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# Depression Screening Scores in Osteopathic Medical Students

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## INTRODUCTION

Depression is a prevailing risk in medical students who have been shown to have an increased risk of depression relative to a similar age cohort in the general population.[1] Furthermore, past research into depression rates of medical students have identified alarming trends, with one study finding 14.3% of surveyed met the threshold for moderate to severe depression according to the PHQ-9 scale.[2,3] The demographic burden of depression is not equally weighted as higher depression rates have been found in women, students from rural areas, and underrepresented ethnicities.[4,5,6] Depression in students not only places psychological stress on top of the stress of rigorous medical training, but can put students at risk for decreased academic performances.[7] With the COVID-19 pandemic, general population depression rates have significantly increased, with the estimated global rates moving from 6.2-11.5% to 13.5-24.3%.[8] The purpose of this study was to identify current trends of depression rates in medical students and unique demographic factors associated.

## METHODS

Scores for Patient Health Questionnaire 9 (PHQ-9) and difficulty with activities of daily living were collected via Qualtrics during the fall semester for first through fourth year medical school students in 2022. The survey also included demographic information including: age, relationship status, presence of dependents at home, race/ethnicity, Native American and/or tribal affiliation, residency status, cohort year, pell grant eligibility, gender identity, sex assigned at birth, sexual orientation, transgender identification, history of depression diagnosis, and treatment history for depression. Data was entered into SPSS for analysis. PHQ-9 scores were distinguished by total score with categories of minimal depression, mild depression, moderate depression, moderately severe depression, and severe depression. Statistical analysis included standard deviations, means, and frequencies. A Kruskal-Wallis analysis was conducted for total score by demographic variables. A one-way ANOVA was conducted for total score by year.

## RESULTS

**Key Findings**

Among the 153 surveyed participants, 50.7% of participants scored a PHQ-9 survey indicating mild, moderate, or moderately-severe depression, representing a 94.3% increase from the 26.1% that reported a previous depression diagnosis. Statistical significance ($p<0.05$) in total PHQ-9 score was found for sex assigned at birth, gender identity, and experiencing difficulties with activities of daily living.

Table 1: Stratification of student PHQ-9 scores

| | Frequency | Percent |
|---|---|---|
| minimal depression | 74 | 48.4 |
| mild depression | 49 | 32 |
| moderate depression | 21 | 13.7 |
| moderately severe depression | 9 | 5.9 |
| Total | 153 | 100 |

Table 2: Scoring Interpretation of PHQ-9 for statistically significant variables

| | N | Mean PHQ-9 | Standard Deviation | P Value |
|---|---|---|---|---|
| ADL | | | | 0.00* |
| Not Difficul at All | 51 | 2.39 | 2.12 | |
| Somewhat Difficult | 85 | 7.32 | 4.49 | |
| Very Difficult | 11 | 12.45 | 3.75 | |
| Extremely Difficult | 1 | 12 | 0 | |
| Sex Assigned at Birth | | | | 0.008* |
| Male | 57 | 4.72 | 4.81 | |
| Female | 96 | 6.51 | 4.72 | |
| Gender Identity | | | | 0.042* |
| Male | 58 | 4.79 | 4.8 | |
| Female | 94 | 6.49 | 4.76 | |
| Non-binary/Third Gender | 1 | 6 | 0 | |

## CONCLUSION

Approximately fifty percent of medical students surveyed displayed mild to moderately severe depression symptoms. The prevalence of depression in medical students points to potential problems in the future physician workforce dealing with the stress of medicine.[9] Mental health resources and other changes could decrease the depressive symptoms in osteopathic medical students. This could provide strategies in the short term to mediate the stresses of medical school and in the long run for improved mental wellbeing that may assist practicing physicians.

Recognizing which students are at an increased risk of depression can potentially help cater services to prevent depressive symptoms. Improving student mental health may remove the interference of depression with student performance.[10] To date, no such study has been conducted investigating depression rates in Osteopathic medical students. Osteopathic education emphasizes the connection between mind and body, and these principles can be applied to current medical students to increase mental wellness and mitigate the risk of depression within the medical community.[11] Continued emphasis on medical student mental health throughout the education process is needed as our data suggests many students are facing mental health challenges.[12]

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