



Bullying, Discrimination, Sexual Harassment, and Physical Violence: Common and Associated With Burnout in Pediatric Residents

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ABSTRACT

BACKGROUND: Many pediatric residents suffer from burnout. We aimed to describe the prevalence, source, and epidemiology of bullying, discrimination, harassment, and physical violence, and the relationship between these experiences and burnout.

METHODS: We analyzed data from the Spring, 2019 Pediatric Resident Burnout and Resilience Study Consortium's 72-item online survey. Surveys included screening questions about burnout; residents' characteristics and experiences, and attitudes about their learning environment.

RESULTS: Nineteen hundred fifty-six residents (66% of those eligible) from 46 programs participated; most (70%) were women and most (66%) were Caucasian. Overall 45% reported weekly or more frequent burnout symptoms; 33% reported 1 or more of these experiences ("mistreatment") during the past year: 19% reported experiencing bullying; 18% reported discrimination; 5% reported sexual harassment; and 1% reported physical violence. The most frequent sources of mistreatment were clinical staff (60%), patients' families (54%), and faculty

(43%). Women were more likely than men to report mistreatment (36% vs 25%, $P < .01$). Residents who reported experiencing mistreatment were more likely than those who did not to report symptoms of burnout (adjusted odds ratio 1.98; 95% confidence interval, CI 1.62–2.42); they also reported higher stress levels, lower quality of life, and were less likely to agree that their program prioritized collaboration, education, or mentoring ($P < .001$ for all).

CONCLUSIONS: Mistreatment occurs frequently among pediatric residents, especially women; mistreatment is associated with burnout, stress, lower quality of life, and worse attitudes about the learning environment. Future studies could explore whether institutional efforts to improve workplace civility improves resident well-being and attitudes about training.

KEYWORDS: bullying; burnout; discrimination; education; epidemiology; mistreatment; pediatrics; residency; violence

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WHAT'S NEW

Mistreatment was reported by one-third of 1956 participating pediatric residents; discrimination was reported significantly more often by women. Mistreatment was associated with higher stress and burnout levels, and lower satisfaction with the learning environment.

BURNOUT IN PEDIATRIC residents is common and costly.^{1–4} The Pediatric Resident Burnout and Resilience Study Consortium (PRBRSC) was formed in 2015 to understand and reduce burnout. Annual surveys from 2016 to 2018 assessed the epidemiology of burnout among pediatric residents. In all 3 years, the prevalence of positive screens for burnout on the Maslach Burnout Inventory (MBI) was >50%.⁵ Consistent risk factors for

burnout included stress, sleepiness, lower quality of life, being on a high acuity rotation, having made a major medical error, and not having a weekend off in 4 weeks.⁵ Protective factors included mindfulness, self-compassion, empathy, satisfaction with support, and positive attitudes about the residency culture such as support for education and mentoring.^{3,5} Risk factors identified in other samples, such as gender, race, marital status, and program size, were not consistently associated with burnout in this study.⁵

During this period, public awareness about sexual harassment and discrimination grew with the #MeToo movement. Research in other health professionals including surgical residents found that mistreatment (including harassment, bullying, discrimination, and physical violence) is common and associated with burnout.^{6–13} We

were unable to find any national studies examining the prevalence of mistreatment among US pediatric residents, or the relationship to burnout, stress, or attitudes toward their residency program.

Therefore, we had 3 aims for the 2019 PRBRSC survey 1) Describe the prevalence of bullying, discrimination, sexual harassment, and physical violence; 2) Assess the epidemiology of these experiences; and 3) Analyze the relationship between them and burnout. We hypothesized that all 4 types of mistreatment would be reported by at least some residents, that it would be more common among women and minorities, and that mistreatment would be associated with an increased risk of burnout.

METHODS

The PRBRSC membership as well as the overall design and use of standard instruments in the de-identified annual survey through the Association of Pediatric Program Directors' Longitudinal Educational Assessment Research Network have been described previously.^{3,14} This study includes responses only from 2019 because that is the only year in which the survey asked residents about their experiences regarding bullying, discrimination, sexual harassment, or physical violence.

Participants were eligible if they were residents in PRBRSC programs. There were no exclusion criteria.

The 141-item survey used in the 2016–2018 surveys was modified for 2019 to reduce the total number of items while adding exploratory questions about experiences of having been bullied, discriminated against, sexually harassed, or experiencing physical violence in the workplace in the past 12 months; the terms “mistreatment” or “incivility” were not used in the survey itself, and with the team's focus on reducing the length of the survey to reduce participant burden, no definitions or examples were provided. The final 72-item 2019 survey included demographic characteristics, widely used scales measuring attributes associated with burnout (described below), and questions about perceptions of their learning environment. As with previous PRBRSC surveys, it was distributed between April and June.

We used 2 questions to screen for *burnout*, “I feel burned out from my work” and “I have become more callous to other people since I took this job.” Screens were scored as positive if either item was endorsed as occurring at least weekly. We showed previously that this 2-item screen had good sensitivity (85%–87%) and specificity (84%–85%) compared with the full MBI in pediatric residents.¹⁴ *Stress* was measured with the 10-item Perceived Stress Scale; scores among health professionals typically range from 14 to 18.^{15–18} *Mindfulness* was assessed with the 10-item Cognitive and Affective Mindfulness Scale, Revised; the average item score in normative populations is 2.8 ± 0.5 .^{19,20} *Self-compassion* was measured using Neff's 12-item measure; average item scores in normative populations range from 2.7 to 3.2.²¹ *Empathy* was measured using the 7-item Davis empathy scales.²² *Quality of life* was measured using a 10-point numeric rating scale,

with 10 being the highest possible and 0 being the worst possible quality of life.

Descriptive statistics were used to describe participants' demographic characteristics, burnout, mistreatment, and residency experiences. Chi-square, *t* tests, and ANOVA were used to determine whether characteristics were associated with bullying, discrimination, harassment, or violence (collectively referred to as “mistreatment”). To account for clustering of learners in programs, mixed-effects linear and logistic regression models were fitted to predict factors associated with mistreatment in a cross-sectional analysis. We used multiple imputations by chained equations to impute missing continuous variable predictors from other continuous variable predictors present. In all analyses, our a priori level of significance was $P < .05$, and 2-sided tests were performed. Statistical analysis was performed with R 3.4 using the lme4 package for mixed modeling and the mice package for multiple imputations.

PRBRSC member institutions obtained approval from their individual institutional review boards.

RESULTS

In 2019, 1956 (66%) of 2958 eligible residents participated. Overall, 45% of residents had a positive screen for burnout and 33% reported having experienced any of the 4 types of “mistreatment” experiences asked about on the survey: bullying (19%), discrimination (18%), sexual harassment (5.4%), and/or physical violence (1.3%) (Table 1). Among the 46 participating programs, the prevalence of mistreatment varied from 14% to 58% (excluding one program that had only one respondent) with a median of 32% of residents per program reporting mistreatment. The most common sources of mistreatment were clinical staff (60%), family members of patients (54%), and faculty (43%) (Table 2). Among those who reported mistreatment, few (13%) reported that it had occurred only once; 70% reported that they had experienced mistreatment at least 3 times in the past year.

Table 1 shows the epidemiology of mistreatment. The number of residents reporting physical violence was small (1%), and there were no significant differences between those who reported physical violence and those who did not in terms of any demographic or personal characteristic (Data not shown). Mistreatment was reported more often by women than men, most notably for discrimination. Minority residents and International Medical Graduates were more likely than Caucasian residents and US graduates to report having experienced discrimination. Those who reported mistreatment had significantly higher scores for stress, lower scores for mindfulness, and lower scores for quality of life; they also reported working more hours per week. There were no significant differences in mistreatment by age, marital status, parenthood status, or scores on resilience or empathy scales (data not shown); there were also no significant differences in mistreatment by categorical versus combined residencies, year of

Table 1. Characteristics and Experiences of Bullying, Discrimination, and Sexual Harassment of 1956 Pediatric Residents From 46 Programs in 2019

Characteristic	Bullying			Discrimination			Sexual Harassment			ANY "MISTREATMENT"		
	Yes	No	P Value	Yes	No	P Value	Yes	No	P Value	Yes	No	P Value
Overall, N (%)	371 (19%)	1585 (81%)	—	358 (18%)	1598 (82%)	—	106 (5%)	1849 (95%)	—	644 (33%)	1311 (67%)	—
<i>Gender, N (%)</i>			0.16			<.001			0.06			<.001
Female, 1356 (70%)	274 (20%)	1091 (80%)		292 (21%)	1073 (79%)		85 (6%)	1279 (94%)		494 (36%)	870 (64%)	
Male, 580 (30%)	95 (16%)	485 (84%)		66 (11%)	514 (89%)		21 (4%)	559 (96%)		147 (25%)	433 (75%)	
<i>Race, N (%)</i>			0.37			<.001			<.001			0.19
African American, 81 (4%)	11 (14%)	70 (86%)		26 (32%)	55 (68%)		3 (4%)	78 (96%)		32 (40%)	49 (60%)	
Asian, 314 (16%)	56 (18%)	258 (16%)		68 (22%)	246 (78%)		8 (3%)	306 (97%)		100 (32%)	214 (68%)	
Caucasian, 1283 (66%)	249 (19%)	1034 (81%)		195 (15%)	1088 (85%)		85 (7%)	1198 (93%)		406 (32%)	877 (68%)	
Hispanic/Latino, 75 (4%)	14 (19%)	61 (81%)		18 (24%)	57 (76%)		0 (0%)	75 (100%)		28 (37%)	47 (63%)	
Other/Mixed/prefer not to answer, 202 (10%)	40 (20%)	162 (80%)		50 (25%)	152 (75%)		10 (5%)	192 (95%)		78 (39%)	124 (61%)	
<i>International Medical Graduate (IMG), N%</i>			0.14			.003			0.02			0.96
No, 1654 (87%)	319 (19%)	1335 (81%)		285 (17%)	1369 (83%)		98 (6%)	1555 (94%)		540 (33%)	1113 (67%)	
Yes, 239 (13%)	36 (15%)	203 (85%)		61 (26%)	178 (74%)		5 (2%)	234 (98%)		79 (33%)	160 (67%)	
<i>Stress (PSS), Mean (SD)</i>	30.7 ± 2.7	29.5 ± 2.9	<.001	30.5 ± 2.8	29.6 ± 2.9	<.001	30.4 ± 2.6	29.7 ± 2.9	.02	30.5 ± 2.7	29.4 ± 2.9	<.001
<i>Mindfulness, Mean (SD)</i>	25.7 ± 4.5	27.2 ± 4.6	<.001	26.2 ± 4.8	27.1 ± 4.5	<.001	26.8 ± 4.5	27 ± 4.6	0.71	26.2 ± 4.7	27.3 ± 4.5	<.001
<i>Self-compassion, Mean (SD)</i>	3.3 ± 0.3	3.2 ± 0.3	0.02	3.3 ± 0.3	3.2 ± 0.3	0.16	3.2 ± 0.3	3.2 ± 0.3	0.9	3.3 ± 0.3	3.2 ± 0.3	.005
<i>Quality of life, Mean (±SD)</i>	6.0 ± 1.9	6.8 ± 1.5	<.001	6.2 ± 1.8	6.7 ± 1.6	<.001	6.7 ± 1.6	6.4 ± 1.8	0.06	6.3 ± 1.8	6.8 ± 1.5	<.001
<i>Hours worked per week, Mean (SD)</i>	65.5 (27)	61.6 (22)	.003	64.4 (18.6)	61.9 (24)	.07	62.2 (16)	62.3 (23.5)	0.96	64.1 (22.7)	61.4 (23.3)	0.02
<i>Burnout</i>												
Emotional exhaustion, Mean (±SD)	4.6 ± 1.6	3.8 ± 1.6	<.001	4.3 ± 1.6	3.8 ± 1.6	<.001	4.4 ± 1.6	3.9 ± 1.6	.003	4.4 ± 1.6	3.7 ± 1.5	<.001
Depersonalization, Mean (±SD)	4.3 ± 1.8	3.4 ± 1.7	<.001	3.8 ± 1.8	3.5 ± 1.7	<.001	4.0 ± 1.8	3.5 ± 1.7	.006	4.0 ± 1.8	3.4 ± 1.7	<.001
Yes, either positive, N (%)	215 (28%)	562 (72%)	<.001	170 (22%)	607 (78%)	.001	55 (7%)	722 (93%)	.01	327 (42%)	450 (58%)	<.001
No, both negative, N (%)	156 (13%)	1021 (87%)	<.001	188 (16%)	989 (84%)	<.001	51 (4%)	1125 (96%)	<.05	317 (27%)	859 (73%)	<.001

Data on Physical Violence omitted because it was not statistically significantly associated with any variable.

Any "Mistreatment" was defined as experiencing any Bullying, Discrimination, Sexual Harassment, or Physical Violence in the previous 12 months.

Note: Respondents could report more than one type of mistreatment.

Table 2. Frequency and Source of Mistreatment (Bullying, Discrimination, Sexual Harassment, or Physical Violence) in the Past 12 Months

Number of Times Someone Has Behaved This Way Toward You	N (%) 644 (100%) Any Mistreatment
1	83 (13%)
2	113 (18%)
3-5	274 (43%)
6-9	95 (15%)
10 or more	74 (12%)
Source of the behavior	
Clinical Staff (nursing, therapy)	382 (60%)
Patient's family member	343 (54%)
Faculty	274 (43%)
Fellow resident/colleague	181 (28%)
Patient	168 (26%)
Administrative staff	59 (9%)
Student or other trainee	19 (3%)
Other	17 (3%)

training, residency size, or current rotation (data not shown). Average scores on the 2 burnout screening items were significantly higher for residents who reported having been mistreated; the percent who had positive screens for burnout was significantly higher for those who reported any mistreatment (51%) than those who had not (35%, $P < .001$).

Table 3 shows the relationship between mistreatment and residents' perceptions of their training programs. Compared with residents who had not been mistreated, residents who reported mistreatment were significantly less likely to agree that they worked in a collaborative rather than competitive learning environment ($P < .001$ for each comparison) and less likely to agree that resident education and mentoring were high priorities in their programs ($P < .001$ for both).

In generalized linear mixed model regression analyses, we assessed the relationship between mistreatment and burnout while controlling for gender; burnout remained significantly related to bullying ($P < .001$), discrimination ($P < .001$), sexual harassment ($P < .01$), and any mistreatment ($P < .0001$). The adjusted odds ratio for burnout associated with any mistreatment was 1.98 (95% confidence interval [CI] 1.62, 2.42); when examining frequency of mistreatment (0, 1, 2, 3–5, 6–9, or 10 or more times), each higher “dose” of mistreatment was associated with an adjusted odds ratio of 3.01 (95% CI, 2.06, 4.40) of burnout. When controlling for gender, mindfulness scores, residency program, and work hours, mistreatment increased the odds of burnout by 1.7 (95% CI, 1.4, 2.1; $P < .001$); higher mindfulness scores decreased the odds of burnout by 0.47 per standard deviation (approximately 4.5 points on the CAMS-R, 95% CI 0.42, 0.53; $P < .001$); and for each 10 hours/week worked, the odds of burnout increased by 1.2 (95% CI, 1.1, 1.3; $P < .001$). Running this model for “dose” of mistreatment, there was a significant effect of dose with the odds of burnout moving from one dose category up to the next of 2.5 (95% CI, 1.6–3.7; $P < .001$).

Table 3. Pediatric Residents' Attitudes About Residency Program

	Bullying		P Value	Discrimination		P Value	Sexual Harassment		P Value	ANY MISTREATMENT		P Value
	Yes	No		Yes	No		Yes	No		Yes	No	
<i>I work in a collaborative rather than competitive environment.</i>												
Strongly agree or agree, N (%)	286 (77%)	1460 (92%)	<.001	287 (80%)	1459 (91%)	<.001	91 (86%)	1654 (90%)	.3	526 (82%)	1219 (93%)	<.001
Neutral or disagree, N (%)	85 (23%)	125 (8%)		71 (20%)	139 (9%)		15 (14%)	195 (11%)		118 (18%)	92 (7%)	
<i>Resident education is a high priority in my program.</i>												
Strongly agree or Agree, N (%)	205 (55%)	1241 (78%)	<.001	216 (60%)	1230 (77%)	<.001	70 (66%)	1375 (74%)	0.07	387 (60%)	1058 (81%)	<.001
Neutral or disagree, N (%)	166 (45%)	344 (22%)		142 (40%)	368 (23%)		36 (34%)	474 (26%)		257 (40%)	253 (19%)	
<i>Resident career mentoring is a high priority in my program.</i>												
Strongly agree or Agree, N (%)	134 (36%)	922 (58%)	<.001	146 (41%)	910 (57%)	<.001	50 (47%)	1006 (54%)	0.2	269 (42%)	787 (60%)	<.001
Neutral or disagree, N (%)	237 (64%)	663 (42%)		212 (59%)	688 (43%)		56 (53%)	843 (46%)		375 (58%)	524 (40%)	

DISCUSSION

In this large national study of pediatric residents 33% reported having experienced bullying (19%), discrimination (18%), sexual harassment (5%), or physical violence (1%); women and racial minorities more frequently reported discrimination than men. Among those who had been mistreated, it was often recurrent. The most common sources of mistreatment were clinical staff, family members of patients, and faculty. Mistreatment was significantly associated with a greater risk of burnout, higher stress levels, and lower quality of life. Mistreatment remained significantly associated with a greater risk of burnout even after controlling for gender, work hours, and mindfulness and when analyzed as a dichotomous variable (mistreated or not) and by “dose” of mistreatment (number of times in the past year). Furthermore, mistreatment, particularly bullying and discrimination, were significantly associated with worse opinions about the training environment; residents who reported having been bullied or discriminated against were less likely to agree that their training program was collaborative, prioritized resident education, or prioritized resident mentoring.

It is also notable that those who reported mistreatment also reported working more hours per week; future research might explore the reasons for this, for example, do those who experience bullying or discrimination work harder to avoid future mistreatment, or are those who work more hours less efficient and skillful than those who work fewer hours and therefore more likely to be judged as deficient and therefore at higher risk of being reprimanded or targeted by others? Or do programs or rotations that require more work hours have different educational cultures than programs or rotations that demand fewer work hours? Even a resident who is slower or less skillful than peers deserves to be treated respectfully; programs that foster a respectful growth mindset may promote a sense of safety, collaborative learning, and mentorship that leads to improved performance over the long term. Comparing the impact of different teaching/learning cultures or environments and strategies for improving performance could complement the growing research on resident burnout.

Overall, the prevalence of burnout in this 2019 sample (45%) was slightly lower than in our 2016 to 2018 samples (>50%).⁵ This may be because the 2019 survey used 2 screening questions rather than the full MBI. We previously demonstrated that compared with the full MBI, the 2 screening questions resulted in slightly lower burnout prevalence (53%) compared with the full MBI (54%–56%).¹⁴ Thus, the 2019 sample may underestimate the prevalence of burnout and reduce the statistical power of finding an association between mistreatment and burnout. Conversely, it is possible that the increased attention to burnout in recent years in the residency programs participating in the PRB-RSC has led to activities that have decreased burnout rates; we anticipate that future studies by the PRB-RSC will examine the impact of programmatic interventions aimed at promoting well-being and resilience on burnout rates over time.

The prevalence of mistreatment reported by pediatric residents in this sample (33%) was lower than the prevalence of mistreatment recently reported in a national survey of surgery residents (50%), a survey of surgeons (49%), and a meta-analysis of harassment and discrimination among medical trainees (59%).^{10,13,23} These differences may be due to actual differences in pediatric residents’ experiences, differences in how questions were asked, cultural differences in behavior in other countries or professions, or other factors, for example, whereas our survey asked about discrimination (without specifying what type), the surgical residents were asked about several types of discrimination (based on gender, race, pregnancy, or childcare). Also, the surgery survey asked about verbal or emotional abuse (prevalence of 30%) rather than the term, “bullying” used in this survey (19%). On the other hand, even when the same term, “sexual harassment” was used, rates were twice as high in the surgical residents (10%) than in the pediatric residents in this survey (5%). At the risk of lengthening surveys and increasing the reading burden on participants, future studies may benefit from using more specific terminology and providing examples to promote more complete recall so that educators can better understand and address the various sources and types of mistreatment or incivility that occur in training programs.

The sources of mistreatment in our sample of pediatric residents also differed from those reported in the surgical survey, for example, among pediatric residents, the most common source of mistreatment was clinical staff, whereas among the surgery residents, the most common source of mistreatment was the patient or patient’s family.¹⁰ While pediatric residents may be unlikely to suffer from sexual harassment from young patients, they may be at increased risk of experiencing physical violence from toddlers or developmentally delayed youth who engage in hitting, biting, or kicking as part of a temper tantrum secondary to frustration/fear and lack of verbal skills to express their feelings. However, the frequency of faculty as the third most common source of mistreatment in both surgery and pediatric residents is concerning. In a meta-analysis of mistreatment in medical training, consultants were the most commonly cited source of harassment and discrimination, followed by patients or patients’ families.¹³ Identifying the primary sources of mistreatment could assist programs in designing interventions to reduce mistreatment.

Both surgery and pediatric resident surveys found that mistreatment was a significant risk factor for burnout, even after controlling for other factors. In addition, the surgery survey found that mistreatment was a risk factor for suicidality, which was not a topic of inquiry on this pediatric survey.¹⁰ The pediatric survey found that mistreatment was associated with less favorable attitudes about the residency’s emphasis on teaching and mentoring, whereas these topics were not explored in the surgery survey. Different specialties can learn from each other’s experiences to improve future surveys and their learning environments.

LIMITATIONS

This survey had several strengths such as its large size, national scope, 66% response rate, and use of validated instruments. Limitations include use of screening questions instead of the full MBI, the lack of objective measures of mistreatment, and lack of inquiry into depression or suicidal thinking. Despite the good response rate, the potential for nonresponse bias remains as does the potential for recall bias in asking about experiences over the past 12 months. We divided the source of mistreatment into broad categories such as “faculty” and “patient’s family members;” future studies focusing more deeply on the source of mistreatment may wish to be more specific, for example, “consultants” or “specialists,” “primary care pediatricians,” “fathers,” “mothers,” “siblings,” “grandparents,” “foster parents,” and “other relatives.” Furthermore, this was a cross-sectional survey which cannot establish causation; it is possible that residents who burned out are more likely to label experiences as mistreatment than residents who are not burned out. Expectations about respectful, or at minimum, acceptable behavior toward physicians-in-training may differ over time, in different countries, and between different medical specialties. Future studies would benefit from more specific questions that provide examples of what is meant by “discrimination,” “harassment,” “bullying,” etc, as well as longitudinal designs to better support causal inferences. Surveys may need to be complemented by qualitative research and focus groups to better understand the causes of incivility and mistreatment in residency training programs; additional research is needed to determine the most effective strategies to address these problems and create a learning environment where physicians-in-training can flourish and skillfully manage emotionally laden situations.

CONCLUSIONS

Mistreatment, especially bullying and discrimination, is commonly experienced by pediatric residents and is strongly associated with burnout and more negative attitudes about the learning environment. Interventions aimed at reducing burnout and improving resident well-being need to consider addressing mistreatment in the learning environment in addition to mindfulness, sleepiness, errors, and work hours in order to ensure pediatricians can thrive and provide optimal patient care.

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