,” indicating that side effects of CC treatment can prevent participation in sexual activity.

Table 2
Percentage of Respondents who Reported an Impact on Occupations

Occupations Impacted by Cervical Cancer		Number of Respondents (Yes)	Percentage (Yes)
Rest and Sleep	Rest and Relaxation	25/27	92.59%
	Sleep	24/27	88.89%
Activities of Daily Living	Sexual Desire	20/25	80.00%
	Desire to Eat	20/27	74.07%
	Ability to Eat	17/27	62.96%
	Toileting	17/27	62.96%
	Bathing/Showering	17/27	62.96%
	Grooming	13/27	48.15%
	Dressing	12/27	44.44%
Social Participation & Leisure	Leisure Activities	21/27	77.78%
	Social Participation with Friends	20/27	74.07%
	Social Participation with Family	17/27	62.96%
Work & Education	Job Performance/Work	20/21	95.24%
	Ability to Pursue Education	5/6	83.33%

Social participation and leisure are separate occupations as defined by the OTPF and can be influenced by one’s physical and mental health status (AOTA, 2020). Of the 27 respondents in this study, 20 (74.07%) reported that social participation with friends was impacted because of their CC diagnosis or

treatment. Fifty percent of those who responded “yes” indicated a significant impact. In contrast, only 17 out of the 27 respondents (62.96%) reported that social participation with family members was impacted, and of those, 88.24% reported a moderate to significant impact. When asked if the ability to participate in leisure activities was/is impacted by CC treatment and diagnosis, 21 of the 27 respondents (77.78%) responded that their ability to engage in leisure was impacted. A respondent reported that “at the time of diagnosis [they were] fatigued constantly [but they] refused to give up.” Twenty of 21 respondents (95.24%) reported a moderate to significant impact on leisure participation.

Of the 27 respondents, 21 reported that they were working at the time of their CC diagnosis, while six respondents indicated they were pursuing an education. Of the 21 respondents working at the time of their CC experience, 20 (95.24%) reported that their job performance was impacted. Of the 95.24% of the respondents whose job performance was altered, nine (45.00%) reported that job performance was significantly affected. Of the 21 respondents who were working at the time of their CC diagnosis or treatment, 15 (71.43%) had to leave their job at some point because of CC. When asked how their place of employment supported modifications, eight respondents took days off, 12 received medical leave, seven took time away from work for medical appointments, and three received coworker support or collaboration. Four of the respondents received no additional support or modifications from their place of work.

Mental health was the most affected category (100.0%) for all of the respondents. The most affected ADLs were sleep (88.89%), sexual desire (80.00%), and work (95.24%). All areas assessed through the survey were reported to be affected by CC, including psychosocial factors of mental health, sleep, ADLs, social participation, leisure, work, and education.

Discussion

According to the American Cancer Society (2023), the most frequent age range diagnosed with CC is 35 to 44 years, which is consistent with the data reflected from this sample. Comparatively, the largest respondent rate in this study was from the ages of 36 to 45. The respondents’ ages may have contributed to the wide array of impacted occupations because of the variety of responsibilities often accompanying early to middle adulthood. The World Health Organization defines mental health as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (Galderisi et al., 2015, p. 231). One hundred percent of the respondents reported an impact on their mental health, indicating the need for a referral to supportive oncology services for patients to receive psychosocial intervention after receiving a CC diagnosis.

Occupational therapists are uniquely qualified to address the mental and emotional impact that CC imposes. The OTPF describes the role of occupational therapists as “managing physical and mental health needs, including using coping strategies for illness, trauma history, or societal stigma” (AOTA, 2020, p. 32). Occupational therapists work with CC patients by developing and implementing approaches for emotional management and regulation in the hopes of restoring participation and enjoyment in everyday activities (AOTA, 2020). To achieve optimal outcomes for patients, occupational therapists use theoretical models and frames of reference to organize and guide their practice to optimize occupational performance (D’Amico, 2018). Mental health-centered frames of reference are used to improve emotional management and regulation by understanding the influence thoughts, behaviors, emotions, and physiological responses have on mental well-being and recovery (McCraith, 2019). Occupational therapists increase coping skills, mindfulness, and resilience and help the individual manage the stress-related symptoms of CC.

Furthermore, occupational therapists recommend community resources and social supports, such as a support group, that facilitate the recovery process by addressing mental health needs (AOTA, 2020).

Data gathered from the survey concluded that 26 of the 27 (96.30%) subjects reported impaired energy levels. Changes in energy level because of CC may impact an individual's ability to focus throughout work activities, attend to multiple tasks, and heed important instructions when in the community or driving. Occupational therapists can use a client-centered approach to modify activities and promote energy conservation to restore participation in meaningful occupations.

The OTPF defines social participation as “activities that involve social interaction with others, including family, friends, peers, and community members, and that support social interdependence” (AOTA, 2020, p. 34). Considering that close to three-quarters of the respondents in the study reported that their social participation was impacted, it is important to be cognizant of how these changes affect mental health status and overall occupational performance. Occupational therapists address social participation by educating clients on pacing leisure activities, providing options for social engagement via technology, scheduling rest breaks, and prioritizing leisure throughout one's day. Changes in social participation may be a result of low energy levels and treatment side effects, such as chemotherapy-related fatigue. Because of the interconnectedness of fatigue and occupational performance, sleep should be given equal consideration during OT treatment. Occupational balance occurs when individuals participate in “productive, restorative, and leisure occupations” (AOTA, 2020, p. 12).

Sleeping and getting adequate rest are paramount to performing other meaningful tasks throughout the day. “The goal of engagement in sleep and health management includes maintaining or improving performance of work, leisure, social participation, and other occupations” (AOTA, 2020, p. 9). With the majority of the respondents identifying sleep and rest as moderately to significantly impacted, it can be concluded that these areas of occupational performance were severely compromised. Findings are consistent with recent literature in that individuals with CC experience poor sleep quality and lack of adequate sleep compared to those without a diagnosis (Tian et al., 2015). Common OT intervention categories focused on promoting sleep are environmental, educational, physical, and psychosocial. Sleep hygiene education includes establishing healthy morning and nighttime routines and implementing environmental adaptations to promote sleep and rest (Suni, 2022). Environmental adaptations could include closing doors and blinds, limiting screen time before bedtime, limiting loud noises in the area, lowering the temperature of the household, playing low level relaxation music or white noise, or darkening the room to decrease excess light (AOTA, 2020; Ho & Siu, 2018). Tian et al. (2015) also identified that sleep is often negatively impacted by the side effects of CC treatment, which include exhaustion, psychological distress, pain, anxiety, and depression. Implementing mind-body activities into one's daily life, such as meditation, exercise, yoga, and breathing exercises, can improve one's quality of sleep, which also reduces the negative effects of stress, anxiety, and depression (Ho & Siu, 2018; Tian et al., 2015). It is imperative that occupational therapists address both sleep and rest for individuals with CC to promote optimal sleep hygiene, considering its influence on one's occupational performance (AOTA, 2017; Tian et al., 2015).

The respondents reported sexual activity as the most affected ADL. This finding corroborates results from Sabulei and Maree (2019), who found that sexual function is significantly impacted by CC. Health professionals do not always address sexual activity, but it is an occupation contributing to QOL that should be addressed if appropriate. Interventions can target positioning, pelvic floor therapy, energy conservation, and safety during sexual activity to promote increased satisfaction with intimacy, thus

increasing one's QOL (Tipton-Burton & Delmonico, 2018). Pelvic floor therapy can improve sexual function and health QOL through pelvic floor muscle exercises during treatment sessions, implementation of a home exercise program, biofeedback, and manual therapy techniques, such as stretching, tissue desensitization, and myofascial release (Brennen et al., 2020; Cyr et al., 2022).

Limitations

The cross-sectional design reports responses from one perspective in time and does not provide data across the continuum of cancer recovery and/or remission. Because of the study design, the researchers were unable to differentiate the effect of CC on the respondents in the present time, as compared to the time of diagnosis (Portney & Watkins, 2015). Further, the inclusion criteria did not specify how recently the subject was diagnosed with CC. Therefore, it is unclear if the respondents are still currently experiencing negative effects. However, the majority of the respondents reported they were diagnosed with CC in the past 3 years. Future research should be conducted to identify the distinct effects of CC cancer over time with data obtained at intervals in the year after diagnosis, providing valuable information for clinicians and practitioners. Also, the survey was largely disseminated on Facebook groups; therefore, people without access to social media would be unable to access the survey, impacting particular age and socioeconomic groups.

Implications for Further Research

As a pilot study, a respondent rate of 27 offers valuable information for future research. Additional studies conducted in the US may support the research findings and bolster the importance of supportive oncology services in the field of oncology care. Future studies have the potential to refine research questions to specific CC treatment paths and their effect on occupational performance. Furthermore, research on distinct OT interventions to support CC patients is needed to improve occupational therapists' ability to provide evidence-based, client-centered care, and increase health practitioner referrals.

Conclusion

There is considerable impact from the disease process of CC on an individual's occupational performance, including mental health, social participation, sleep/rest, and sexual activity. This study serves to educate occupational therapists and other health care professionals on the expansive impact of CC on daily occupations and interventions to promote occupational performance. Using a holistic approach, occupational therapists, in collaboration with other health care professionals, can aid in providing client-centered care and assist patients in finding treatment. The occupational therapist's value on the interprofessional health care team is specialization in interventions targeted to essential and meaningful occupations, which can increase occupational performance and overall QOL in individuals affected by CC.

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