

The Effect of Tahajjud on Students' Stress Mediated By Personality Types

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Abstract

New Medical students experience massive adaptation from school to university level. Some of them experience adaptation difficulties, even stress. Religious activities are believed to provide serenity, stress reduction, and confidence enhancement, but the magnitude needs to be clarified. It is also postulated that different personality types (phlegmatic, sanguine, choleric, and melancholic) have different stress-coping mechanisms. We aim to investigate the impact of tahajjud on stress levels and how personality type reacts to these changes. Seventy-four first-year medical students evaluated their stress levels with Kessler's Psychological Distress Scale (KPDS) for the student before and after three months of continuous daily exposure with tahajjud and dhikr. The students were also stratified based on the personality types based on the Hippocrates-Galenus classification. We found that tahajjud and dhikr significantly reduce student's stress levels (Wilcoxon test $P < 0.001$). Melancholy types take huge advantages from these religious activities regarding stress reduction compared to others (ANOVA, $p < 0.018$). Regular Tahajjud and dhikr could be recommended programs in Muslim institutions.

Keywords: Dhikr; Personality type; Stress level; Tahajjud

INTRODUCTION

Stress is a term that refers to the dynamic interplay between an individual and their surrounding¹. This connection can influence cognitive, emotional, and behavioural functioning^{1,2}. When a new student enters a new environment, the individual's problem will arise because of differences in the physical and social environment. Every student will try to adjust; adjustment failure can cause psychological disruption and even fall into stressful conditions. Medical students also had stress due to their educational experiences (study load, lack of information, examination, teaching style) and personal/social experiences (peers, teachers)^{1,3,4}.

Religious approaches have been long recognized as a long-term solution for stress management in clinical settings⁵⁻¹⁰. Some studies even demonstrated in real-time coping stress via direct visualization of brain activity^{11,12}. Several publications also highlight the importance of the

religious approach to the education field^{9,10,13}. However, the magnitude is limited when confounding with the personality type. In the past, Hippocrates and Galen differentiated the personalities into four categories: choleric, melancholic, sanguine, and phlegmatic¹⁴. Some studies also confirmed that this subset personality type could significantly alter the outcomes of intervention¹⁵⁻¹⁷. Given the substantial evidence linking religious practice to stress management, we expected religious activities (Tahajjud and Dhikr) to reduce students' stress levels significantly, and our findings are robust across gender and even personality types. This study aimed to re-validate the impact of religious activity on stress management.

MATERIALS AND METHOD

We involve all 74 new medical students in Universitas Muhammadiyah Purwokerto, Indonesia, who stayed in the faculty dormitory to join tahajjud

and dhikr every early morning for 90 days (September until December 2020). The design of this study is a one-group experimental design. Research teams on location performed the monitoring (adhere to health protocol during a pandemic) supervised by the principal investigator via Zoom meeting. Personality type was assessed by 40 multiple choices for strength and weakness panels from a Hippocrates-genus-modified questionnaire^{18, 19}. To evaluate the stress level, we utilized ten multiple-choice choices with a 5-scale Likert from the Kessler Psychological distress scale at the beginning of the study and after 90 days of the intervention²⁰. We test the validity and reliability of both questionnaires. We got the Cronbach alpha coefficient for Kessler stress and Hippocrates personality as 0.78 and .71, respectively.

We describe subject characteristics with total numbers and percentages. A non-parametric paired Wilcoxon test performed bivariate analysis to evaluate the stress level trend before and after intervention. We consider gender and personality type for adjustment; therefore, we performed a Two-way mixed 1-between (personality type) and 1-within (day one and day 90) ANOVA. We use the pairwise Wilcoxon test with Bonferroni p-value adjustment for subset analysis. All analyses are based on the frequentism method with a significant alpha <.05 and 95% confidence interval performed using R-software²¹.

The study was reviewed and approved by the Ethics Committee of the Universitas Muhammadiyah Purwokerto (KEPKK/FK/XII/007/2020) and followed the Declaration of Helsinki's ethical standards. Signed consent was obtained from all participants, and responses were anonymous.

RESULTS

We reported the more female proportion in our research and subgroup sanguine personality type (Table 1).

Characteristics	Total	Percentage
Gender		
Male	31	41.2%
Female	43	58.1%
Personality		
Choleric	8	10.8%
Phlegmatic	23	31.1%
Sanguine	32	43.2%
Melancholy	11	14.9%

We found significant changes in stress levels before and after the tahajjud and dhikr intervention

(Wilcoxon P<.05) (figure 1 left). The reducing trend was also visible in individual participants' mapping. The result from the main-effect analysis indicates no difference in stress reduction between genders. Male and female participants have similar effects from tahajjud. (Figure 1 right)

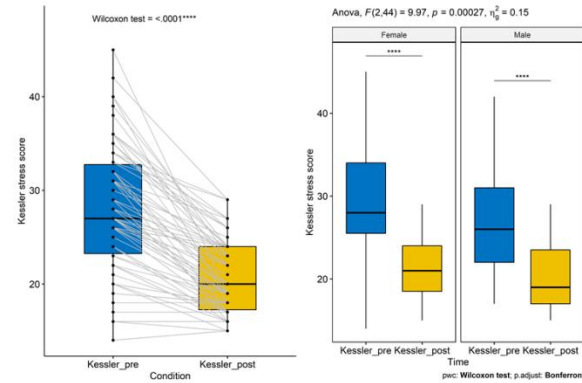


Figure 1
Pairwise comparison of the stress level before and after the series of religious activities (left) and stratified with gender (right) by two-way mixed (1-between and one within) Anova design.

Following gender, we found that even personality types shared the typical pattern during initial research even after 90 days (Two-way mixed ANOVA P>.05) (figure 2 left). Interestingly, stratified by personality types, we can see the significant stress downtrend level before and after the religious activity (Pairwise Wilcoxon with Bonferroni adjustment P <.05). (Figure 2 right)

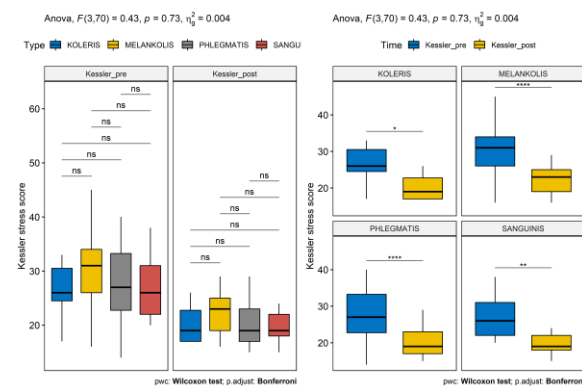


Figure 2
The between-group personality analysis (left) and within-group personality analysis (right)

DISCUSSION

According to the findings, Tahajjud and Dhikr's application decreased stress levels among first-year medical students. Our findings support the previous research by Karimi et al. study; religious intervention improved the quality of life of breast cancer patients.²² Additionally, Taj Bakhsh et al. found that a religious intervention based on the Richards and Bergin model decreased patients' stress, anxiety, and depression levels²³. Furthermore, a study conducted in Yogyakarta, Indonesia, in an older population demonstrates that religious intervention improves QOL (quality of life) and reduces stress - and depression²⁴. In a study by Nick Farjam, 62 patients were randomly allocated to one of two groups: experimental or control. The effect of intervention with prayer and Namaz on the QOL status of schizophrenia patients was assessed. The intervention includes prayer, Namaz, and Quranic stories for the experimental group. According to the data, implementing this intervention resulted in an enhancement in patients' quality of life²⁵. Sharif Nia et al.'s study examined the influence of prayer on the spiritual health of hemodialysis patients. Prayer implementation boosted the group's spiritual well-being, consistent with the intervention's outcomes²⁶. Religious intervention improves patients' quality of life and psychological condition by improving their disease-coping mechanisms.

Masoumi et al. compared the effect of the Quran's melody and instrumental music on hemodialysis patients. The experimental group listened to the Qur'an for one month. The mean spiritual health of the patients improved significantly at the end of the experimental²⁷, consistent with the pre-intervention study results. Religion appears to play a role in enhancing patients' quality of life, as demonstrated in the study by Saffari et al²⁸.

We hypothesized that the impact of tahajjud is robust across personality types; this contradicted previous papers^{16,17}, but it is not impossible because someone could have more than 1 type of personality or even borderline personality, as highlighted by Trull et al. and channel et al.^{29,30}. Regarding gender, most studies showed that females are prone to stress³¹⁻³⁴. Our result differs from that of male students, even though has slightly lower stress levels than females but it is not significant. One explanation could be from Butler et al. in 2017, highlighting the role of hormone imbalance in healthy adult males, making it equal in our student population settings³⁵.

One of this study's strengths is that it utilized a non-pharmacological intervention without adverse patient effects. Additionally, this study was congruent with the patient's culture and Religion, which may have played a vital role in this study due to the patients' culture. The serious limitation of this study is the time frame of just three months. This kind of longitudinal study is supposed to be performed longer to reveal the actual value of the impact of an intervention. At least our finding showed that the initial broad picture of the religious implications needs to be followed up in the subsequent research. Second, we collect gender information for adjustment factors; completed socio-demographic factors must be considered for analytical robustness.

CONCLUSION

Religious activities affect health, and prayer is a significant religious intervention. Given that the Tahajjud and Dhikr ultimately reduce the stress level, utilizing a non-pharmacological intervention to lay the framework for improving the elements affecting these medical students' health was essential.

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CONFLICT OF INTEREST

All authors declare no conflicts of interest in this study.

AUTHOR CONTRIBUTIONS

MO and SW conceived and designed this study. MO, AA, SW, and MA collected the data and performed the analysis. MA, AA, OS, S, and TK wrote the manuscript. All authors have been involved in revising the manuscript, and all authors have read and approved the final manuscript.

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