

Article appraisal: effects of yoga and meditation on medical student's stress lev...



Critical Appraisal based on the article: “ Medical Students’ Stress Levels and Sense of Well Being after Six Weeks of Yoga and Meditation” by Prasad, Varrey and Sisti.

Prasad, Varry and Sisti undertook a study to determine if implementing yoga in first to third year medical students’ curriculum, for a period of six weeks, would ease students’ distress and enhance their wellbeing, preliminary to undertaking their medical exams. Yoga was chosen as an intervention as it is believed to develop and train the mind and body in both a spiritual and physical manner, and to also assist individuals to be more aware of their nature. The sample comprised of 34 volunteered medical students. The students were recruited by email preliminary to starting a six-week biological science course for first and second-year students and clinical rotation for third year students. Upon acknowledgement of the email, students were requested to complete an intake and physical activity form. From the 34 volunteers, only 27 participants result composed the study as the other seven students had not met the criteria due to previous continual engagement with yoga in the past year. Amongst the 27 medical students that had participated, 14 participants were men and 13 participants were women. Their ages ranged from 24 to 32 years-old and the median age was precisely 28 years-old. The participants attended one-hour yoga classes that included; 40 minutes of posture, 10 minutes of breathing exercises and 10 minutes of meditation. After the continuous yoga classes for six weeks, students’ stress levels and state of mind was measured through self-reported surveys, the stress scale and the self-assessment survey. The self-reported survey showed a reduction in stress in medical students after the

intervention. Correspondingly, the stress scale also revealed results that had reduced stress in students. Before the intervention stress levels scores were indicated at 18.44, demonstrating high levels of stress in medical students. Post yoga classes, the stress scale score decreased to 14.52, indicating an improvement in medical student's stress levels by 3.92. In a similar manner, the self-assessment survey demonstrated results where students found themselves in healthy mindsets and enhancement in tranquillity, comprehension, patience, self-satisfaction and self-confidence. In conclusion, the results displayed that yoga and meditation is effectual in lessening stress levels and assisting in increasing prosperity and welfare in medical students.

Despite the results attained, the reliability and validity of the analysis and the results could be interrogated as the study manifests potential threats, prejudice and limitations. Consequently, diminishing the credibility, consistency and accuracy of the study and the results obtained. The results were acquired through two surveys and a stress level scale. However, other analytical techniques could have been used to obtain the data. After the six-week intervention, one on one interviews could have taken place. This would have ensured the collection of highly-personalized data. Furthermore, focus groups could have been undertaken fortnightly rather than a survey at the end of the intervention, as this could have ensured more accurate and precise information on participants feelings and stress levels. In a similar manner, as data collectors, Prasad, Varrey and Sisti could have discreetly observed the participants changes in behaviour before and after the classes. Despite that, the study has moderate face validity since it measured yoga's

influence on stress levels in various forms although other methods could have been used to measure stress levels.

The dependent and independent variables comprised of the major elements of the study, hence increasing the validity of the experiment. But on the other hand, even though Prasad, Varrey and Sisti correlated the data with other similar experiments, the correlation was not generalisable and applicable due to ethnic distinctions and disparity in the programs.

Furthermore, the limitations of the study decreased the accuracy of the results as no solid evidence was portrayed. In the conclusion, it stated yoga “could be a feasible option” rather than a requirement. Hence, demonstrating poor construct validity. Moreover, the reliability of the study is poor as a test-retest was not done. A test-retest ensures a correlation exists between the set of scores obtained. It further ensures that there is no change in the construct being measured, and that the same results can be achieved by the same observations. Hence, increasing the consistency of the results. But, the inadequacy of re-tests and comparisons of test-retest correlation between the results bespeaks the absence of consistency and reliability of the data acquired.

Although a relationship between stress levels and yoga has been drawn, the experiment has low internal validity. This is evident as the study has no random allocation of participants to groups or levels, no random allocation to independent variables, no repeated measures were conducted, and a major factor is the influence of external events affecting participant’s results.

Students surmised that yoga had a “favourable effect”. Students described the classes as “relaxing, mind clearing and being more grounded”. But on <https://assignbuster.com/article-appraisal-effects-of-yoga-and-meditation-on-medical-students-stress-levels/>

the contrary, the students revealed that they have had previous encountering's with yoga and other forms of meditation. Some students also reported engagement with other physical activities up to 5 hours per week besides the yoga classes and other participants advised that they were taking medications. Thus, further proposing a threat to the internal validity and the accuracy of the results. Additionally, yoga instructors could have inadvertently affected the outcome by non-consciously behaving in different ways towards the participants.

The study's external validity was moderate as other studies with similar materials and methods has been undertaken. Furthermore, the yoga classes took place in a medical student lounge on campus displaying a good mirror image to the real-world experiences. However, this study could be improved as no multiple groups existed, only 27 participants results contributed to the outcome and the participants volunteered to join the experiment, thus, being more motivated than others. This could affect the results significantly as the participants already have a motive. Therefore, proposing a potential prejudice in regard to preconceived ideas.

The impact of having a low internal validity and a moderate external validity, affects the study in a significant manner as it decreases the reliability, accuracy, consistency and credibility of the study. Additionally, the study may not be generalisable and applicable to the real world, further decreasing the study's merit. To increase and improve the credibility of the study, a high internal and external validity is required. To increase the internal validity, test-retest must be undertaken as this ensures accurate results.

Furthermore, random allocation of participants to the experimental groups
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and the controlled groups is required as this decreases errors in the results, prevent biasness and ensure difference in measurement is only due to the independent variable. A major element that influences internal validity is external influence. To achieve a high internal validity, all other influences must be minimised or eliminated if possible, in order to achieve precise results and diminish threats. To strengthen and increase external validity, the relationship of the variables should be generalisable to different measures. Larger number of participants must be used in the study and the participants must be randomly selected, so biasness does not prevail. Moreover, it ensures that the independent variable is the only variable that is being tested. Hence, increasing precision, validity and reliability of the results.

In conclusion, the study by Prasad, Varrey and Sist to an extent demonstrates a moderate appraisal of stress levels in medical students. Nevertheless, measurements used to obtain the data could have been revised in furtherance of increasing the reliability and validity of the results. Moreover, a test-retest of the study could have significantly increased the accuracy of the data. The internal validity of the study could have also been improved by a few modifications, which include; repeating the study with similar material and methods, use of random allocation of participants to groups and minimising external influence. In a similar manner, the external validity could also have been more generalisable to the real world by increasing the sample size and having multiple test groups in the study.

References:

- Paul, C. (n. d.). Reliability and Validity of Measurement. Retrieved from <https://opentextbc.ca/researchmethods/chapter/reliability-and-validity-of-measurement/>