Section Editors: Theresa Wicklin Gillespie and Constance Visovsky

QUALITY IMPROVEMENT

Burnout and Resiliency Among Advanced Practice Providers in Oncology Care

ABIGAIL BAUGH,[1] MPAS, PA-C, VICTORIA REISER,[1] AG-ACDNP, BMTCN, OCN®, JIAN ZHAO,[2] PhD, RN, MS, SARA JO KLEIN,[2] MS, BSN, RN, and MARGARET QUINN ROSENZWEIG,[2] PhD, FNP-BC, AOCNP®, FAAN

From [1]University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania; [2]University of Pittsburgh School of Nursing, Pittsburgh, Pennsylvania

Authors' disclosures of conflicts of interest are found at the end of this article.

Correspondence to: Abigail Baugh, MPAS, PA-C, University of Pittsburgh Medical Center, Magee-Womens Hospital, 300 Halket Street, Pittsburgh, PA 15213. E-mail: baugham2@upmc.edu

https://doi.org/10.6004/jadpro.2024.15.2.2

Abstract

Background: Occupational exhaustion, or burnout, is characterized with three components: emotional exhaustion, depersonalization, and sense of decreased personal accomplishment. Advanced practice providers (APPs) in oncology care are at particular risk for burnout. **Methods:** This was a prospective, comparative, descriptive study utilizing a convenience sample of oncology APPs who completed the Advanced Practice Provider Oncology Web Education Resource (AP-POWER; formerly Oncology Nurse Practitioner Web Education Resource, or ONc-PoWER), developed to provide educational content for new oncology APPs. The study purpose was to utilize the AP-POWER alumni to describe the level of burnout (Maslach Burnout Inventory) as well as resilience (Brief Resilience Scale) after at least 1 year in oncology practice, and to compare these scores according to the number of APP oncology practice years. **Results:** Of the 133 questionnaires emailed, 30 were returned (22.6% response) and 27 completed (20.3%). Within the Maslach Burnout Inventory, the mean score of the emotional exhaustion subscale was 25.19 (standard deviation [SD] 12.74; high degree of occupational exhaustion), depersonalization 7.74 (SD 5.98; moderate degree), and personal achievement 31.85 (SD 6.20; low degree). The resilience scores had a mean of 22.52 (SD 3.37; normal range). Resiliency was positively associated with personal accomplishment. There was no difference in burnout among newer (< 3 years) and more experienced (> 3 years) oncology APPs. **Discussion:** Oncology APPs report key indications of burnout, including a high degree of emotional exhaustion and moderate depersonalization, which was not mitigated through resiliency. **Conclusions/Implications:** The results are worrisome. Burnout scores for oncology APPs are high. Resiliency is present but is not protective for burnout. Strategies must be developed institutionally to support these key cancer care providers.

J Adv Pract Oncol 2024;15(2):95–101

Occupational exhaustion, or burnout, is prevalent and problematic among all health-care clinicians, including pharmacists, physicians, nurses, and advanced practice providers (Garcia et al., 2019). The syndrome was first recognized and studied among workers in human services and education in the 1970s (Schaufeli et al., 2009) and is present in almost all occupations. This burnout among clinicians is attributed in part to demands of a health-care system that limits the ability of clinicians to spend the time they feel they need with each patient and/or family, thereby impacting the patient relationship and leading to decreased professional satisfaction, a major predictor of burnout (Bridgeman et al., 2018). According to the Agency for Healthcare Research and Quality, more than half of physicians in America have at least one category of burnout, and up to 70% of nurses and 50% of nurse practitioners and physician assistants report burnout signs (Lyndon, 2015). For clinicians in health care, burnout is associated with poor clinician psychological and physical health, including sleep disorders, anxiety, depression, cardiovascular disease, substance abuse disorders, and difficulty balancing career demands with personal relationships (Hlubocky et al., 2016; Koutsimani et al., 2019; Yates & Samuel, 2019; Murali et al., 2018; Yester, 2019).

Burnout is classically characterized according to the Maslach Burnout Inventory (MBI) through three dimensions: emotional exhaustion, depersonalization, and a sense of decreased personal accomplishment (Maslach et al., 1986). Emotional exhaustion is when work is perceived as difficult, tiring, and stressful. Depersonalization or loss of empathy is characterized by a loss of regard for others and by keeping a greater emotional distance, which is expressed through cynical, derogatory remarks, and even callousness. This depersonalization can be demonstrated to clients (patients and families) or colleagues. The third component, personal accomplishment, can be protective. If work is perceived as difficult and stressful, a sense of personal accomplishment despite the difficulties can help to mitigate the difficult and stressful aspects of the work. If personal accomplishment is not actualized, or structurally unable to be realized, there is a danger of accelerating the exhaustion or burnout from a stressful position.

RESILIENCY

There are factors that help to mitigate burnout among clinical professionals. Resilience is a positive adaptation in the face of adversity, potentially limiting the effect of burnout on poor mental health (Cooper et al., 2020; Tak et al., 2017). The key "ingredients" of resiliency are self-compassion, mindfulness, and finding meaning in work. Finding meaning in work must be approached with caution. Even if work is considered by the clinician to be meaningful, too many additional hours or responsibilities are still fatiguing (Sorenson et al., 2016). Utilizing the fulfillment found in work as a strategy to overcome burnout is self-limiting. There is evidence that physicians find more meaning in work than the general population (Ashooh et al., 2019). Work meaning has not been studied specifically among advanced practice providers (APPs).

Advanced practice providers are a vital component of the oncology workforce. A 2018 survey led by the American Society of Clinical Oncology (ASCO) determined through professional membership logs and claims data that between 5,350 to 7,000 APPs are practicing in US oncology care (Bruinooge et al., 2018). The survey indicated that oncology APPs spend most of their time in patient care and conduct a wide array of patient care services, from new patient assessments to follow-up care, as well as more specialized services, such as genetic counseling, surgery, first assists, and procedures. Advanced practice provider respondents to this ASCO survey indicated work satisfaction, but the specific measurements of burnout and/or resiliency among oncology APPs were not assessed.

Advanced practice providers in oncology are at particular risk for burnout due to the patient intensity of the APP role and the added burdens of cancer care. A survey among APPs and APP trainees compared burnout scores with a national reference sample of health professionals (Orozco et al., 2019). The study found 80% of APPs scored in the high burnout range for at least one dimension of burnout, including emotional exhaustion, depersonalization, and a low sense of personal achievement. Edwards and colleagues' (2018) study among physicians, APPs, and staff found an overall 20.4% burnout rate, with APPs' burnout rate at 22.6%. According to Shanafelt and colleagues (2014), APPs in general are at risk for

burnout because they complete a work schedule with a high demand for direct patient care, leaving little time for personal and professional development. Advanced practice providers in oncology may be at a unique risk for burnout due to the stress of providing this intense patient-facing care mixed with the experience of high patient loss (Lee et al., 2022; Rasmussen et al., 2016).

Advanced practice providers new to cancer care may be particularly vulnerable to burnout due to the demands of a new position coupled with the intense stress of cancer care. They may also lack skills to separate emotionally from the sadness, loss, and trauma that patients are experiencing during cancer diagnosis, prognosis, and treatment. To better prepare and protect these vital members of the oncology workforce, the burnout potential and resilience reserve for the cancer care APP must be well understood for effective prevention and mitigation strategies.

Therefore, the purpose of the study was to (1) Describe the level of burnout, specifically emotional exhaustion, depersonalization, and sense of personal accomplishment, as well as resilience for APPs in oncology after at least 1 year in oncology practice, and (2) Compare the levels of burnout (emotional exhaustion, depersonalization, and sense of decreased personal accomplishment) and resilience according to years of oncology APP practice.

METHODS

This was a prospective, comparative, descriptive study utilizing a convenience sample of oncology APPs. The continuing education program, the Advanced Practice Provider Oncology Web Education Resource (AP-POWER; formerly Oncology Nurse Practitioner Web Education Resource, or ONc-PoWER), was developed to provide educational content for APPs hired to provide cancer care (i.e., within their first year in the role) and information for their respective mentors.

The AP-POWER curriculum was funded through the National Cancer Institute (R25 1R25CA148050), first in 2012 and renewed in 2017. The course provided basic, essential introductory didactic information through five content modules. The modules included the new oncology patient assessment, presentation, routine oncology visits, palliative and hospice care, and professional development and stress management. The oncology APP enrolled in the course must identify an onsite mentor for guidance and onsite, local practicalities. This course was explicitly designed for APPs new to outpatient oncology settings only.

Oncology APPs were recruited to enroll in the AP-POWER course beginning in 2014 through December 2022. To date, there have been 242 APPs enrolled from 27 states throughout the United States (Hoffmann et al., 2016). Utilizing an exempt protocol from the University of Pittsburgh institutional review board, questionnaires were emailed to all alumni who were eligible according to entry criteria, practiced beyond 1 year in oncology, and completed the AP-POWER course. A letter of request along with the surveys were emailed to all eligible participants in January 2022 with reminder emails sent in April 2022 and May 2022. Completion of the questionnaires indicated consent of the APPs for the study. Burnout and resilience were measured with the MBI and Brief Resilience Scale (BRS).

Instruments

The 22-item MBI – General Survey (MBI-GS) measures subscales for emotional exhaustion, depersonalization, and sense of personal achievement. Respondents rated how often they experience each symptom from 0 (never) to 6 (every day), and responses were summed for each subscale. High, medium, and low MBI burnout cut-points were based on a distribution of the composite score into terciles from a reference population. High emotional exhaustion was defined as a composite score greater than or equal to 16; high cynicism was a composite score greater than or equal to 11 (Maslach et al., 1986)

The BRS is a 6-item, self-reported measure of an individual's ability to bounce back or recover from stress. Total scores are the mean of all item responses and range from 1 to 5. Higher scores indicate a higher level of resilience. Items 2, 4, and 6 have reversed scoring (Knox et al., 2018; Smith et al., 2008).

Analysis

Standard descriptive analysis was utilized, including descriptive, comparison of means utilizing independent *t*-tests, and correlational analysis.

RESULTS

Of the 133 questionnaires emailed, 30 (22.6%) were returned and 27 (20.3%) completed. Twenty-four respondents were White/Caucasian, and 3 were Asian. Number of years of practice for this cohort were divided into fewer than 3 years and 3 years or more. The cohort with fewer than 3 years of practice was the larger cohort (n = 21; 77.8%), followed by the cohort practicing in oncology for 3 years or more (n = 6; 22%). The detailed descriptive statistics are presented in Table 1.

Descriptive Analysis

The mean MBI score for all participants in the emotional exhaustion subscale was 25.19 (standard deviation [SD] 12.74), indicating a high degree of occupational exhaustion. The mean depersonalization score was 7.74 (SD 5.98), indicating a moderate degree. The mean personal achievement score was 31.85 (SD 6.20), indicating a low degree. The mean of the scores from the BRS was 22.52 (SD 3.37), in the normal range.

Table 1. Participant Demographics

	No. (%)	Mean (SD)
Age		
25 to 34	11 (40.7%)	
35 to 44	11 (40.7%)	
55 and over	5 (18.5%)	
Gender		
Female	25 (92.6%)	
Male	2 (7.4%)	
Race		
Asian	3 (11.1%)	
White/Caucasian	24 (88.9)	
Years as an APP in oncology		
1 to 3 years	21 (77.8%)	
More than 3 years	6 (22.2%)	
Emotional exhaustion	3–46	25.19 (12.74)
Depersonalization	0–19	7.74 (5.98)
Personal achievement	21–45	31.85 (6.20)
Brief Resilience Scale	13–28	22.52 (3.37)

Comparative Analysis

The results of independent t-tests to compare scores according to years of practice indicate there were no significant differences between years as an APP in oncology (fewer than 3 years vs. 3 years or more) for occupation exhaustion (t = 1.21, p = .119), depersonalization (t = 0.971, p = .170), personal accomplishment (t = –0.271, p = .394), and resiliency score (–0.81, p = .468).

Correlational Analysis

The BRS was positively associated with personal accomplishment (r = .503, p < .05) but not significantly correlated with occupation exhaustion (r = –.179, p = .372) and depersonalization (r = –0.272, p = 0.170).

DISCUSSION

These scores indicate some worrisome results. Advanced practice providers in cancer care report key indications of burnout, a high degree of emotional exhaustion, and moderate depersonalization, which is not mitigated through resiliency. In our analysis we found resilience scores were associated with personal accomplishment but were not significantly associated with emotional exhaustion and depersonalization. In other words, with a higher level of resiliency, APPs did not have corresponding lower levels of emotional exhaustion and depersonalization. Resiliency is not protective for burnout.

Resilience

Resilience is a key positive factor and within normal range for this cohort; however, it is important that institutions not expect that clinicians develop these skills to counteract poor institutional supports for clinical practice (LeNoble et al., 2020). Our study also reveals that burnout is not impacted by years of experiences for APPs in oncology, indicating that institutional support should pay equal attention to both new and experienced oncology APPs for protection from burnout and enhancement of resilience.

COVID-19 Pandemic Effect

It is important to note that these surveys were completed in spring 2022, 2 years into the COVID-19 pandemic. Burnout in oncology was a

prominent and crucial phenomenon prior to 2020, worsening over the course of the pandemic (Tetzlaff et al., 2022). The impact of this level of burnout on APP oncology providers is important. In an analysis published in March 2020 of oncology nurse practitioners recruited through the Oncology Nursing Society (ONS) nurse practitioner database, with data collected prior to the pandemic, 44 (21.9%) of the 201 participants reported an intention to leave the profession or the hematology/oncology specialty (Bourdeanu et al., 2020). A shortage of providers is of significant concern, as a recent report based on data from the Centers for Medicare & Medicaid Services predicts a shortage of 2,200 oncology physicians by 2025, exacerbating the burden and demand for oncology APPs (Finnegan, 2019; Austin et al., 2021).

Increase Over Time

The findings from the ONS cohort also indicated high levels of burnout, but it was not as severe as our more recent findings. In a comparison between the mean scores of the subscales from the ONS survey and our scores from our cohort, emotional exhaustion was 20.8 for ONS vs. 25.2 for our cohort, the depersonalization score was 4.8 for ONS vs. 7.7 for our cohort, and the protective element of personal achievement was higher in the ONS scores at 36.7 vs. 31.9 in our sample.

Similarly, in a pre-pandemic (2016) assessment of burnout among 976 randomly selected US advanced practice nurses, the scores were higher (better) than our 2022 cohort, with scores for emotional exhaustion , depersonalization, and personal achievement similar to the ONS population (Dyrbye et al., 2021).

The sample reflected in our paper was collected after the acute phase of the 2020 pandemic, but still within the pandemic's far-reaching effects. These results indicate a deepening level of burnout among national oncology APPs without the sense of personal achievement to counter exhaustion and depersonalization. This perhaps indicates that it is not oncology practice inherently that is causing burnout, but the state of healthcare delivery that has resulted in burnout within the oncology APP workforce.

Although experienced by the individual, burnout is a workplace phenomenon, thus created and fostered by the work environment of the individual (Galletta et al., 2016). The work of the oncology APP is challenging. An APP may participate in an emotionally depleting prognostic discussion with one patient, then quickly transition to a survivorship visit of another patient, all while balancing clinic demands and clerical tasks. To reduce this stress, oncology APPs need institutional support and structure that allow APPs to feel empowered in their ability to provide high-quality care and supportive environments for patients.

Health-care institutions have a responsibility to construct an environment that reduces factors associated with burnout. LeNoble and colleagues' (2020) article addressing burnout in oncology providers stressed that burnout cannot be addressed solely through individual interventions, but must be based on organizational science, a team-based approach of communication decreasing fragmentation, and increasing the feelings of safety for every member of the oncology team.

In summation, burnout is defined as emotional exhaustion, depersonalization, and a sense of decreased personal accomplishment affecting APPs in oncology care. Oncology APPs are at an increased risk for burnout due not only to the nature of their occupational role but also to the added burdens of oncology care. Our results indicate that despite having resilience, oncology APPs continue to endorse burnout. Thus, strategies need to be developed institutionally to combat the burnout APPs are experiencing. Since burnout is not dependent on number of years as an oncology APP, institutions need to equally support both new and experienced APPs. Future directions must include a discussion of personal and institutional factors responsible for burnout, and ways in which oncology APPs can be nurtured institutionally. Continuous assessment to measure the emotional health and well-being of this valuable workforce must be maintained.

Limitations

There were limitations to this study. The sample was small with a survey conducted during the COVID-19 epidemic. Although the acute, emergency phase of the pandemic has passed, the repeated surges and uncertainly about the future remain. Although the ONS data is a valuable comparison,

a contrast of pre-COVID-19 emotional exhaustion, depersonalization, and resilience among this same cohort would provide some indication of the effect of the pandemic on these specific providers. This survey was also intentionally brief, limiting the questionnaires utilized and thus the measure of factors associated with emotional exhaustion, depersonalization, or resiliency. Our current survey does not provide targets for mitigation strategies. Lastly, there is a blurring of the concepts between compassion fatigue, defined as the consequence and emotions from the stress of "wanting to help a traumatized or suffering person" (Figley, 1995, p. 7) vs. burnout, defined as a sense of powerlessness over circumstances (Coetzee & Klopper, 2010; Figley, 2002; Sabo, 2011). The assessment tools utilized were specifically for burnout, but compassion fatigue is undoubtedly a component of the daily stress that is experienced by the oncology APP. This was not well assessed but needs to be considered.

Disclosure

The authors have no conflicts of interest to disclose.

References

Ashooh, M. P., Barnette, K., Moran, T. P., O'Shea, J., & Lall, M. D. (2019). Advanced practice provider burnout in a large urban medical center. *Advanced Emergency Nursing Journal*, *41*(3), 234–243. https://doi.org/10.1097/TME.0000000000000255

Austin, A., Jeffries, K., Krause, D., Sugalski, J., Sharrah, K., Gross, A.,...Kennedy, K. (2021). A study of advanced practice provider staffing models and professional development opportunities at National Comprehensive Cancer Network member institutions. *Journal of the Advanced Practitioner in Oncology, 12*(7), 717–724. https://doi.org/10.6004/jadpro.2021.12.7.5

Bourdeanu, L., Pearl Zhou, Q., DeSamper, M., Pericak, K. A., & Pericak, A. (2020). Burnout, workplace factors, and intent to leave among hematology/oncology nurse practitioners. *Journal of the Advanced Practitioner in Oncology*, *11*(2), 141–148. https://doi.org/10.6004/jadpro.2020.11.2.2

Bridgeman, P. J., Bridgeman, M. B., & Barone, J. (2018). Burnout syndrome among healthcare professionals. *American Journal of Health-System Pharmacy*, *75*(3), 147–152. https://doi.org/10.2146/ajhp170460

Bruinooge, S. S., Pickard, T. A., Vogel, W., Hanley, A., Schenkel, C., Garrett-Mayer, E.,...Williams, S. F. (2018). Understanding the role of advanced practice providers in oncology in the United States. *Journal of Oncology Practice*, *14*(9), e518–e532. https://doi.org/10.1200/JOP.18.00181

Coetzee, S. K., & Klopper, H. C. (2010). Compassion fatigue within nursing practice: A concept analysis. *Nursing & Health Sciences, 12*(2), 235–243. https://doi.org/10.1111/j.1442-2018.2010.00526.x

Cooper, A. L., Brown, J. A., Rees, C. S., & Leslie, G. D. (2020). Nurse resilience: A concept analysis. *International Journal of Mental Health Nursing*, *29*(4), 553–575. https://doi.org/10.1111/inm.12721

Dyrbye, L. N., West, C. P., Kelsey, E. A., Gossard, A. A., Satele, D., & Shanafelt, T. (2021). A national study of personal accomplishment, burnout, and satisfaction with work-life integration among advance practice nurses relative to other workers. *Journal of the American Association of Nurse Practitioners*, *33*(11), 896–906. https://doi.org/10.1097/JXX.0000000000000517

Edwards, S. T., Marino, M., Balasubramanian, B. A., Solberg, L. I., Valenzuela, S., Springer, R.,...Cohen, D. J. (2018). Burnout among physicians, advanced practice clinicians and staff in smaller primary care practices. *Journal of General Internal Medicine*, *33*(12), 2138–2146. https://doi.org/10.1007/s11606-018-4679-0

Figley, C. (2002). Compassion fatigue: Psychotherapists' chronic lack of self care. *Journal of Clinical Psychology, 58*(11), 1433–1441.

Finnegan, J. (2019). Another physician shortage: Oncologists. https://www.fiercehealthcare.com/practices/another-physician-shortage-oncologists

Galletta, M., Portoghese, I., Ciuffi, M., Sancassiani, F., D'Aloja, E., & Campagna, M. (2016). Working and environmental factors on job burnout: A cross-sectional study among nurses. *Clinical Practice & Epidemiology in Mental Health*, *12*(1), 132–141. https://doi.org/10.2174/1745017901612010132

Garcia, C. L., Abreu, L. C., Ramos, J. L. S., Castro, C. F. D., Smiderle, F. R. N., Santos, J. A. D., & Bezerra, I. M. P. (2019). Influence of burnout on patient safety: Systematic review and meta-analysis. *Medicina*, *55*(9), 553. https://doi.org/10.3390/medicina55090553

Hlubocky, F. J., Back, A. L., & Shanafelt, T. D. (2016). Addressing burnout in oncology: Why cancer care clinicians are at risk, what individuals can do, and how organizations can respond. *ASCO Educational Book, 36*. https://doi.org/10.1200/EDBK_156120

Hoffmann, R. L., Klein, S. J., & Rosenzweig, M. Q. (2016). Creating quality online materials for specialty nurse practitioner content: Filling a need for the graduate nurse practitioner. *Journal of Cancer Education,* 1–6. https://doi.org/10.1007/s13187-015-0980-3

Knox, M., Willard-Grace, R., Huang, B., & Grumbach, K. (2018). Maslach Burnout Inventory and a self-defined, single-item burnout measure produce different clinician and staff burnout estimates. *Journal of General Internal Medicine, 33*(8), 1344–1351. https://doi.org/10.1007/s11606-018-4507-6

Koutsimani, P., Montgomery, A., & Georganta, K. (2019). The relationship between burnout, depression, and anxiety: A systematic review and meta-analysis. *Frontiers in Psychology*, *10*, 284. https://doi.org/10.3389/fpsyg.2019.00284

Lee, A. I., Masselink, L. E., De Castro, L. M., Marshall, A. L., Connell, N. T., Dent, G. A.,...Erikson, C. E. (2023). Burnout in US hematologists and oncologists: impact of compensation models and advanced practice provider support. *Blood Advances*, *7*(13), 3058–3068. https://doi.org/10.1182/bloodadvances.2021006140

LeNoble, C. A., Pegram, R., Shuffler, M. L., Fuqua, T., & III, D. W. W. (2020). To address burnout in oncology, we must look to teams: Reflections on an organizational science approach. *JCO Oncology Practice, 16*(4), e377–e383. https://doi.org/10.1200/jop.19.00631

Lyndon, A. (2015). Burnout among health professionals and its effect on patient safety. https://psnet.ahrq.gov/perspective/burnout-among-health-professionals-and-its-effect-patient-safety

Maslach, C., Jackson, S. E., Leiter, M. P., Schaufeli, W. B., & Schwab, R. L. (1986). *Maslach burnout inventory* (Vol. 21). Consulting psychologists press. Palo Alto, CA.

Murali, K., Makker, V., Lynch, J., & Banerjee, S. (2018). From burnout to resilience: An update for oncologists. *ASCO Educational Book, 38*, 862–872. https://doi.org/10.1200/edbk_201023

Orozco, J. M., Furman, J., McAndrews, K. K., Keenan, M. M., Roman, C., Guthrie, J.,...& Wilson, A. B. (2019). Assessing burnout among advanced practice providers (APPs) compared with APP trainees. *Medical Science Educator*, *29*(4), 1023–1031. https://doi.org/10.1007/s40670-019-00799-x

Rasmussen, V., Turnell, A., Butow, P., Juraskova, I., Kirsten, L., Wiener, L.,...Grassi, L. (2016). Burnout among psychosocial oncologists: an application and extension of the effort-reward imbalance model. *Psycho-Oncology, 25*(2), 194–202. https://doi.org/10.1002/pon.3902

Sabo, B. (2011). Reflecting on the concept of compassion fatigue. *Online Journal of Issues in Nursing, 16*(1).

Schaufeli, W., Leiter, M., & Maslach, C. (2009). Burnout: 35 years of research and practice. *Career Development International, 14*. https://doi.org/10.1108/13620430910966406

Shanafelt, T. D., Gradishar, W. J., Kosty, M., Satele, D., Chew, H., Horn, L.,...Raymond, M. (2014). Burnout and career satisfaction among US oncologists. *Journal of Clinical Oncology, 32*(7), 678–686. https://doi.org/10.1200/JCO.2013.51.8480

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International Journal of Behavioral Medicine, 15*(3), 194–200. https://doi.org/10.1080/10705500802222972

Sorenson, C., Bolick, B., Wright, K., & Hamilton, R. (2016). understanding compassion fatigue in healthcare providers: A review of current literature. *Journal of Nursing Scholarship*, *48*(5), 456–465. https://doi.org/10.1111/jnu.12229

Tak, H. J., Curlin, F. A., & Yoon, J. D. (2017). Association of intrinsic motivating factors and markers of physician well-being: A national physician survey. *Journal of General Internal Medicine*, *32*(7), 739–746. https://doi.org/10.1007/s11606-017-3997-y

Tetzlaff, E. D., Hylton, H. M., Ruth, K. J., Hasse, Z., & Hall, M. J. (2022). Changes in burnout among oncology physician assistants between 2015 and 2019. *JCO Oncology Practice, 18*(1), e47–e59. https://doi.org/10.1200/op.21.00051

Yates, M., & Samuel, V. (2019). Burnout in oncologists and associated factors: A systematic literature review and meta-analysis. *European Journal of Cancer Care, 28*(3), e13094. https://doi.org/10.1111/ecc.13094

Yester, M. (2019). Work-life balance, burnout, and physician wellness. *The Health Care Manager, 38*(3), 239–246. https://doi.org/10.1097/hcm.0000000000000277