

The Impact of Race on Mental Health Burden and Burnout in Medical School and Residency: A Literature Review

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Each year, thousands of students enter medical school or residency, aiming to excel as skilled physicians while advancing patient care and the healthcare system. This literature review analyzes articles pertaining to how Underrepresented in Medicine (URM) students may face heightened mental health barriers to achieving these aspirations. Current literature shows conflicting findings on how race correlates with depressive symptoms. Some studies have found that a disparity exists between depressive symptom severity scores of minorities—Black, Hispanic, and Native American—and White and Asian individuals, especially among Latino males and females (Hahm, 2015). Conversely, other studies claim that the rates of mental health disorders are not higher among minorities, and the rates of depression are similar across groups (McGuire et al., 2008). This literature review aims to answer if this uncertainty changes when observing the onset and prevalence of depression rates among minorities in the context of medical students and residents. This review article highlights the need for institutional support systems that foster inclusivity and promote the well-being of underrepresented minority students. In addition, more public education efforts on racial biases, discrimination, and racism in the medical realm need to be developed, especially during medical school and residency.

Keywords

Medical School • Residency • Mental Health Disparities • Depression • Race

Introduction

Depression is a mood disorder that causes persistent feelings of sadness and loss of interest in everyday interactions and activities. Common symptoms include feelings of emptiness, worthlessness,

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and/or hopelessness; tiredness and lack of energy; and sleep disturbances generally caused by anxiety (National Institute of Mental Health, n.d.). Depression severity is assessed in clinical settings via the Patient Health Questionnaire-9 (PHQ-9), which is a brief, self-administered, and validated depression screening. The questionnaire includes nine questions, with each one being scored on a scale from 0 to 3, where 0 indicates “not at all” and 3 indicates “nearly every day.” The scoring system ranges from zero to twenty-seven—scores of 5–9 are classified as mild depression; 10–14 as moderate depression; 15–19 as moderately severe depression; greater than 20 as severe depression. The PHQ-9 does not include questions about identity; it primarily focuses on the severity of depressive symptoms experienced over the past two weeks, without accounting for contextual or demographic factors (Kroenke et al., 2001).

It is known that pre-medical students, medical students, and residents face greater intensity and prevalence of depressive symptoms compared to individuals pursuing non-medical careers. These symptoms are most frequently attributed to a fiercely competitive academic environment, difficult coursework, and rigorous clinical work and extracurricular activities that demand large time commitments (Fang et al., 2010). Previous research has demonstrated that female students have a higher prevalence of depression, while male students are less likely to seek help (Ibrahim, 2013). Yet, few studies have addressed how the disparities between minority vs non-minority medical and internship students affect student well-being and depressive symptom onset. Despite the growing recognition of mental health challenges in medical education, there remains a lack of focus on how racial and ethnic disparities contribute to the onset and severity of depressive symptoms among students and how this may affect their overall well-being and academic performance. This literature review aims to present findings from the current literature on how experiences of discrimination, mistreatment, and microaggressions contribute to differences in depressive symptoms by race during medical school and internship.

Methods

This paper reviews scientific articles and other literature reviews pertaining to race and mood disorders, particularly in medical school and residency. Twenty-four publications written between 2001–2024 were utilized in this literature review. The articles were identified utilizing PubMed using search terms including “medical school” or “residency” and “mistreatment”, “depression”, “discrimination” and “race”. After reviewing the abstracts and results, each article was categorized based on the racial and ethnic groups primarily studied. The scope of this review is to investigate the prevalence of depression among medical students and residents, with a focus on the impact of race on burnout, discrimination, access to resources, and mental health.

Results

Black, Hispanic, and Native American (URM)

Multiple research studies have demonstrated that a differential burden of mistreatment, feelings of burnout/imposter syndrome, and access to academic and mental health resources exists between non-URM —White and Asian— and URM —Black, Native American, and Hispanic— individuals. A prospective study that followed 7,409 URM and non-URM residents found that 16.6% reported

experiencing racial discrimination at some point during their residency. Racial discrimination has been associated with increased rates of burnout, depression, and suicidal ideation (Hu et al., 2020). Research on medical school mistreatment, which encompasses a wide range of abusive behaviors including discrimination and harassment, has also demonstrated differences in prevalence by race/ethnicity. A study utilizing 27504 unique medical student surveys exemplified a greater proportion of URM and multiracial students experiencing mistreatment compared to White students, which directly correlates with a decreased physical and mental health, worsening grades, and lower academic motivation and persistence (Hill, 2020). A third study with 6956 residents from 301 programs also showed that Black and Hispanic surgery residents were 21 and 2 times more likely to report discrimination than their White peers, respectively. Those residents who experienced racial discrimination were twice more likely to report suicidality (Yuce et al., 2020). Regardless of the methodologies employed, the central finding that higher rates of discrimination occur towards minorities is prevalent in each study listed above. This suggests that systemic racism and discrimination are embedded within medical education atmospheres and disproportionately affects the mental health, academic performance, and career progression of URM individuals.

Around 10% of medical school matriculants and 5.5% of active MD residents are reported to be Black by the Association of American Medical Colleges in 2023. In addition to this percentage being drastically lower than the percentage of White individuals in medical school and residency, this disparity exemplifies deeper systemic inequalities faced by Black students. A report observing 733 Black medical students found that about half of Black students reported being watched more closely than their classmates, and 66% reported feeling the need to work twice as hard as others to get the same treatment or evaluation. This has led to a high prevalence of anxiety and depression symptoms among Black medical students, and increased discrimination is strongly associated with mental health challenges (Milam et al., 2022). Another study with 19 Black residents found that discrimination, differing expectations from professors and mentors, and social isolation was prominent in the clinical setting (Liebschutz et al., 2006). The participant's interviews demonstrated that they collectively perceived Black individuals to be punished more harshly for the same transgressions and expected to perform at lower levels than their White peers. These complex social and emotional challenges during post-graduate training led to increased feelings of self-doubt, depression, and burnout (Liebschutz et al., 2006). Participants interviewed emphasized the much-desired implementation of creating new supportive networks and raising awareness on these issues. A third survey study on the racism experienced by Black orthopedic surgeons during residency found that of the 310 participants, 34% (106 of 310) perceived a lot of residency workplace discrimination, 61% (190 of 310) received racially explicit statements during residency training, and racial microaggressions experienced in residency were very commonly reported (Brooks et al., 2022). These three studies can explain why Black residents often report slightly higher PHQ-9 scores compared to White residents (Huang, 2006). The underrepresentation of Black individuals in the medical field and the persistent systemic inequalities they face contribute significantly to their mental health challenges and overall well-being.

Those who are Hispanic, Latino or of Spanish origin accounted for 12.7% of total medical school matriculants and 8.3% of active MD residents in 2022–2023 (Association of American Medical Colleges, 2023). While these percentages have increased in recent years, they still reflect the significant underrepresentation of Hispanic/Latino individuals in medical education. One study looking at 230 Hispanic/Latina medical students found that 54.5% reported experiencing negative ethnicity-based interactions, 76.2% reported depression and 92.6% reported anxiety during

training, and 87.4% reported experiencing burnout (Southall, 2024). These rates are significantly higher compared to their White peers who have not experienced race-based discrimination; these barriers make it inevitably more difficult to prosper and succeed in medical school, demonstrating how systemic discrimination contributes to the emotional and psychological toll experienced by underrepresented minority students. Another study observing Hispanic/Latino neurosurgery residents found that race discrimination disadvantages experienced by foreign residents and other types of harassment inflicted by fellow residents or professors are factors that have contributed to an increase in burnout and suicidal ideation in neurosurgery residents (De la Cerda-Vargas et al., 2022). With increased instances of racism and discrimination, the prevalence of depression among Hispanic/Latino medical students and residents continues to rise. A third report observing 529 non-majority physicians found that those who identified as Hispanic/Latino were significantly more likely to agree/strongly agree that they were under greater scrutiny than their colleagues, that patients refused their care, and that it was difficult to find a mentor (Nunez-Smith et al., 2009). This lack of support, respect, and guidance has led to heightened feelings of isolation and depression among Hispanic and Latino medical professionals. These facets directly lead to mental health challenges, including burnout and suicidal ideation, which highlight the critical need for systemic change within medical education.

Around 1% of medical school matriculants and 0.6% of MD residents are reported to be Native American by the Association of American Medical Colleges in 2023 and 2021, respectively. Native American medical students were the only racial group that did not experience an absolute increase in medical school enrollment between 1997 and 2017 (Lopez-Carmen et al., 2023). With Indigenous people comprising 2.9% of the U.S. population, there is a clear need for transformative efforts to increase the representation of Native American physicians in the medical workforce (Victor et al., 2023). Because collecting accurate, meaningful data on a population size so small is difficult, many literary papers group Native Americans into the collective URM category instead of a singular category. One study utilizing 27504 student surveys found that URM students seem to bear a disproportionate burden of the mistreatment reported in medical schools (Hill, 2020). This is crucial because prior literature has demonstrated an association between mistreatment and depression, burnout, and a desire to leave medical school (Cook et al., 2014). Another literary review article found that URM residents are less likely to feel that they fit into their training programs, feel less comfortable asking for help, and experience microaggressions in the work environment (Khubchandani et al., 2022). It has been previously stated in this review that discrimination has been associated with burnout, suicidal thoughts, and depression (Hu et al., 2019). Thus, it is reasonable that URM experience stronger depressive symptoms compared to their White peers. These findings exemplify the need for institutional changes to address the unique challenges Native American and other URM students face.

White & Asian (Non-URM)

This literature review examines racial disparities in depression, burnout, and access to resources by comparing URM populations and Asian individuals to White individuals. For example, Hill's paper reveals that URM and multiracial students report experiencing two or more distinct forms of mistreatment at higher rates than White students (Hill, 2020). Given that White individuals are the majority in medical school and residency, they are less likely to face race-based discrimination. These disparities further emphasize the impact of racial identity on the mental health and

well-being of medical students and interns, underscoring the need for comprehensive strategies to address racial identity inequities.

Although Asian individuals are not underrepresented in medicine, they still encounter significant discrimination. While the Asian population makes up a large percentage of matriculants in medical school –23%– and residency –21.6%–, it is important to recognize that they still face significant prejudice and bias in both educational and clinical settings (Association of American Medical Colleges, 2021). Research indicates that Asian American medical students often perceive their medical school environment more negatively than their White peers due to discriminatory experiences (Yang et al., 2023). Studies have shown that Asian medical students and professionals often encounter stereotypes, microaggressions, and exclusion, which contribute to stronger feelings of marginalization, isolation, and depression compared to their White classmates. Another study on 213 Asian medical students found that nearly 70% of survey respondents reported experiencing at least one racial microaggression during their medical training. Experiences with microaggressions led to feelings of frustration and burnout and had a negative impact on mental health (Zhang et al., 2024). A third study looking at 266 surgical residents found that 27% of Asian residents reported high levels of perceived discrimination and were 1.4 times as likely to have high Everyday Discrimination Scale scores than White residents (Khubchandani et al., 2022). Even though the Asian population is well-represented in medical school, microaggressions, stereotypes, and exclusion contribute to heightened feelings of depression.

Discussion

Promoting diversity and well-being in medical training is essential for fostering an equitable, inclusive, and accessible healthcare system. It has been demonstrated that greater exposure to a negative medical school diversity climate was associated with an increase in depressive symptoms among students of all races and ethnic groups (Hardeman et al., 2016). Thus, it is exemplified that greater URM representation in medical programs is linked to reduced depression risks for both majority and minority students (Elharake, 2020). Having a more accessible, inclusive team has also been shown to enhance productivity, creativity, and critical analysis (Filut, 2020). In addition to advantages provided to the students, increasing diversity would also lead to better care for racial minority patients. Increasing the racial and ethnic diversity of the physician workforce has been shown to improve quality of communication, patient satisfaction, and patient outcomes (Fiaz et al., 2023). By prioritizing inclusivity, medical institutions can create a more equitable healthcare system that benefits both practitioners and patients alike.

Throughout this review, the varying treatment experienced by URM medical students and residents highlights a non-inclusive learning environment, which may significantly impact their well-being and serve as a barrier to academic success. Prior literature has shown an association between exposure to mistreatment and discrimination and student reports of decreased physical and mental health, worsening grades, and lower academic motivation and persistence (Hill, 2020). These findings underscore the need for medical institutional reforms. These reforms include the development of supportive networks for URM students as well as efforts to raise awareness about the importance of fostering a more equitable and inclusive atmosphere for minority students in the medical field. (Milam et al., 2022). Initiatives such as increasing mental health resources are vital for establishing resilience, success, and better healthcare outcomes.

Limitations to this review include a gap in research conducted on specific minority groups including Native Americans. It was not possible to find research on the discrimination solely Native American students experienced in medical school or internship; thus, this paper ultimately was required to look for studies and other reviews that had Native Americans included in the URM population. Another limitation to this paper was many of the studies' cohort sizes and representations. Some of the studies utilized in this paper have extremely small sample sizes, and thus the data collected cannot be generalized to the entire population of people who share the same identity.

Conclusion

To answer the research question, this literature review consisting of articles and studies regarding the role of race on depressive symptoms, burnout, and access to resources in medical school and medical internship demonstrates that because of higher discrimination, URM students face more prevalent feelings of isolation, loneliness, burnout, and imposter syndrome than non-URM students. Non-URM students also have larger communities of people similar to themselves in medical school and residency, providing them with greater access to support networks, mentorship, and a sense of belonging. This affords them a better opportunity to undergo the challenges of medical training with direct guidance and support, reducing the chance of experiencing severe depressive symptoms and burnout. Future research should track PHQ-9 scores by race throughout medical training to observe racial disparities in depression over time.

Notes

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