Using Photovoice to Reflect on Resident Burnout and Resiliency

Research Highlights
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Purpose: Physician burnout is a substantial problem that begins during medical education. We used a photovoice, a participatory research method, to explore resident burnout and resilience. Consistent with photovoice methodology, the project had both descriptive and transformative purposes: 1) to describe the ways that family medicine residents experience burnout and resiliency; 2) to facilitate residents personal reflection about burnout and resilience, both individually and with their peers; and 3) to share rich information about resident burnout and resilience with faculty and local graduate medical education leaders.

Methods: Photovoice is a participatory research method in which facilitators create opportunities for participants to create, reflect on, and share information using photographs. Participants were family medicine residents in a single university-affiliated residency program in the Midwestern United States. Each resident submitted two photographs, one describing burnout and the other describing resiliency, and a brief statement describing each image. In order to avoid ethical concerns of consent, residents were asked not to include identifying information or identifiable human beings in the photographs. Each resident then participated in a group discussion in which all the photographs were examined and discussed. Three group sessions were held, each with 6-10 residents; two groups were all senior residents and one group was all interns. Sessions were audiorecorded. The photographs, written descriptions, notes taken during the sessions, and recordings were qualitatively analyzed using a hermeneutic phenomenology approach. Visual images were also analyzed using content analysis. The study was approved by the Sparrow Health System Institutional Review Board and all residents gave written consent to participation.

Results: Residents actively engaged in reflecting on burnout and resilience through the photovoice process. Photographs included a mix of both symbolic and descriptive imagery. Residents described multiple components of burnout: being unable to meet ones basic needs, such as cleanliness and food preparation; physical exhaustion; feeling overwhelmed by multiple competing tasks; feeling emotionally depleted; feeling isolated from social connections outside of work; and neglecting self-care, such as exercise. Interns focused more on physical exhaustion, and senior residents focused more on managing competing tasks. Residents found resilience through the comforts of being at home, such as a blanket or favorite mug; rituals of self-care; hobbies and other outside activities; taking time to fully separate from work, through vacations or smaller breaks; and nurturing relationships with friends, family, and pets. Through the discussion, residents shared personal information, discussed challenging issues, and provided verbal support for one another. Selected de-identified images, accompanying text, and analyses have been shared with the family medicine residency faculty and will be shared with the larger hospital community in a gallery exhibit and reception.

Discussion: By participating in the research analysis through group discussion, we believe residents better understood their own challenges, reflected on their own resiliency tools, and shared opportunities to cope with the stresses of residency. The faculty researchers and the faculty group also gained understanding of our own residents everyday lived experience of burnout, generating empathy. We anticipate that the larger hospital community will have a similar experience, and that the images will spur further conversation about how to promote resident wellness.

Significance: Photographic images, particularly when viewed as a group, provide rich insights into
the lived experience of burnout and resilience for family medicine residents at one community hospital, which may be generalizable to other specialties and contexts. Photovoice is a research methodology that can be adapted to other medical education settings and contexts, generating rich discussion and promoting reflection among learners, particularly about difficult issues.
The impact of humiliation on resident well-being as influenced by organizational support and psychological safety

Research Highlights
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Purpose: The hidden curriculum can have devastating consequences on the professional development of physicians.1 The culture of academic medicine must be addressed as a potential source of disrespect and mistreatment towards others.1,2 While there is national monitoring of medical student mistreatment3, there is little research on the impact of mistreatment on resident well-being.4,5 Our study aimed to (1) understand how humiliation affects well-being through psychological safety - the perception that one can speak up freely (mediation) and (2) determine what level of perceived organizational support influences the impact of humiliation on psychological safety and well-being (moderation).

Methods: Between May-June 2018, our institution administered an IRB-approved survey (paper-based and electronic) to its residents across 19 residencies to assess facets of the clinical learning environment, wellness, and mistreatment. The current study focused on a subset of the data that assessed the frequency of public humiliation, the clinical learning environment (i.e., perceived organizational support, psychological safety) and well-being (i.e., positive indicators of well-being). Measures operationalizing each construct were selected based on demonstrated validity and application in prior research. Our moderated mediation model, also known as path analysis, was analyzed through SPSS PROCESS Macro Model 7.

Results: 299 out of 428 (70% response rate) residents completed the survey. Incidents of public humiliation significantly predicted lower psychological safety ($\beta = -0.49$, standard error [SE] = 0.12, 95% confidence interval [CI] [-0.72,-0.26]; $p < 0.001$), which subsequently impacted well-being ($\beta = 0.58$, SE = 0.05, 95%CI[0.47,0.68]; $p < 0.001$). This mediation relationship was moderated by perceived organizational support so that low levels of perceived support (16th percentile) had a stronger negative impact on psychological safety and well-being due to humiliation (indirect effect: -0.08; SE 0.02, 95%CI[-0.13,-0.04]; Index of moderated mediation=0.6, SE=.02, 95%CI[0.004,.10]). We found support that there is a conditional indirect effect of the independent variable (humiliation) on our outcome variable (well-being) via the mediator variable (psychological safety) which differs depending on levels of the moderator variable (perceived organizational support).

Discussion: Our findings suggest public humiliation has an indirect relationship with well-being through psychological safety, the belief that a resident can speak up without negative consequence. This relationship is especially affected in environments where residents perceive little support from their departments. Therefore, interventions to stem public humiliation should especially target environments where residents perceive a lack of support. Furthermore, the behavior of public humiliation has the ability to undermine education, and potentially patient care.

Significance: As the national conversation on mistreatment in the clinical learning environment grows, leaders within graduate medical education should understand that the prevalence of public humiliation stifles learning processes through poor psychological safety. Adequate patient care requires an environment where frontline workers, like residents, feel empowered to speak up by suggesting ideas, alerting others to potential errors, and voicing concerns. Future work requires monitoring mistreatment towards residents at a national-level, and understanding how power dynamics between the relationship of faculty and trainees impacts incidents of humiliation.
Expectation-reality mismatch for clerkship students

Research Highlights
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Purpose: Medical students experience high levels of stress during their transition to the clinical environment, leading to psychiatric morbidity and burnout (13). Expectation-reality discrepancy (ERD) in the work or educational environment has been established as the key component of burnout (4). However, while many studies have focused on direct stressors (longer hours, increased grade competition, learning environment hostility, etc.), few have examined how students expectations alter these stressors effects. We explore how pre-clerkship expectations, particularly regarding grading, study habits, and the learning environment, differ from clerkship realities, and how these differences impact student satisfaction and stress. We present an analysis of University of Michigan medical students (UMMS) ERDs in the clinical environment and their impact on other predictors of student satisfaction.

Methods: In 2017, UMMS students were surveyed via Qualtrics(TM) immediately before entering the clerkships regarding grading expectations, study habits, and expected clerkship environment. In 2018, halfway through the clerkships, they were asked the same questions rephrased to address current impressions. Students also rated their perceived ERDs for each domain. All items were five-point Likert-type. Rank-sum tests, linear models, and ANOVA were used to evaluate the ERDs and their effects on satisfaction, support, and stress.

Results: There were sharp decreases in overall satisfaction, grading satisfaction, and feelings of support between preclinical (n=84, response rate=49%) and clinical (n=108, response rate=63%) responses, with increases in competition and stress. Students reported significant (p<0.0001) grading, study habit, and learning environment ERDs. Grading requirements were felt to be less clear, and feedback less specific, than students expected. Test scores were also perceived as more important compared to clinical evaluations than expected. Students reported less free time than expected. ERD independently predicted overall clerkship satisfaction (p<0.0001), as well as student-reported grading satisfaction (p<0.05), competition levels (p<0.001), stress levels (p<0.001), and overall medical education satisfaction (p<0.05).

Discussion: Burnout arises from chronic mismatches between people and their work setting" (4). Maslach identifies six domains of the work environment where expectation-reality mismatch can occur: workload, control, reward, community, fairness, and values. Our study shows that clinical students are indeed subjected to ERDs related to all six domains: workload (less free time than expected), reward (unclear grading and less specific feedback), community, fairness, and values (learning environment). We also demonstrated that those ERDs are independent predictors of satisfaction and stress in the clinical environment. Findings from this study emphasize that educators should not only work to mitigate stressors, but also to correctly align students expectations of the clerkships. This allows for a two-front approach by educators to improve student satisfaction and wellbeing. For example, efforts could be made to directly increase the clarity of grading requirements for students (the direct stressor front) while at the same time peer mentorship could be implemented to correctly align student expectations regarding grading (the ERD front).

Significance: Work within the burnout literature has shown that the most important component of burnout is not stressors themselves, but expectation-reality discrepancy related to those stressors (4). The concept of expectation-reality mismatch as an important contributor to medical student stress has previously been proposed (5), but our study provides empiric evidence of the existence of ERDs related to the transition to the clinical learning environment and their effect on student satisfaction and stress levels. This, in turn, gives educators the opportunity to improve student
wellbeing by correctly setting expectations while interventions to directly mitigate stressors are implemented. Future directions include evaluating the impact of expectation-setting interventions, such as peer-mentoring.
Cognitive Flexibility, Social Support, Resilience and Grit: What Aggravates/Mitigates Burnout in Residents?

Research Highlights
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Purpose: Previous research shows International residents experience lower levels of Burnout compared to their U.S. born peers, 1,2 however research has yet to explore why this difference exists. The purpose of this study was to explore this difference by first assessing Burnout in our U.S. and International resident population and then exploring other factors that are known to be related to this construct, namely Cognitive Flexibility, Social Support, Resilience, and Grit. Our goal was to investigate potential reasons for this Burnout differences in U.S.-born and International residents.

Methods: Participants included 229/527 residents from various departments at the Medical College of Georgia. Data were collected from an anonymous survey assessing the aforementioned constructs and analyzed for descriptive statistics and covariance. Burnout was assessed through a single item from the Maslach Inventory on a 5 point likert scale. To supplement the data, interviews were conducted with 14 residents, which explored potential differences in the two resident groups. Interviews were transcribed and analyzed using latent content analysis.

Results: As expected, Cognitive Flexibility, Social Support, Resilience, and Grit were inversely related to Burnout. The mean Burnout score among residents was 3.6 out of 5. In our sample, International residents reported greater Burnout levels compared to U.S. born residents. Differences in Social Support and Resiliency were not statistically significant. However, International residents showed a larger decrease in Burnout for each additional unit of Cognitive Flexibility (0.09 vs 0.04 for each point increase); U.S. residents demonstrated decreased levels of Burnout (-0.39 vs +0.24 per point) with increasing levels of Grit. Interviews revealed that International residents discussed the importance of accepting the stress inherent in their residency, whereas U.S. residents try to manage stress with each adverse event.

Discussion: This exploratory study suggests that International and U.S. residents experiences with Burnout differ in an important way. International residents seem to mitigate Burnout by engaging with the practice of maintaining Cognitive Flexibility, specifically by constantly comparing their home/nascent context and where they currently work. It is unclear if they score higher on Cognitive Flexibility because they come from another cultural context or they have developed it as a coping mechanism. Additionally, in our study, U.S. residents reported less Burnout while scoring higher on measures of Grit. Supplemental interviews indicated that international residents do not feel they can exercise any more Grit than they do currently, suggesting that unlike U.S. born residents, International residents may not be able to turn-on their grittiness when things get difficult. This difference may be a result of the fact that U.S.-born residents ability to stay in the U.S. is not tied to their residency, whereas International residents are in a constant state of exercising Grit because their ability to stay in the U.S. is tied to their residency.

Significance: When studying Burnout at an individual level (as opposed to institutional levels), researchers must attend to the cultural context that surround residents. Further, International residents experiences should be studied separately, unless there is sound reasons to include both groups.