American Journal of Pharmaceutical Education

Addressing Burnout with Well-Being and Resilience in Pharmacy Residency Training Programs

--Manuscript Draft--

Manuscript Number:	ajpe8287
Full Title:	Addressing Burnout with Well-Being and Resilience in Pharmacy Residency Training Programs
Article Type:	Review
Keywords:	Burnout; Pharmacy Resident; Well-being; Resilience
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Manuscript Region of Origin:	UNITED STATES
Abstract:	Objective . The purpose of this article is to identify factors associated with burnout, introduce the concepts of well-being and resilience, and review strategies to reduce or prevent burnout in pharmacy residency training programs. Findings . Healthcare provider burnout has become a major topic of interest across all disciplines in recent years. Pharmacy residents may be especially prone to the detrimental effects of burnout, yet little has been published with regard to pharmacy residents. Drawing from interdisciplinary literature, several strategies to reduce burnout and/or improve well-being and resilience have been proposed: acknowledging and educating residents on burnout and the associated symptoms, implementing facilitated group discussions, expanding autonomy and flexibility, providing mentorship and advising, creating a positive learning environment, ensuring time away from work, offering mindfulness programs, and establishing individual well-being and resilience practices. Summary . Action must be taken to protect the well-being and resilience of pharmacy residents and prevent detrimental effects of burnout. Unfortunately, the most impactful interventions for pharmacy residents have yet to be elucidated.

COVER LETTER
Addressing Burnout with Well-Being and Resilience in Pharmacy Residency Training Programs

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March 23, 2020

Dr. Joseph T. DiPiro:

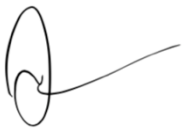
Healthcare provider burnout has become a major topic of interest across all disciplines in recent years, with nearly three-quarters of hospitals addressing the prevention and mitigation of burnout as a top priority. The long-lasting consequences on clinicians' careers, the healthcare system, and patient care reiterate the need for intervention. Recent increases in the publication of clinician burnout-related articles have improved working knowledge of the prevalence, risk factors, and potential interventions. Articles related to burnout in pharmacy practice and training are sparse, though initial investigations have demonstrated many similarities to the existing interprofessional literature. Despite the uptick in burnout-related publications, a paucity of literature remains for pharmacy residents.

Pharmacy residents may be especially prone to the detrimental effects of burnout due to the presence of risk factors including long work hours, younger age, increased stress associated with post-graduate training, and emotional exhaustion. This limits the ability to understand and address burnout in this at-risk population. Without intervention, patient health outcomes, the success of residency training programs, and individual health are all at risk. Addressing burnout in pharmacy resident programs will require a paradigm shift to emphasize the development of pharmacists able to cope with the occupational stressors of healthcare practice and supersede the current burnout epidemic.

The purpose of this article is to define, demonstrate the need for action to combat, and review strategies to reduce or prevent burnout in pharmacy residency training programs. As a comprehensive, well-referenced review, the article submitted herein offers a unique resident perspective of the current burnout epidemic and provides strategies to prevent and reduce burnout and improve well-being and resilience. To the author's knowledge, synthesis of interprofessional literature into suggestions to address burnout in pharmacy residency training programs has not been conducted previously. The submitted work supports the *Journal's* devotion to providing relevant information for pharmacy and interprofessional educators, as well as those interested in the advancement of pharmacy education, specifically, post-graduate training.

Thank you for your consideration for review of the submitted work: Addressing Burnout with Well-Being and Resilience in Pharmacy Residency Training Programs. The authors appreciate the time and efforts of the Editorial Board and look forward to contributing to the *Journal*.

To Be Continued,



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TITLE PAGE

Addressing Burnout with Well-Being and Resilience in Pharmacy Residency Training Programs

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Key Words: Burnout, Pharmacy Resident, Well-being, Resilience

Words: 3999

Pages: 20

Tables: 1

Figures: 0

Appendices: 0

Financial Disclosures: None Reported

Conflict of Interest: None Reported

ABSTRACT

Objective. The purpose of this article is to identify factors associated with burnout, introduce the concepts of well-being and resilience, and review strategies to reduce or prevent burnout in pharmacy residency training programs.

Findings. Healthcare provider burnout has become a major topic of interest across all disciplines in recent years. Pharmacy residents may be especially prone to the detrimental effects of burnout, yet little has been published with regard to pharmacy residents. Drawing from interdisciplinary literature, several strategies to reduce burnout and/or improve well-being and resilience have been proposed: acknowledging and educating residents on burnout and the associated symptoms, implementing facilitated group discussions, expanding autonomy and flexibility, providing mentorship and advising, creating a positive learning environment, ensuring time away from work, offering mindfulness programs, and establishing individual well-being and resilience practices.

Summary. Action must be taken to protect the well-being and resilience of pharmacy residents and prevent detrimental effects of burnout. Unfortunately, the most impactful interventions for pharmacy residents have yet to be elucidated.

INTRODUCTION

Healthcare provider burnout has become a major topic of interest across all disciplines in recent years due to the long-lasting consequences on clinicians' careers, the healthcare system, and patient care.[1-3] Thus far, publications assessing burnout have been primarily composed of physicians, nurses, and their respective trainees. Articles related to burnout in pharmacy practice and training are sparse, though initial investigations have demonstrated many similarities to the existing interprofessional literature.[4-9] Despite the uptick in burnout-related publications, a paucity of literature remains for pharmacy residents. Inclusion of pharmacy residents in studies assessing prevalence and risk factors, as well as strategies to reduce or prevent burnout, has been minimal. This limits the ability to understand and address burnout in this at-risk population. Special consideration must be given to pharmacists pursuing post-graduate training, as residents are likely to experience many factors associated with burnout.[10,11] Recent increases in the publication of clinician burnout-related articles have improved working knowledge of the prevalence, risk factors, and potential interventions. The purpose of this article is to identify factors associated with burnout, introduce the concepts of well-being and resilience, and review strategies to reduce or prevent burnout in pharmacy residency training programs.

Understanding Burnout

Burnout, or burnout syndrome, was first described in 1974 by clinical psychologist Herbert Freudenberger, as a job-related syndrome that develops through prolonged response to chronic interpersonal stressors.[12] These stressors are conventionally triggered by differences in the values or expectations of the clinician and the requirements and expectations of the position and employer. Burnout is characterized into three subdomains: emotional exhaustion, depersonalization, and reduced personal accomplishment.[12] Emotional exhaustion is considered the hallmark subdomain of burnout and is often the most frequently reported.[6,8] Symptoms of emotional exhaustion include feeling overwhelmed and emotionally depleted.[12,13] Depersonalization refers to negative interactions with colleagues, cynicism, and isolation.[12,13] Finally, reduced personal accomplishment leaves clinicians feeling less competent or confident in their ability.[12,13] Healthcare provider burnout has been associated with diminished well-being, decreased job satisfaction and performance, substance abuse/dependence, depression, and suicidality.[1,4,12,14,15] In addition to affecting the clinician, burnout has a significant impact on healthcare systems

and patient care. Costs may be incurred indirectly as a result of increased frequency of medical errors and diminished job performance, estimated at nearly $7,000/year per physician with burnout.[1,14] Medical errors, mortality, and infections are associated with provider burnout as well, demonstrating the negative impact on patient care.[4]

Prevalence of Burnout

The prevalence of burnout varies between professions, but its presence is evident ubiquitously.[1,3,16] The Collaborative on Clinician Well-Being and Resilience reports 35 to 54% of physicians and nurses, and 45 to 60% of medical students and residents, suffer from substantial symptoms related to burnout.[17] In a 2018 multicenter, cross-sectional survey, 175 (53.2%) institutional pharmacists demonstrated a high degree of burnout.[6] Driven primarily by high emotional exhaustion scores, two other evaluations of pharmacist burnout reported rates of 62.1% and 46% respectively.[8,18] McQuade et al. reported lower rates of pharmacist burnout (37%) in a systematic review of publications through early 2019, yet the most recently published survey noted 55.5% of respondents were at risk for burnout.[16,19]

Factors Associated with Burnout

Historically, burnout was thought to impact only those late in their professional careers. More recent studies suggest that burnout affects healthcare providers in all stages of their career, as early as the beginning of their didactic education.[1,3] This is especially of concern as residency training is an incredible stressor, and medical residency training has been associated with burnout, increased stress levels and incidence of depression, and decreased quality of life.[10,11] Unfortunately, the authors are not aware of any studies identifying risk factors for burnout in pharmacy residents, specifically. Individual risk factors have been described for pharmacists in the institutional, community, and faculty settings, as well as amongst medical practitioners and trainees (Table 1).[4-9] The literature included in Table 1 briefly summarizes the available, relevant evidence of factors associated with burnout.[2,5-11,16,19-24]

As a profession, pharmacists may be predisposed to burnout as a result of regulatory compliance, excessive documentation, and incongruities between training and daily tasks.[4,25] Individual factors associated with increased risk of burnout include: younger age, female gender, having young children or no children, being unmarried,

perceived stress, hours worked, days on-call, distributive or managerial role, and moral distress.[2,5-11,16,19-24] A complex relationship exists between burnout, perceived stress, and depression/depressive symptoms.[2,5-11,16,19-24] Stress and depression contribute to the development of burnout, through emotional exhaustion, depersonalization, and reduced personal accomplishment. However, burnout also likely contributes to the development of depression and additional stress. A survey of Austrian physicians demonstrated this bidirectional relationship – those exhibiting symptoms of burnout were more likely to experience a depressive episode and vice versa.[26]

Professional stressors nearly double the risk of burnout and have been reported as inadequate administrative and teaching time, uncertainty of healthcare reform, difficult colleagues, too many non-clinical duties, and underappreciated contributions.[8,27] An individual's employer and work environment play a major role in the risk of developing burnout. Factors associated with the work environment that increase one's risk of developing burnout include presence of early predictors of workplace burnout: lack of autonomy and control, heavy workload, no or minimal margin for error, interruption-driven environments, disorganization and ambiguity in the environment or work itself.[2,5-11,16,19-24]

Pharmacy residents are likely to be highly impressionable by the presence of these risk factors, or any improvements, as this may be their first experience with a full-time work environment.[25] Residents are typically young, in their first pharmacist role, spend long hours on-site, and often participate in on call programs. All of these responsibilities require additional time and attention, potentially reducing dedicated time for activities known to reduce burnout.[2,11] The increase in responsibilities, expectations, evaluations, and pressure to excel all place residents under additional professional, situational, and personal stress.[2] Adopting strategies to reduce and prevent burnout may mitigate identified risk factors and/or improve well-being and resilience.

Well-Being and Resilience

In 2014, the National Academy of Medicine (NAM) transitioned from a Triple Aim to a Quadruple Aim in response to the current crisis of burnout in healthcare. The Triple Aim was developed in an effort to improve the delivery of healthcare by improving individual care and population health, while reducing costs of care and overall healthcare expenditures. This fourth component, *Care Team Well-Being*, supplemented the pre-existing aims of *Patient Experience*, *Population Health*, and *Reducing Costs*. NAM president, Victor J. Dzau, eloquently

summarizes this aim: "Through collective action and targeted investment, we can not only reduce burnout and promote well-being, but also help clinicians carry out the sacred mission that drew them to the healing professions – providing the very best care to patients."[28]

Understanding the concepts of and implementing strategies to improve well-being and resilience are crucial to achieving this aim. Well-being is described as the presence of positive and absence of negative emotions, satisfaction with life, fulfillment, and positive functioning.[17,27] By definition, well-being is a psychological state subject to change from moment to moment. Well-being can be achieved by implementing new programs and improving the work environment. Resilience is a dynamic process that relies on past and future experiences to adapt, overcome, or 'bounce back' in the face of adversity.[17,27] Specifically, resilience is the set of individual skills, behaviors, and attitudes that contribute to physical, emotional, and social well-being, including the prevention of burnout. In contrast to well-being, resiliency can only be developed by the individual. However, training can foster the personal development of resilience.

Currently, many well-being and resilience initiatives emphasize improving individual coping skills. While individual-based approaches are undeniably important, current evidence outlines the importance of creating positive learning/practice environments, providing support, and developing interventions at the system/organizational level.[9,29,30] Unfortunately, the implementation of organization-wide well-being and resilience initiatives has not been well-established. Only 17.3% of pharmacists reported having access to well-being and resilience resources and 4% reported utilizing such resources.[6] In the preliminary results of American Society of Health-System Pharmacist's (ASHP) 2019 Well-Being and Resilience Survey, more pharmacists (40%) reported being offered well-being and resilience resources. However, utilization of such resources remains low, as nearly 75% of pharmacist have not participated in any employer-organized programming.[31] Contributory factors may include stigma, poor advertisement, unfamiliarity, or perception that such programs are ineffective or unhelpful.

ASHP, in addition to serving as a professional organization, is the accrediting body for pharmacy residency programs. The organization is a sponsor of the NAM Action Collaborative on Clinical Well-Being and Resilience and has stated its commitment to fostering and sustaining the well-being and resilience of pharmacists, residents, students, and technicians. In the 2019 updates to the residency Accreditation Standards, multiple references have

been added to educate and provide resources on well-being.[31] Implementation of these standards, however, is left up to each residency program. As such, many programs may struggle to integrate well-being and resilience practices into their curricula, despite a strong desire to do so. The following strategies are intended to provide additional guidance for residency programs based on the available, interdisciplinary literature.

Introduction of Burnout, Well-Being, and Resilience During Resident Orientation

Among many healthcare providers and trainees, there is a spurious self-belief: *As a healthcare provider, I can't have physical or mental illness of my own*. The World Health Organization first acknowledged burnout in 2018, as an occupational phenomena.[32] While awareness of burnout likely increased with a broadened definition in the International Classification of Diseases (11th Revision), significant stigma in reporting burnout remains.[32] ASHP reports that less than half (45%) of pharmacists are comfortable telling their supervisors about feeling burned out.[18] Residents' propensity to hide feelings of burnout or clinical anxiety/depression is presumably even greater. Pressures to achieve, meet expectations, obtain recommendations for jobs or second year training programs likely contribute to the avoidance of discussing burnout.[33] Further, residents may fear implications on their licensure and jeopardization of their career if they seek help for mental-health issues and burnout.[33]

In multiple studies, the lack of or unawareness of burnout and well-being/resilience programs or initiatives is associated with greater rates of burnout.[6] During the orientation period, residents should be educated on the prevalence and warning signs of burnout, as well as made aware of mitigation strategies and resources for well-being and resilience. Regular follow-up throughout the program reminds residents of the available resources.

Facilitated Group Discussions

Facilitated group discussions offer clinicians the opportunity to share experiences that may be stressful and/or traumatic. Simultaneously, group discussions provide a safe environment to share and may initiate a paradigm shift in the stigma associated with burnout. Physicians who participated in facilitated group discussions, were found to have decreased burnout, driven by reduced depersonalization and emotional exhaustion.[30] Sessions were held during protected, paid time, presumably contributing to program success. Integration of these discussions into day-to-day operations improves attendance and participation compared to offering them as an extracurricular activity.

Facilitated group discussions have shown promise in preventing burnout and allowing clinicians to process stressful events. Focus should be given to addressing resident concerns, rather than simply teaching non-specific approaches to reducing burnout. Providing such sessions may also provide the opportunity to notice signs and symptoms of burnout early and intervene, as appropriate.

Autonomy and Flexibility

Residency represents a unique time in newly graduated pharmacists' professional careers. While licensure asserts competence as a pharmacist, obtaining additional training through residency requires oversight and a coordinated program to meet ASHP standards. As a result, most programs are highly structured and offer limited flexibility and personal choice. Allowing residents to be autonomous and demonstrate self-efficacy in their decision-making has been shown to improve well-being.[2,34] In a series of in-depth interviews conducted by Lases et al., feeling able to make autonomous decisions was repeatedly mentioned by medical residents as an important factor for experiencing well-being.[34] For pharmacy residents, autonomous decisions may take the form of topic selection for a resident research project or continuing education lecture, availability and number of elective rotations, and advisor/mentor selection.

Flexibility and a perceived sense of self-control in the scheduling of one's residency also improve well-being.[34] Potential interventions to broaden flexibility include allowing pharmacy residents to alter their schedule as their career goals change and developing projects and presentations based upon the resident's areas of interest. Flexibility may also be applied to day-to-day tasks and duties. Spending a greater proportion of time on work activities that individuals find most fulfilling has been shown to significantly reduce rates of burnout in physicians.[15] Working with the resident to identify these areas may allow for dedication of greater time to those activities. For instance, if a resident enjoys direct patient interaction, it may be advisable to prioritize medication reconciliation and education or counseling as required activities during a certain part of each day.

Mentorship/Advising

Mentoring is a crucial component of professional development across all fields of healthcare. Residents can especially benefit as they transition from student to confident practitioner. Residency programs vary in how they design and implement mentoring programs, but an assessment 44% of medical residents reported unmet needs for

mentoring.[35] Interestingly, one of the primary areas of unmet mentorship was work-life balance.[35] A strong mentor-mentee relationship can help identify resident burnout and improve well-being and resilience. If a residency program does not have a formal system for mentoring, one should be established. Anecdotally, resident advisors have been impactful in the transition to residency. Potential initial roles include aid residents with relocation, navigation of the licensure process, rotation selection, and professional development. Other roles may be resident-specific, based upon the resident's career goals, practice interests, identified strengths, and areas for improvement.

Per ASHP accreditation requirements, programs must conduct quarterly meetings to review each resident's development plan. Integration of well-being measures into the development plan is an opportunity to emphasize resident well-being and ensures assessment of resident burnout quarterly. This encourages residents to reflect on their self-care and well-being practices, but also provides preceptors and/or the residency program director insight to the resident's well-being. Another strategy is to integrate resident-identified well-being goals into evaluations for each rotation. For instance, on the first day of each learning experience, the resident identifies a well-being goal (exercising, cooking, sleep, etc.) to be assessed as part of formative and summative evaluations.

Preceptorship, Feedback, and Recognition

Preceptors play a critical role in resident development and can significantly impact resident well-being and resilience through preceptorship, feedback, and recognition. One must consider the resident's clinical education and their well-being. Residents are impressionable by nature and exposure to positive modeling behaviors can be impactful. These behaviors can include employing personal well-being and resilience techniques, maintaining positive work-life integration, and demonstrating interests outside of the workplace. Residency preceptors should be encouraged to share their own experiences with burnout, if they feel comfortable doing so.

The resident's perception of workload has major implications on their personal and professional lives. Excessive workload is clearly associated with stress and burnout.[3,5,9,25,30] Careful consideration should be given to workload to provide meaningful learning experiences and limit activities perceived as 'busy work'. As a program, all longitudinal requirements should be frequently reviewed to ensure each is enriching, supportive of the program objectives, and meaningful for the resident and program.

Feedback is another critical component of resident development during the training curricula. Appropriate feedback is objective and provides actionable areas for improvement. Positive feedback is motivating for learners, especially when facing challenges or criticism.[4,36] Residents have previously proposed areas of improvement for preceptors.[37] These include aligning teaching style with the resident's learning style and providing informal, "in-the-moment" feedback.[37] Similar to positive feedback, residents gain a sense of achievement, as well as stress reduction and improved well-being, when their efforts are matched with recognition and reward.[34]

Those involved with the education and training of residents should involve the resident in establishing expectations and activities, provide positive feedback when appropriate and ensure constructive feedback is specific and actionable. Preceptors should work with each resident to align the learning experience with the needs, career goals, and expectations of the learner. Finally, preceptors should limit work perceived as 'busy work', recognize the efforts of the trainee, and strive to create positive learning environments to motivate residents and improve their well-being and resilience.[36]

Time Away from Work

Burnout is characterized by the inability to recover from stress of work-related events. The majority of health-system pharmacists (71.7%) feel that too many hours worked is a major stressor and has a moderate to large impact on their career.[8] In another study, pharmacy residents reported higher perceived stress scores and exhibit greater depression and hostility when working longer hours.[10] Medical residents who reported awareness to their time off policies exhibited more positive experiences and emotions, and greater career satisfaction.[38] Time away from work also provides residents time to practice self-care and physical well-being activities.[38] Pharmacy residents should be made aware of the time-off policy during orientation and encouraged to utilize the provided time to prevent burnout and improve well-being.

Mindfulness

One of the most studied strategies to reduce burnout, build resilience, and improve clinician well-being is the practice of mindfulness. Mindfulness is a very broad concept and includes many different exercises. Formal activities are when time is set aside, usually 10 minutes, to allocate your attention to developing mindfulness. Informal activities have great utility in healthcare, as these exercises can be conducted on-the-fly. Typically, these

are rooted in taking pause and grounding oneself in the present moment. Mindfulness is practiced and experienced by each individual differently, leading to challenges in research due to variance in definition or outcome.

No universally accepted definition of mindfulness exists, however one of the most popular is that of mindfulness expert John Kabat-Zinn who developed Mindfulness-Based Stress Reduction (MBSR). Kabat-Zinn defines mindfulness as moment-to-moment awareness, cultivated by paying attention in a specific way, in the present moment.[39] A simpler definition is creating a moment where the mind and the body are in the same place at the same time.[40] Mindfulness training has been associated with psychological well-being in a variety of settings. In recent years, numerous studies have demonstrated its benefit in the healthcare field with improvements in stress levels, depression, anxiety, and burnout.[39,41]

Two prospective, interprofessional, 8-week mindfulness curricula have been studied at large, academic medical centers. These programs demonstrated significant reduction in perceived stress, anxiety, emotional exhaustion, and depersonalization.[42,43] Participants reported recognizing the importance of prioritizing self-care, as well as improvement in self-efficacy.[42,43]A review of nurses and nursing students found that mindfulness meditation has a positive impact on their stress, anxiety, depression, burnout, and sense of well-being.[44] One brief mindfulness-based resilience training program for medical residents did not find a significant difference in perceived stress, however, study limitations may have contributed to the lack of perceived benefit.[45] A one-month follow-up may not have provided adequate time to develop an impactful practice, as the greatest stress reduction with mindfulness training develops through cumulative practice. A second limitation may have led to underrepresentation of those with most potential to benefit, as only residents without clinical duties were able to participate in the study.

Smartphone applications offer guided mindfulness meditations and courses. These applications have the potential to engage users at their convenience and many are free. One of the most popular applications, Headspace, is a user-friendly mindfulness app with nearly limitless guided meditations and practices.[46] In 2018, the company conducted a randomized controlled trial to assess the effects of app usage on mental health and well-being. Application users were found to have an 11% decrease in stress after 10 days and a 32% decrease after 30 days.[46]

Mindfulness training and meditation practice can be very effective in combating burnout in healthcare, but significant barriers to implementation exist. The most frequently reported barrier to implementation is time.[39,44,47]

Integrating mindfulness training into residency curricula may alleviate this and facilitate implementation. Other barriers include financial pressure on the individual to participate, which can be eliminated through organizational support, and personal beliefs which may deter an individual from participating.

Individual Efforts to Improve Well-Being and Resilience

During the challenging and stressful times of residency training, taking care of oneself is often the first responsibility to take a backseat. Nearly every healthcare provider can attest to putting all demands above their own at some point. However, as previously mentioned, burnout and poor well-being negatively impacts patient care.[1,3,14] As a profession, a precedence must be established to balance self-care with patient-care.

Effectively managing stress is incredibly important, but not all coping strategies are healthy or advisable. Maladaptive coping strategies, despite temporarily providing perceived stress relief, negatively impact burnout, well-being, and resilience.[48] Other examples of maladaptive coping include disengagement, denial, self-blame, alcohol use, and substance abuse/dependence.[48] Adaptive coping mechanisms help alleviate stress and encourage resilience. Strategies such as planning, positive reframing, active coping, acceptance, and use of support are considered adaptive coping mechanisms.[48]

Adequate sleep and dedication to sleep hygiene are imperative for proper functioning and physiologic restoration. Sleep loss affects well-being, personal relationships, professionalislm, task performance, and learning ability.[36] Pharmacy residents are expected to perform at high levels during their training, yet 43% of pharmacy residents report not getting enough sleep.[22] Obtaining adequate, quality sleep should be an individual priority and be supported by the residency curricula, including an enforceable duty hours policy.

In addition to proper sleep, engaging in physical activity improves quality of life and decreases burnout in post-graduate training.[49] Scheduling the activity or being physically active as a group helps maintain accountability. The most beneficial duration or type of activity to reduce burnout has not been studied, but in a small study of student pharmacists, yoga reduced stress and anxiety.[50]

Work-Life Integration

In recent years, the sociocultural theory of ‘workism’ has overwhelmed the workforce. Workism is the psychological belief that one’s identity and purpose is directly tied to their career and their success in that role. This

ideology potentiates anxiety, disappointment, and burnout.[27] Trainees, including pharmacy residents, have alluded to 'workism' ideology as a professional and personal stressor. The following statements are commonplace and inherently fuel burnout: '…fear of failure and pressure to succeed', '…self-imposed pressure to overachieve and impress others', 'when I am home I am always worried about work', and '…guilt I feel trying to incorporate better lifestyle habits'.[27] Finding meaning outside of work is one of the most beneficial strategies to mitigate burnout and improve well-being and resilience. Residents should be encouraged to find hobbies, participate in professional organizations, spend time with friends and family, and engage in other activities they find pleasurable.

The term work-life balance has been used to describe the importance of adequate time dedicated to both professional and personal life. Inclusion of the word 'balance' is oxymoronic – insinuating that one's time may truly split between work and life. Recently, a more representative term is being used – work-life integration. This terminology reiterates the continuum between work and personal life and supports the idea that well-being and resilience strategies must be implemented in all facets of life.

CONCLUSION

The rising prevalence of burnout has led to negative consequences for pharmacists and other healthcare providers alike. Evidence suggests burnout is impeding the ability of healthcare providers, including trainees, to practice at the best of their ability. Pharmacy residents may be especially prone to the detrimental effects of burnout due to the presence of risk factors including long work hours, younger age, increased stress associated with post-graduate training, and emotional exhaustion. Unfortunately, a paucity of literature exists to identify the most effective strategies to promote pharmacy resident well-being and reduce burnout.

Action must be taken to protect the well-being and resilience of pharmacy residents and prevent detrimental effects of burnout. Residency programs should provide a positive learning/work environment for trainees, offer resources to prevent and reduce burnout, and encourage self-care. Specific interventions that may reduce burnout and improve pharmacy resident well-being and resilience include educating residents on burnout, establishing facilitated discussions, allowing for autonomy and flexibility, providing adequate time away from work, practicing mindfulness, and encouraging sufficient sleep, exercise, and self-care.

Without intervention, patient health outcomes, the success of residency training programs, and individual health are all at risk. Addressing burnout in pharmacy resident training programs will require a paradigm shift to emphasize the development of pharmacists able to cope with the occupational stressors of healthcare practice and supersede the current burnout epidemic.

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Table 1. Summary of Literature Describing Factors Associated with Burnout

Author	Year	Population	N	Design	Major Findings
Kang	2020	Hospital pharmacists	357	Cross-sectional	Factors significantly associated with increased risk for burnout: female gender, working in a primarily distribution role, longer hours worked per week. Factors significantly associated with decreased risk for burnout included awareness of resources and working with learners.
McQuade	2020	Pharmacists	6342	Systematic review	Characteristics associated with increased risk of burnout: moral distress, inadequate administration/teaching time, uncertainty of healthcare reform, difficult colleagues, underappreciated contributions, too many non-clinical duties, female gender, having young children, and being unmarried. Characteristics associated with lower rates of burnout: older age, time/years in practice, mentorship, having a hobby, and work satisfaction.
Zubin	2020	Pharmacists	-	Continuing education	Those at increased risk for burnout include members of historically disadvantaged marginalized groups, individuals with managerial responsibilities, being of middle-age, and female gender. External factors associated with increased risk of burnout: lack of autonomy and control, heavy workload, no or minimal margin for error, interruption-driven environments, disorganization and ambiguity in the environment or work itself, and hours worked.
Lan	2019	Pharmacists	101	Cross-sectional	Workplace burnout was positively correlated with job stress and negatively correlated with intention to stay.
Brigham	2018	Clinicians (interprofessional)	-	Discussion	Model created to account for individual and external factors. System attributes and external factors carry more weight in contributing to burnout: workload, autonomy and control over practice, quality of the work environment, and shared governance.
Durham	2018	Health-system pharmacists	329	Cross-sectional	Survey included 43 pharmacy residents/fellows. Factors significantly associated with burnout included being within the first 15 years of practice and absence or unawareness of available resources.
Williams	2018	Pharmacy residents	749	Time-series	Among respondents, 39.9% reported moderate-to-severe depressive symptoms. The rate of severe depressive symptoms significantly increased from 3.2% to 7.8% within six months.
Zinurova	2018	Pharmacy residents	505	Cross-sectional	Female gender, having children, longer working hours, and desire to change residency program were associated with higher stress. Time pressures, work overload, fear of error, and insufficient sleep were the top stressors. Spending time with family/friends, staying optimistic, and engaging in enjoyable activities were the top coping strategies.
Jones	2017	Hospital pharmacists	974	Cross-sectional	Pharmacists who were burned out were younger, more likely to be single and without children, worked more hours per week, and were on call more days per month. Professional stressors nearly double the risk of burnout and include inadequate administrative and teaching time, difficult pharmacist colleagues, too many non-clinical duties, and underappreciated contributions. Too many hours worked, inadequate research time, inadequate administrative time, and too many nonclinical duties had a moderate to large impact on their careers.
Le	2017	Pharmacy residents	524	Cross-sectional	Residents who worked more than 60 hours had higher stress as well as higher depression, hostility, and dysphoria scores.
Mayberry	2017	Pharmacy residents	50	Cross-sectional	Feeling depressed during residency was reported by more than one-third of residents and 11 reported having suicidal thoughts. Residents reported having poor work-life balance during residency (36%), “rarely” have time to spend with family and friends since starting residency (42%) and feeling overwhelmed from the workload of residency (62%).

El-Ibiary	2017	Pharmacy faculty	758	Cross-sectional	Groups that are at higher risk of emotional exhaustion include women, assistant professors, those with young children, and those who work high number of hours per week. Those with a mentor had lower levels of depersonalization.
Chaukos	2017	Medical residents	68	Cross-sectional	First-year residents with burnout scored higher perceived stress, fatigue, worry, and depression symptoms (scored lower on questionnaires assessing mindfulness and coping ability).
Calgan	2011	Community pharmacists	251	Cross-sectional	Age, marital status, work experience, work contentment, workload, time pressure, stress, and satisfaction with customers were found to be related with community pharmacists' burnout levels.
Maslach	2008	General population	812	Cross-sectional	Seven early predictors of workplace burnout identified: workload, control, reward, community, fairness, values, and job-person incongruity. These predictors are primarily driven by organizational factors and demonstrate the shared responsibility of addressing burnout between the employee and employer.

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