

Change in Stress Levels and Concentration in Osteopathy Students During Simulated Clinical Encounters: A Pilot Study.

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Background: Simulation is commonly used in healthcare education, however in the osteopathic field it is a relatively new approach. Although there are several studies that show how clinical simulation is a good learning tool, it also represents a source of stress for students. To date there are no studies in the osteopathic field aimed at measuring the stress levels of students during a simulated clinical encounter.

Target: The aim of this study is to verify the variation in stress and concentration levels in the 4th and 5th year students of osteopathy during a clinical simulation through the measurement of brain alpha- and gamma waves and through self-evaluation stress scales.

Materials: After obtaining approval from the research department of the Istituto Superiore di Osteopatia in Milan, students attending the 4th and 5th year of osteopathy were recruited for the study.

Each subject was asked to fill in the Self-rating Scale of Anxiety (SAS) of Zung (1917) to assess the level of state anxiety and to indicate on a VAS scale the self-perceived stress both just before and immediately after the simulation. Concentration and stress levels were also assessed throughout the duration of the simulation and subsequent debriefing using EEG data extracted from the MUSE™ headband. The MUSE™ software development kit enabled the quantification of gamma and alpha waves during each activity.

An analysis of variance was used for concentration and stress levels between students of 4th and 5th year.

Results: A total of 30 participants, 15 4th year students and 15 5th year students, were recruited for the study and stratified by their osteopathic year of membership.

Stress was found to be lower in the 5th year students compared to the 4th year students during the relational simulation ($P < 0,05$).

Despite a general trend showing that alpha brain wave indicated lower stress levels in the fifth-year students compared to the fourth-year students there was no statistical differences between the two groups.

However, statistically significant differences emerged both from the intergroup analysis and from each intra-group analyzes in the evaluation with the VAS scale.

Concentration levels increased as well in both groups but did not report statistically intergroup differences ($P > 0.05$).

Conclusion: The self-reported stress brain VAS scale detect statistically lower stress levels in 5th year students during clinical simulation with the consequent debriefing compared to 4th year students.

It's highlighted that the greater exposure to clinical cases can be a training factor in relation to stress management during simulated clinical encounter.

References

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