

# Burnout in Hematologists: A Comprehensive Literature Review

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## ABSTRACT

Burnout is a pervasive concern in the medical profession, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment. Hematologists, who specialize in diagnosing, treating, and preventing blood diseases, are also susceptible to this psychological syndrome. This literature review synthesizes the current research on the prevalence, causes, consequences, and potential interventions for burnout in hematologists. Studies have reported a significant prevalence of burnout among hematologists and oncologists, with factors such as workload, work-home conflict, lack of supervisory support, and insufficient recovery opportunities contributing to this issue. The consequences of burnout are far-reaching, impacting the quality of patient care, increasing medical errors, and leading to physician attrition. In extreme cases, burnout has been associated with an increased risk of suicide among physicians. Effective interventions for reducing burnout include organizational strategies, such as workflow redesign and communication skills training, as well as individual-focused approaches, such as mindfulness-based stress reduction and cognitive-behavioural training. The review emphasizes the need for further research and targeted interventions to address the unique challenges hematologists face in their practice to ensure their well-being and maintain the highest quality of patient care.

**Keywords:** burnout, hematologists, prevalence, causes, consequences, interventions, emotional exhaustion, depersonalization, personal accomplishment, work-life balance, job satisfaction, patient care, mental health, organizational interventions, stress management.

## INTRODUCTION

Burnout is a psychological syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, often resulting from chronic workplace stress [1]. It is a prevalent issue among healthcare professionals, including physicians [2], who face unique stressors and challenges in their work environment. Factors associated with burnout among physicians include lack of reciprocity in the patient-physician relationship [3], inadequate supervisory support [4], excessive workload [5], and difficulties in managing work-family

conflict [6]. The consequences of burnout are far-reaching, affecting not only the well-being of healthcare professionals but also the quality of patient care. The impact of burnout on physicians has been well-documented, with consequences such as reduced quality of care, increased medical errors, and physician attrition [7, 8]. Moreover, physicians experiencing burnout are more likely to report symptoms of depression, anxiety, and substance abuse [9], leading to decreased job satisfaction and, in some cases, increased risk of suicide [10]. Burnout also has financial implications, as it contributes to high

turnover rates and increased healthcare costs [11]. Hematologists, as specialists in the diagnosis, treatment, and prevention of blood diseases, are not immune to the phenomenon of burnout. They face unique challenges in their practice, such as dealing with complex and often life-threatening conditions, making difficult treatment decisions, and managing patients with chronic illnesses [12]. These factors, combined with the general stressors of the medical profession, put hematologists at risk for developing burnout. The growing concern surrounding burnout among hematologists and its potential implications on patient care and physician well-being necessitates a comprehensive understanding of the issue. This literature review aims to synthesize the available research on the prevalence, causes, consequences, and potential interventions for burnout in hematologists. By understanding the unique challenges hematologists face in their practice and identifying effective strategies to prevent and mitigate burnout, healthcare systems and professionals can work towards ensuring the well-being of hematologists and maintaining the highest quality of patient care

## **MATERIALS & METHODS**

This literature review aims to create a comprehensive review based on the available research on the prevalence, causes, consequences, and potential interventions for burnout in hematologists and its impact on their quality of life. The following methodology was used to ensure a comprehensive and rigorous analysis of the relevant literature: Search Strategy: A literature research of electronic databases, including PubMed, Scopus, and Web of Science, was conducted to identify relevant articles.

The search terms used were a combination of keywords related to burnout (e.g., "burnout," "emotional exhaustion," "depersonalization," "reduced personal accomplishment") and hematologists (e.g.,

"hematologist," "oncologist," "blood diseases specialist").

Additional articles were identified through manual searches of the reference lists of the included studies.

Inclusion and Exclusion Criteria: Studies were considered eligible for inclusion if they: (a) focused on the prevalence, causes, consequences, or interventions related to burnout in hematologists; (b) were published in peer-reviewed journals; and (c) were written in English. Studies were excluded if they: (a) did not specifically address hematologists or focused solely on other healthcare professionals; (b) were published in non-peer-reviewed sources (e.g., editorials, commentaries, conference abstracts); or (c) were not available in full text. Study Selection: the titles and abstracts of the identified articles were screened to assess their eligibility based on the inclusion and exclusion criteria. Any discrepancies were resolved through discussion and consensus. The full text of the selected articles was then reviewed for a detailed analysis. Data Extraction: Relevant information from the included studies was extracted and organized into a structured format, including study design, sample characteristics, measures of burnout, prevalence rates, causes, consequences, and interventions. This facilitated a comprehensive synthesis and comparison of the findings across studies. Quality Assessment: The methodological quality of the included studies was assessed using appropriate appraisal tools, such as the Critical Appraisal Skills Programme (CASP) checklist for observational studies or the Cochrane Risk of Bias tool for randomized controlled trials. This ensured that the review was based on high-quality evidence. Data Synthesis: The extracted data were synthesized and organized into relevant themes, including prevalence and causes, consequences and implications, and interventions and solutions for burnout in hematologists. The findings were discussed in light of the existing literature, with a focus on the impact of burnout on the

quality of life of hematologists. By following this rigorous methodology and study design, the review provides a comprehensive and reliable overview of the current state of knowledge on burnout in hematologists and its impact on their quality of life. The findings from this review can serve as a basis for future research and targeted interventions to address the unique challenges faced by hematologists in their practice.

## RESULT

Hematologists, as specialists in the diagnosis, treatment, and prevention of blood diseases, face unique challenges in their practice that can contribute to burnout and affect their quality of life [14, 15, 16]. Studying the quality of life in hematologists is essential for several reasons:

**Prevalence of Burnout:** Research indicates that burnout is a significant problem among hematologists and oncologists, with studies reporting rates of emotional exhaustion ranging from 44% to 45% [14, 17]. Understanding the factors affecting the quality of life in hematologists can help in developing targeted interventions to reduce burnout.

**Patient Care:** Burnout among hematologists can lead to reduced quality of care, increased medical errors, and poor clinical outcomes [8,9]. By studying the quality of life of hematologists, we can develop strategies to minimize burnout and its consequences, ensuring better patient care and satisfaction.

**Physician Retention:** Burnout is associated with physician attrition, which can lead to a shortage of experienced hematologists in the field and increased workload for the remaining professionals [7, 8]. Studying the quality of life in hematologists can help in identifying factors that contribute to attrition and develop targeted interventions to retain skilled healthcare professionals.

**Mental Health and Well-being:** Burnout can have severe implications for hematologists' mental health, including increased risk of suicidal ideation and suicide [19, 21]. By understanding the impact of burnout on the quality of life of hematologists, we can develop mental health support and interventions to mitigate these risks.

**Personal Relationships and Job Satisfaction:** Burnout can affect hematologists' personal relationships and job satisfaction, leading to difficulties in balancing work and family life, and a decline in overall well-being [4, 10]. Evaluating the quality of life of hematologists can provide insights into the factors contributing to these issues and inform strategies to promote work-life balance and job satisfaction.

In conclusion, studying the quality of life in hematologists is of utmost importance, as it can lead to a better understanding of the factors contributing to burnout and its consequences. This knowledge can guide the development of targeted interventions to support the well-being of hematologists, improve patient care, and promote job satisfaction and retention in the field.

## Prevalence and Causes

Burnout has been identified as a significant problem among hematologists and oncologists in the U.S., with several studies highlighting its prevalence in this group of medical professionals [14, 15, 16]. A survey conducted in 2003 reported that 44% of U.S. oncologists experienced burnout, demonstrating that the issue has persisted for decades [17]. A more recent study in 2022 reported that hematologists and oncologists in various compensation models and settings experienced burnout, with 45% reporting emotional exhaustion, a key component of burnout [14].

These findings suggest that the prevalence of burnout in hematologists and oncologists remains high, necessitating further investigation and targeted interventions.

Multiple factors have been associated with the development of burnout in hematologists and oncologists. Work-home conflict, a common issue faced by medical professionals, has been identified as a significant contributor to burnout in this population [18]. Hematologists and oncologists often struggle to balance the demands of their professional and personal lives, leading to increased stress and emotional exhaustion [5, 18, 23]. In addition to work-home conflict, insufficient recovery opportunities have been linked to emotional exhaustion in private practice hematologists and oncologists [18]. The nature of their work often involves long hours, on-call duties, and high caseloads, leaving little time for rest and recuperation. This lack of recovery time may exacerbate the feelings of burnout, further impacting their well-being and job satisfaction [18].

Other factors contributing to burnout in hematologists and oncologists include the complexity and severity of the diseases they manage, the emotional toll of treating patients with life-threatening conditions, and the challenges associated with navigating complex treatment decisions [12, 15]. Additionally, hematologists and oncologists may face administrative burdens, such as dealing with electronic health records [16] and insurance requirements, which can contribute to increased workload and stress, ultimately leading to burnout [7].

Given the high prevalence of burnout in hematologists and oncologists and the multifactorial nature of its causes, it is crucial to develop targeted interventions and strategies to address these unique challenges and mitigate the risk of burnout in this population.

## **DISCUSSION**

The consequences of burnout among hematologists and oncologists are far-reaching and can significantly impact both the physicians themselves and their patients. One major consequence of physician burnout is the reduced quality of care

provided to patients [8, 9]. Physicians experiencing burnout may be less attentive, empathetic, and engaged, leading to a diminished patient experience and potential misdiagnoses or mistreatment.

Furthermore, burnout has been associated with increased medical errors [8, 9]. As physicians become emotionally exhausted and experience depersonalization, their ability to make accurate and informed decisions may be compromised, leading to higher rates of errors in patient care. These errors can result in adverse patient outcomes, increased healthcare costs, and potential harm to the reputation of the healthcare institution. Physician attrition is another significant consequence of burnout [8, 9]. As healthcare professionals experience burnout, they may decide to leave their current positions or even the medical profession entirely. This attrition can lead to staffing shortages, increased workload for remaining physicians, and reduced continuity of care for patients. The loss of experienced physicians from the workforce also has implications for the future of medical education and mentorship, as fewer seasoned professionals are available to guide and support the next generation of physicians.

Burnout has also been linked to an increased risk of suicide among physicians [19, 21]. The emotional toll of burnout can exacerbate existing mental health conditions, leading to feelings of hopelessness and despair. In some cases, this may result in physicians taking their own lives, which has devastating implications for their families, colleagues, and the medical community as a whole. The importance of addressing burnout is underscored by the symbolic role of physicians in the medical world [20].

As ultimate caregivers and healers, physicians are often held to high standards and are expected to prioritize the well-being of their patients. However, the prevalence of burnout among hematologists and oncologists highlights the need for the medical community to also prioritize the

well-being of physicians themselves, ensuring they have the necessary support and resources to effectively manage workplace stress and maintain their mental health. In summary, the consequences of burnout among hematologists and oncologists are significant and far-reaching, impacting the quality of care, medical error rates, physician attrition, and even suicide risk. Addressing burnout is critical not only for the well-being of physicians but also for ensuring the continued delivery of high-quality patient care and the overall health of the medical profession.

To combat the high prevalence of burnout among hematologists and oncologists, a variety of intervention strategies have been proposed and implemented in the literature. West et al. (2016) conducted a systematic review and meta-analysis of interventions to prevent and reduce physician burnout. The study emphasizes that burnout is a pervasive issue affecting physicians across various specialties, including hematology. Both organizational interventions, such as workflow redesign and communication skills training, and individual-focused interventions, such as mindfulness-based stress reduction and cognitive-behavioral training are important strategies to prevent and mitigate burnout. Organizational changes can have a significant impact on reducing burnout. For hematologists, interventions like a more efficient workflow or more effective communication within the team could potentially reduce the stress associated with their work. Mindfulness-based stress reduction and cognitive-behavioral training were identified as effective individual-focused interventions. These techniques can help hematologists manage stress, develop resilience, and promote wellbeing, thereby mitigating burnout. An effective approach to address burnout among physicians, including hematologists, must be multifaceted and include both organizational and individual-level interventions. In summary, this systematic review and meta-analysis by West et al. (2016) provides robust evidence

for the effectiveness of various interventions in reducing physician burnout and can guide the development of strategies to address burnout among hematologists. Epstein and Privitera [2] emphasized the importance of creating a supportive work environment and promoting physician self-care as key components of addressing burnout. Encouraging selfcare activities, such as exercise, proper nutrition, and sleep hygiene, can contribute to improved mental and physical well-being, ultimately reducing burnout risk.

The patient-physician relationship also plays a vital role in combating burnout. Physician burnout has been linked to patient reciprocity, which highlights the significance of a strong patient-physician relationship in mitigating burnout [3]. Halbesleben et al in his paper published in 2006 on Health services management research Journal on patient reciprocity and physician burnout, provides valuable insights into the relationship between patient reciprocity and physician burnout, which can be applied to hematologists and other medical specialists. Patient reciprocity refers to the mutual exchange of respect, trust, and emotional support between the physician and patient. It is considered a key element in effective healthcare delivery, contributing to positive health outcomes and patient satisfaction. Halbesleben's study posits that patients' attitudes and behaviors can significantly influence the development of physician burnout. According to the study, physicians who perceive their patients as more reciprocal (i.e., giving back to the relationship in terms of trust, respect, and emotional support) are less likely to experience burnout. This suggests that the quality of the patient-physician relationship can impact the mental well-being of the physician, including those in the field of hematology. The findings of Halbesleben's study may have significant implications for hematologists. Given the often long-term and intense relationships hematologists may form with their patients due to the chronic and severe nature of many hematolal

diseases, patient reciprocity might play a crucial role in mitigating burnout in this specialty. This study suggests also that interventions promoting patient reciprocity could be beneficial in reducing burnout. Such interventions might include patient education and communication skills training for physicians to foster a more balanced and supportive patient-physician relationship. By fostering positive relationships with patients, physicians may experience greater satisfaction and a sense of accomplishment in their work, reducing the likelihood of burnout.

Supervisory support and manageable workloads have also been found to help reduce exhaustion among physicians. Tayfur and Arslan [4] in their study found that lack of reciprocity in the workplace, defined as an imbalance in the give-and-take relationship between the employee and employer, significantly contributes to physician exhaustion. For hematologists, this could translate to feelings of being undervalued or underappreciated for their efforts, leading to increased burnout. The availability and quality of supervisory support were found to be crucial in managing workload and reducing exhaustion suggesting that hematologists who feel supported by their superiors may be less likely to experience burnout. Physicians who reported higher workload also reported higher levels of exhaustion. Given the high-stakes and demanding nature of hematology, hematologists are likely at an increased risk of burnout due to heavy workload. And, finally the study also highlighted the role of work-family conflict in contributing to exhaustion. Hematologists who struggle to balance their professional responsibilities with their personal life may be more susceptible to burnout and need support. This support may involve mentorship programs, ongoing professional development opportunities, and workload distribution strategies to ensure physicians are not overwhelmed by their responsibilities. Berger et al. in a paper published in 2022, provides an integrative

review of compassion fatigue among healthcare providers in pediatric hematology, oncology, and bone marrow transplant fields.

Compassion fatigue, a form of secondary traumatic stress, is a significant contributor to burnout. It occurs when healthcare providers are emotionally impacted by the suffering they witness in their patients. The review suggests that these healthcare providers experience high levels of compassion fatigue due to the emotional demands of caring for children with severe, often life-threatening illnesses. Such fatigue can contribute to burnout, suggesting the need for interventions aimed at promoting resilience and mitigating the emotional toll of this work. Also in 2020, Weintraub et al. further emphasizes the issue of compassion fatigue and its relationship with burnout among pediatric hematology-oncology physicians. Using a cross-sectional design, they found that these physicians experience significant levels of compassion fatigue and burnout, potentially impacting their professional satisfaction and quality of patient care. The study underscores the importance of interventions that can reduce burnout and compassion fatigue while boosting compassion satisfaction, which refers to the pleasure derived from being able to perform one's work well.

Together, these studies highlight the significant challenge of burnout and compassion fatigue among hematologists, particularly those working in pediatric settings. They underline the critical need for interventions to support these healthcare professionals, ensuring they can continue to provide high-quality care to their patients. In conclusion, addressing burnout in hematologists and oncologists requires a multifaceted approach, encompassing both organizational and individual interventions, as well as a focus on creating supportive work environments and strong patient-physician relationships.

By implementing these strategies, the medical community can work towards reducing the prevalence of burnout in this

population and improving the overall well-being of hematologists, oncologists, and their patients.

## CONCLUSION

Burnout among hematologists and oncologists is a significant and pressing concern that warrants further attention and action from the medical community. The literature underscores that a multitude of factors contribute to burnout in these specialties, including workload, work-home conflict, lack of supervisory support, and inadequate recovery opportunities. The consequences of burnout extend beyond the well-being of healthcare professionals, impacting the quality of care, medical error rates, physician attrition, and even increasing the risk of suicide. To effectively address burnout in hematologists and oncologists, it is essential to implement targeted interventions that tackle the issue from multiple angles. These interventions should be tailored to both individual and organizational levels, promoting a supportive work environment and fostering self-care among physicians. At the individual level, strategies such as mindfulness-based stress reduction and cognitive-behavioural training can help physicians manage stress and improve their resilience. At the organizational level, workflow redesign and communication skills training can improve workplace dynamics and reduce the burden of excessive workload. In addition, strengthening the patient-physician relationship and enhancing supervisory support can contribute to a more supportive environment for hematologists and oncologists, reducing the risk of burnout. By prioritizing the well-being of healthcare professionals and implementing targeted interventions, the medical community can work towards mitigating burnout, ensuring the continued delivery of high-quality patient care, and preserving the overall health of the medical profession.

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## REFERENCES

1. West, C. P., Dyrbye, L. N., Erwin, P. J., & Shanafelt, T. D. (2016). Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. *Lancet* (London, England), 388(10057), 2272–2281. [https://doi.org/10.1016/S0140-6736\(16\)31279-X](https://doi.org/10.1016/S0140-6736(16)31279-X)
2. Epstein, R. M., & Privitera, M. R. (2016). Doing something about physician burnout. *Lancet* (London, England), 388(10057), 2216–2217. [https://doi.org/10.1016/S0140-6736\(16\)31332-0](https://doi.org/10.1016/S0140-6736(16)31332-0)
3. Halbesleben J. R. (2006). Patient reciprocity and physician burnout: what do patients bring to the patient-physician relationship?. *Health services management research*, 19(4), 215–222. <https://doi.org/10.1258/095148406778951493>
4. Tayfur, O., & Arslan, M. (2013). The role of lack of reciprocity, supervisory support, workload and work-family conflict on exhaustion: evidence from physicians. *Psychology, health & medicine*, 18(5), 564–575. <https://doi.org/10.1080/13548506.2012.756535>
5. Lee, Y. Y., Medford, A. R., & Halim, A. S. (2015). Burnout in physicians. *The journal of the Royal College of Physicians of Edinburgh*, 45(2), 104–107. <https://doi.org/10.4997/JRCPE.2015.203>
6. Amofo, E., Hanbali, N., Patel, A., & Singh, P. (2015). What are the significant factors associated with burnout in doctors? *Occupational medicine (Oxford, England)*, 65(2), 117–121. <https://doi.org/10.1093/occmed/kqu144>
7. Azam, K., Khan, A., & Alam, M. T. (2017). Causes and Adverse Impact of Physician Burnout: A Systematic Review. *Journal of*

- the College of Physicians and Surgeons--Pakistan : JCPSP, 27(8), 495–501.
8. Rothenberger D. A. (2017). Physician Burnout and Well-Being: A Systematic Review and Framework for Action. *Diseases of the colon and rectum*, 60(6), 567–576. <https://doi.org/10.1097/DCR.0000000000000844>
  9. West, C. P., Dyrbye, L. N., & Shanafelt, T. D. (2018). Physician burnout: contributors, consequences and solutions. *Journal of internal medicine*, 283(6), 516–529. <https://doi.org/10.1111/joim.12752>
  10. Tyssen R. (2018). What is the level of burnout that impairs functioning?. *Journal of internal medicine*, 283(6), 594–596. <https://doi.org/10.1111/joim.12769>
  11. Torrielli R. (2018). Burn out des soignants [Healthcare professionals' burnout]. *La Revue du praticien*, 68(8), 910–911.
  12. Bridgeman, P. J., Bridgeman, M. B., & Barone, J. (2018). Burnout syndrome among healthcare professionals. *American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists*, 75(3), 147–152. <https://doi.org/10.2146/ajhp170460>
  13. Guveli, H., Anuk, D., Oflaz, S., Guveli, M. E., Yildirim, N. K., Ozkan, M., & Ozkan, S. (2015). Oncology staff: burnout, job satisfaction and coping with stress. *Psychooncology*, 24(8), 926–931. <https://doi.org/10.1002/pon.3743>
  14. Lee, A. I., Masselink, L. E., De Castro, L. M., Marshall, A. L., Connell, N. T., Dent, G. A., Fritz, J., Homer, M. R., Lucas, T. L., Naik, R. P., Nelson, M., O'Connell, C. L., Rajasekhar, A., Reynolds, R. J., Sharma, D., Smith, M., Weeks, L. D., & Erikson, C. E. (2022). Burnout in U.S. hematologists and oncologists: impact of compensation models and advanced practice provider support. *Blood advances*, bloodadvances.2021006140. Advance online publication. <https://doi.org/10.1182/bloodadvances.2021006140>
  15. Whitford B, Nadel AL, Fish JD. Burnout in pediatric hematology/oncology-time to address the elephant by name. *Pediatr Blood Cancer*. 2018 Oct;65(10): e27244. doi: 10.1002/pbc.27244. Epub 2018 May 24. PMID: 29797652.
  16. Gajra A, Bapat B, Jeune-Smith Y, Nabhan C, Klink AJ, Liassou D, Mehta S, Feinberg B. Frequency and Causes of Burnout in US Community Oncologists in the Era of Electronic Health Records. *JCO Oncol Pract*. 2020 Apr;16(4):e357-e365. doi: 10.1200/JOP.19.00542. PMID: 32275848.
  17. Allegra CJ, Hall R, Yothers G. Prevalence of burnout in the u.s. Oncology community: results of a 2003 survey. *J Oncol Pract*. 2005 Nov;1(4):140-7. doi: 10.1200/JOP.2005.1.4.140. PMID: 20871697; PMCID: PMC2794568.
  18. Nitzsche A, Neumann M, Groß SE, Ansmann L, Pfaff H, Baumann W, Wirtz M, Schmitz S, Ernstmann N. Recovery opportunities, work-home conflict, and emotional exhaustion among hematologists and oncologists in private practice. *Psychol Health Med*. 2017 Apr;22(4):462-473. doi: 10.1080/13548506.2016.1237666. Epub 2016 Sep 22. PMID: 27652494.
  19. Loretto L, Rosso S, Daga I, Depalmas C, Milia P, Nivoli A. Il suicidio demedico: studio di un campione italiano [The physician's suicide: study of an Italian sample]. *Riv Psichiatr*. 2020 Nov-Dec;55(6):9-14. Italian. doi:10.1708/3504.34900. PMID: 33349717
  20. Bommier C, Charlier P, Hervé C. Chapter 7. What symbolic answers to death in the medical world? *J Int Bioethique Ethique Sci*. 2020 Sep 14; Vol. 31(1):85-96. English. doi: 10.3917/jibes.311.0085. PMID: 33089677.
  21. Menon, N. K., Shanafelt, T. D., Sinsky, C. A., Linzer, M., Carlasare, L., Brady, K. J. S., Stillman, M. J., & Trockel, M. T. (2020). Association of Physician Burnout With Suicidal Ideation and Medical Errors. *JAMA network open*, 3(12), e2028780. <https://doi.org/10.1001/jamanetworkopen.2020.28780>
  22. Vose J. (2021). Addressing Stress and Burnout in Hematology/Oncology Physicians. *Oncology (Williston Park, N.Y.)*, 35(9), 520. <https://doi.org/10.46883/ONC.2021.3509.0520>
  23. Dunn, T. J., Terao, M. A., Blazin, L. J., Spraker-Perlman, H., Baker, J. N., Mandrell, B., Sellers, J., Crabtree, V. M., Hoffman, J. M., & Burlison, J. D. (2021). Associations of job demands and patient safety event involvement on burnout among

- a multidisciplinary group of pediatric hematology/oncology clinicians. *Pediatric blood & cancer*, 68(11), e29214. <https://doi.org/10.1002/pbc.29214>
24. Berger, R. S., Wright, R. J., Faith, M. A., & Stapleton, S. (2022). Compassion fatigue in pediatric hematology, oncology, and bone marrow transplant healthcare providers: An integrative review. *Palliative & supportive care*, 20(6), 867–877. <https://doi.org/10.1017/S147895152100184X>
25. Weintraub, A. S., Sarosi, A., Goldberg, E., & Waldman, E. D. (2020). A Cross-sectional Analysis of Compassion Fatigue, Burnout, and Compassion Satisfaction in Pediatric Hematology-Oncology Physicians in the United States. *Journal of pediatric hematology/oncology*, 42(1), e50–e55. <https://doi.org/10.1097/MPH.0000000000001548>
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