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Exploration of Mistreatment and Burnout Among Resident Physicians: a Cross-Specialty Observational Study

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Abstract

Purpose Resident physician mistreatment and burnout are widespread issues in medical training, but the association between the two remains unclear. This study examines the prevalence and types of mistreatment among resident physicians in core specialties and its association with burnout syndrome as well as feelings of depression/anxiety.

Methods A cross-sectional, survey-based observational study of medical residents was conducted at the University of California, Davis Medical Center in 2014. Current residents (PGY2 or higher) in the internal medicine, family medicine, obstetrics/gynecology, surgery, and pediatrics programs completed anonymous questionnaires addressing topics such as workplace mistreatment, feelings of depression/anxiety, and stress management. Burnout was measured using the Maslach Burnout Inventory.

Results Forty-four out of 105 residents (41.9%) witnessed mistreatment of their co-residents while 26 residents (24.8%) disclosed personal accounts of mistreatment. Seventy-one percent of residents met the criteria for burnout. Residents who had been personally mistreated were almost eight times more likely to report burnout (OR 7.6, 95% CI = 1.7–34.4) and almost four times more likely to report symptoms of anxiety and depression (OR 3.8, 95% CI = 1.6–9.1). Public belittlement or humiliation was the most common type of mistreatment.

Conclusion Encountering mistreatment was associated with higher rates of burnout, as well as depression/anxiety. While it is uncertain if mistreatment in the workplace has a causative impact on burnout syndrome, the findings reveal the need to address work-related environmental factors that may contribute to both resident physician mistreatment and burnout.

Keywords Medical education · Resident physician burnout · Mistreatment · Depression

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Introduction

Resident physician mistreatment is still pervasive in medical education. In fact, studies have shown that 42–93% of medical trainees have reported mistreatment at some stage during their training including instances of harassment, public humiliation, and discrimination at work [1–9]. Despite its prevalence, mistreatment is rarely reported to institutions due to fear of retaliation or belief that nothing will be done [4, 6, 9]. Encounters with mistreatment among resident physicians have been associated with depression, difficulty at work, and overall negativity towards residency [4, 8, 9].

While the consequences of resident mistreatment have been investigated, less is understood about how mistreatment affects the development of burnout syndrome. According to Maslach et al., burnout syndrome is characterized by emotional exhaustion, depersonalization, and low personal accomplishment [10]. Recently, burnout has been reported among

resident physicians at alarming rates. Forty-five to seventy-five percent of residents across a range of specialties have met criteria for burnout using the validated Maslach Burnout Inventory (MBI) [11–17].

Studies have suggested that burnout in medical training may be rooted in issues related to the learning environment. In fact, dissatisfaction with the learning environment, lack of faculty support, and having a cynical resident had the strongest association with burnout in U.S. medical students [18]. Similar results were found with Dutch residents, who were more likely to report burnout if they felt they lacked support and appreciation from supervisors and nurses [19].

Therefore, we sought to explore how perceived mistreatment in the work environment might associate with resident burnout. Our study was designed to investigate the rates of resident burnout at one academic medical center in the United States (U.S.) and its association with mistreatment in the workplace.

Methods

Study Design

A cross-sectional, observational study of residents was conducted at University of California, Davis Medical Center between January 2014 and December 2014.

Participants and Recruitment

All residents (PGY-2 and higher) in the internal medicine, family medicine, obstetrics and gynecology (OB/GYN), general surgery, and pediatric programs were included and invited to participate in our study. Emails were sent to all these residents notifying them of a “resident wellness” questionnaire that would be distributed at the end of mandatory resident didactics for each respective specialty. PGY-1 residents were excluded from the study in order to assess burnout in residents who completed at least one academic year of residency training. There was no compensation for their participation. The study was approved by the UC Davis Institutional Review Board.

Data Collection

Anonymous questionnaires were distributed at the end of mandatory resident didactics for each participating specialty. Residents were informed that their participation was voluntary. A researcher reviewed the consent form, and a copy of the consent form and questionnaire was provided to all residents. After the researcher left the room, the questionnaires were completed in-person, and only residents were allowed in the room during that time. Signatures were not obtained for confidentiality and consent was implied if they filled out the questionnaire. Each resident placed his or her questionnaire

directly into a collection envelope and then a blinded researcher collected the sealed envelope after 30 min.

Questionnaires asked about demographics such as gender, marital status, and children status; training program characteristics; depression and anxiety symptoms; and history and source of personal or witnessed resident mistreatment. Residents had the option to describe specific examples of mistreatment, but were asked to refrain from including details or names that would breach confidentiality. Only the mistreatment of residents during their residency was inquired. Residents were also asked to suggest potentially beneficial resources for managing work-related stress. The complete survey is available in Online Resource 1.

Assessment of Burnout

The 22-item MBI was attached to the end of the questionnaire. It measures the participant’s levels of feeling emotionally overextended, impersonal response towards patient care, and feeling of self-competency at work. The MBI was scored into three subcategories, emotional exhaustion (EE), depersonalizations (DP), and personal accomplishment (PA). Similar to other studies, burnout in physicians was defined as a high score in either EE or DP categories [20]. Per the MBI, we considered a score ≥ 27 in EE or a score ≥ 10 in DP as indicators of professional burnout [10].

Data Analysis

Statistical analysis was performed with IBM SPSS software (version 23) (IBM Corp., Armonk, NY). The underlying assumptions of normality and homoscedasticity of statistical inferential tests were checked prior to statistical analysis. Analysis of variance (ANOVA) was used to examine relationships between Maslach subcategory score means and the demographic groups of resident physicians, such as age, gender, training year, and specialty. The χ^2 test was used to compare the rates of burnout between demographic groups. A p value < 0.05 was considered statistically significant.

Additionally, 2×2 contingency tables were used to calculate odds ratio (OR) estimates with 95% confidence intervals (CI) for dichotomous variables, including residents who reported personal or witnessed mistreatment, those who met burnout criteria, and those with symptoms of anxiety and depression.

Results

Demographics

The total response rate was 63.2% (108/171): 38 out of 41 general surgery residents (92.7%), 14 out of 18 OB/GYN residents (77.8%), 16 out of 25 family medicine residents

(64.0%), 32 out of 62 internal medicine residents (51.6%), and 8 out of 25 pediatric residents (32.0%). Three surveys were excluded for being incomplete and the remaining 105 surveys were included in the analysis. Because of the low response rate in the pediatric group, these 8 surveys were included in the general cohort but were excluded for specialty-specific analyses. Further demographic data of the residents is presented in Table 1.

Burnout

Overall, 75 out of 105 residents (71.4%) reported symptoms consistent with burnout. Although family medicine and OB/GYN residents had higher burnout rates (94.3% and 79.0%, respectively) than internal medicine and surgery residents (62.9% and 61.0%, respectively), the difference between specialties did not reach statistical significance ($p = 0.07$). Rates of resident burnout and associated demographics are summarized in Table 2. No conclusive relationships were found between resident burnout rate and demographic categories.

Emotional exhaustion scores were significantly higher in female residents compared with their male counterparts ($p = 0.002$), but the overall burnout rates were not statistically different between genders ($p = 0.08$).

Notably, burnout rates differed by level of training. Residents in their later training years scored lower in EE ($p = 0.01$), higher in PA ($p = 0.01$), and lower in overall burnout ($p = 0.02$). Interestingly, marital status and having children were not associated with a statistically significant difference in burnout ($p = 0.72$ and $p = 0.31$, respectively). Descriptive statistics related to Maslach scores by demographics are summarized in Table 2.

Mistreatment

Out of 105 residents, 44 (41.9%) reported that they have witnessed mistreatment of their co-residents while 26 residents (24.8%) reported personal experiences of mistreatment. Residents who had been personally mistreated were almost eight times more likely to have burnout (OR 7.6, 95% CI = 1.7–34.4) and almost four times more likely to report symptoms of anxiety and depression (OR 3.8, 95% CI = 1.6–9.1). The vast majority of mistreatment was through public belittlement or humiliation (80%), followed by a few instances of gender or racial mistreatment (3% and 4%, respectively). The remaining types of mistreatment were sexual mistreatment (1%), requesting to perform personal tasks (1%), and others not categorized (11%).

To better understand the challenges residents may face in the workplace, the survey invited respondents to share narratives about of their experience with mistreatment. Select quotations are listed below to demonstrate examples of mistreatment:

Table 1 Demographics and mean Maslach scores in residents

Resident physician variables (N = 105*)	
Age in years, mean (SD)	30.3 (0.49)
Gender, n (%)	
Male	64 (61%)
Female	41 (39%)
Level of training, n (%)	
PGY-2	45 (43%)
PGY-3	36 (34%)
PGY-4	11 (11%)
PGY-5	8 (8%)
PGY-6	4 (4%)
Marital status, n (%)	
Single	46 (44%)
Married	45 (43%)
Divorced	1 (1%)
Paired single	10 (10%)
Children, n (%)	
Yes	17 (16%)
No	87 (83%)
Residency department, n (%)	
Ob/Gyn	14 (13%)
Surgery	36 (34%)
Internal medicine	31 (30%)
Family medicine	16 (15%)
Pediatrics	8 (8%)
Maslach scores, mean (SD)	
Emotional exhaustion	24.8 (11.8)
Depersonalization	11.0 (6.0)
Personal accomplishment	36.1 (7.4)
Met criteria for burnout [#] , n (%)	
Yes	75 (71%)
No	30 (29%)
Response rate by department, n (%)	
All departments (N = 171)	108 (63%)
Ob/Gyn (N = 18)	14 (78%)
Surgery (N = 41)	36 (93%)
Internal medicine (N = 62)	31 (52%)
Family medicine (N = 25)	16 (64%)
Pediatrics (N = 25)	8 (32%)

[#] Burnout is defined as a high score in EE and/or DP categories

*Incomplete responses were excluded from analysis so percentages may not add up to 100%

Senior resident and one nurse used very belittling comments on a daily basis.

Upper level resident... loudly yelling in open ED about how stupid I was for momentarily forgetting my pager number (s/he was threatening me so I froze).

Resident was made to stand up and tell a large group of people that s/he “lacks intellectual curiosity.”

Table 2 Characteristics of residents by mean Maslach scores ($N = 105$)

	Emotional exhaustion (EE), mean (SD)	Depersonalization (DP), mean (SD)	Personal accomplishment (PA), mean (SD)	Burnout, yes [#]
Gender, n (%)				
Male	19.8 (11.6)	9.6 (6.4)	37.5 (7.5)	61.5%
Female	28.3 (10.7)	11.9 (5.6)	35.1 (7.2)	78.0%
p value	0.002*	0.75	0.12	0.08
Level of training, n (%)				
PGY-2	23.6 (10.9)	11.1 (5.7)	35.2 (6.2)	68.2%
PGY-3	29.3 (10.0)	12.0 (5.9)	35.6 (7.3)	87.9%
PGY-4	22.4 (13.5)	9.5 (5.6)	42.3 (6.1)	63.6%
PGY-5	22.0 (14.4)	8.2 (8.4)	8.8 (2.6)	33.3%
PGY-6	8.8 (2.6)	5.3 (4.2)	25.5 (3.5)	33.3%
p value	0.01*	0.25	0.01*	0.02*
Marital status, n (%)				
Single	24.2 (12.2)	10.2 (6.2)	36 (6.4)	69.0%
Married	23.8 (11.1)	10.3 (5.2)	36.8 (7.8)	69.0%
Divorced	31 (12.7)	18 (15.7)	44 (1.4)	100%
Paired single	29.6 (12.5)	14.9 (6.2)	31.1 (9.3)	80.0%
p value	0.46	0.04*	0.08	0.72
Children, n (%)				
Yes	23.9 (9.1)	8.6 (3.8)	37.6 (7.5)	60.0%
No	24.8 (12.2)	11.3 (6.1)	35.7 (7.0)	73.2%
p value	0.79	0.11	0.38	0.31
Residency department, n (%)				
Ob/Gyn	31.1 (9.6)	12.3 (6.5)	38.2 (6.6)	78.6%
Surgery	20.8 (10.9)	10.6 (6.1)	37.9 (6.8)	60.6%
Internal medicine	21.7 (10.2)	8.8 (5.4)	34.3 (6.7)	63.0%
Family medicine	30.7 (13.2)	13.3 (5.5)	34.3 (9.7)	93.8%
Pediatrics	30.75 (11.9)	12.75 (6.2)	35.1 (7.1)	87.5%
p value	0.002*	0.11	0.23	0.07

* p values < 0.05 denotes statistical significance

[#] Burnout is defined as a high score in EE and/or DP subcategories of Maslach Burnout Inventory

Incomplete responses were excluded from analysis so percentages may not add up to 100%

Attending... created hostile learning climate by badgering the resident who was clearly in distress.
M&M - making fun of the resident's "error" and then laughing about it.

residents). Mental health services (31 residents) and childcare resources (24 residents) were also popular, while spousal support services (10 residents) and stress management workshops (7 residents) were less frequently mentioned.

Sources of Mistreatment

While faculty were the most frequent source of resident-witnessed mistreatment (36.5%), nursing staff and even co-residents and fellows were also commonly cited (22.0% and 25.9% respectively). Additionally, patients contributed to 8.2% of these events.

Stress Management

When asked about potential resources that would help manage stress at work, residents were most supportive of expanded gym facilities (52 residents), departmental retreats (48 residents), and confidential resident group debriefings (38

Discussion

Our study found that residents who were personally mistreated during their residency were almost eight times more likely to suffer from burnout. Additionally, these residents were four times more likely to experience symptoms of anxiety and depression.

Research into the consequences of resident mistreatment is sparse. As one of the first studies to examine the association between resident mistreatment and burnout syndrome, our study suggests that the detrimental effects of resident mistreatment may critically impact the mental health and well-being of resident physicians. Supporting this similar premise is a study that found that frequent shaming was linked to increased

depression and burnout in oral and maxillofacial surgery residents [21]. Additionally, mistreatment in medical students was also associated with higher rates of burnout [3].

One theory is that frequent shaming perpetuates a malignant work environment, as well as depersonalization and diminished feelings of personal accomplishment—all direct contributors to burnout syndrome. This is also supported by a study of Belgian resident physicians which showed significant association between the learning environment and burnout [22]. Together, these results suggest that interventions should target the environment to promote more support and appreciation and to remove shaming and deprecation.

Regarding our findings of the association between resident mistreatment and depression, the impact of burnout on depression and suicide has also been previously recognized [23]. Physicians have higher rates of depression and suicide compared with the general population [24–26]. This problem is compounded by the fact that residents may have poor insight into the signs of depression in co-residents and in themselves [27]. In a profession where diagnostic intuition is key, it is disconcerting that physicians may not recognize their own symptoms of emotional distress and those in their peers.

Suggested Solutions

The connection between bullying, work exhaustion, and depression may seem intuitive, but what can be done to mitigate this problem? Leisy et al. recently outlined several approaches to mitigate workplace mistreatment including educating physicians on what qualifies as bullying, establishing consequences, and creating an anonymous reporting system [28]. As programs work to meet the new Accreditation Council for Graduate Medical Education (ACGME) requirements regarding faculty education, emphasis should be placed on recognizing resident mistreatment and its negative consequences.

Even though faculty were the most common source of resident mistreatment, co-residents and nursing staff were also reported to be major contributors. Therefore, effective strategies should be aimed at the departmental level. In our study, about half of the residents supported the idea of departmental retreats, possibly to promote comradery rather than hierarchy. Among our residents, an expanded gym facility was the most popular idea for mitigating stress. Even though some residency programs provide gym access, ease of accessibility is critical for residents on busy work schedules.

Coherently, one study looking at resident wellness and burnout found that restful sleep and exercise were the behaviors most associated with well-being [29]. Another study on physician trainees concluded that quality of life was statistically higher in exercise program participants at one academic training center [30].

Meanwhile, almost all residents with children felt that access to childcare services would decrease their stress. Even

some residents without children agreed that this could assist in stress reduction. However, there currently is a paucity of research looking at the emotional benefits of providing childcare to resident physicians. Thus, further investigations on the benefit of on-site or local childcare on resident morale would be needed.

Comparatively, several studies implemented a single stress management workshop but the effects on burnout scores were mixed [31–33]. However, a one-time intervention may not have the same benefit as a long-term intervention, such as increasing exercise or providing childcare.

Limitations

Our study has several limitations. First, the generalizability of our study findings may not apply to all residency programs since our cohort included residents from a single institution. Individual program culture may differ markedly between institutions and therefore alter the role that resident mistreatment has on subsequent burnout. The actual rate of mistreatment may also be underreported, as residents may be reluctant to report mistreatment even in anonymous surveys, or they may not recognize their experiences as mistreatment. Reasons for this could include fear of retaliation, differences in institutional culture, and potentially differing perceptions of mistreatment in different specialties.

Second, asking questions about mistreatment prior to asking about burnout may skew respondents into a more negative frame of mind and influence their responses and recall. Third, our study may have been underpowered to detect statistically significant differences between burnout rates in different medical specialties and genders. Last, association does not prove causation; therefore, we cannot extrapolate that mistreatment directly contributes to burnout. Possibly, residents more “sensitive” to mistreatment (i.e., more likely to perceive their experiences as mistreatment) may be more susceptible to burnout. However, the pervasiveness of both phenomena among residents suggests that these are systemic issues affecting all residents, regardless of personality.

Conclusion

Reducing resident burnout and mistreatment should be a priority for graduate medical education programs. Attention to resident physician mistreatment is critical because of the lack of data on the potential long-term consequences. Further studies are needed before presuming a causality between perceiving mistreatment and developing burnout. Regardless, there are opportunities for improvement in the residency work environment that residents themselves believe can mitigate the negative effects of mistreatment, including those that build connection in the workplace and promote personal wellness.

As educators, we should prioritize the elimination of a work environment that tolerates public humiliation and bring greater emphasis to promoting the mental health of young physicians in-training.

Compliance with Ethical Standards

Conflict of Interest The authors declare that there is no conflict of interest.

Ethical Approval The study was approved by the UC Davis Institutional Review Board (ID 477048).

Informed Consent Residents were informed that their participation was voluntary and a copy of the consent form was provided to all participants. Signatures were not obtained for confidentiality and consent was implied if they filled out the questionnaire.

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