The Effect of Personality Traits and Burnout Levels in Trinity School of Medicine Students

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ABSTRACT

Overwhelming negative stress can lead to burnout in medical students, which can cause a decrease in academic performance. Several factors can play a role, such as personality, work/school environment, and home life. Personal burnout levels of Trinity School of Medicine (TSOM) students were investigated in relation to personality traits and counterparts. A self-administered survey regarding personal burnout levels was assessed via the Copenhagen Burnout Inventory (CBI), and the personality traits and counterparts were assessed via the personality test from 16Personalities.com. The survey was sent to 207 TSOM students in terms one through five. Pre-med students were not assessed. Seventy-four responses were obtained, but five were excluded as the survey was not filled out appropriately, yielding a 33.33% response rate. Chi-squared revealed a significant result regarding the turbulent counterpart and in marital status. Turbulent individuals were more likely to be in burnout levels 3 and 4. Those that were in a relationship or married were less likely to be in burnout levels 3 and 4. The former suggests that those with the turbulent counterpart are more likely to develop burnout and should take preventative measures. The latter suggests that those with social support are less likely to develop burnout.

Keywords: burnout, burnout levels, medical students, personality traits

ORIGINAL RESEARCH ARTICLE

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CITATION OF THE ARTICLE

I. INTRODUCTION

Medical school is a challenging task for many students, and the task of completing medical school becomes even harder when students are faced with burnout (Chunming et al., 2017). Burnout is described as a state of complete exhaustion usually due to overwhelming volumes of negative stress (Weber & Jaekel-Reinhard, 2000). Positive stress allows the individual to gain motivation and increase performance (Li et al., 2014). Negative stress can cause anxiety, physical and mental health problems, and decrease in performance, whether that be in the workplace or in an academic setting (Mills et al., 2008). Investigation of student burnout in previous studies have shown that personality can be a factor in whether a student develops burnout. These studies have used Maslach Burnout Inventory (MBI) with the Five Factor Model (Bakker et al., 2006) and MBI with Cattell's 16PF questionnaire (Cebria et al., 2001), but none have focused on the CBI with 16 Personalities.

Personality can be a factor in whether a student develops burnout (Hudek-Knezević et al., 2011); however, the mystery is whether specific aspects of personality, such as thinking vs. feeling, are predictors of developing burnout. One study assessed the relationship between personality and burnout of architectural students. These researchers found that students who showed the personality of open to experience and extraverted went through the four years of architectural school without having high levels of emotional exhaustion (Celik & Oral, 2013). However, the students that demonstrated the personality trait of neuroticism tended to have higher levels

of emotional exhaustion (Celik & Oral, 2013). The emotional exhaustion was outlined by the MBI. Another study assessed the relationship between personality and burnout levels via MBI among primary care physicians. It found that the doctors surveyed who met the burnout criteria also showed personality aspects of low stability, tension, and anxiety (Cebria et al., 2001).

The environment in medical school can be stressful for its students, and personality may play an important role in whether a student will develop burnout (Dahlin et al., 2007). Raising awareness of the personality traits that are associated with burnout can help prevent it from developing before it causes detrimental effects to the student(s) (Lin & Huang, 2013). Preventing burnout can help in making the medical school environment more resilient to stress and facilitates better academic performance of the students (Lee et al., 2017). The objective of this study was to determine whether there was a relationship between personal burnout levels and personality traits, as defined by the CBI and the personality test, in TSOM students. Other demographic factors were also compared to see their effect on personal burnout levels.

TSOM

TSOM is a Caribbean medical school located in Ratho Mill, St. Vincent and the Grenadines. Currently, it has both pre-med and M.D. programs. The M.D. students complete the basic sciences on the island during terms one through five. TSOM offers ILP (Individualized Learning Plan) where the course work is carefully structured to maximize the benefits of coordinated curriculum and taking full advantage of an extended timeline. It allows students to have additional time to master the subject matter of the basic sciences, reinforce study skills, develop test-taking proficiency, improve time management and adapt to the new environment. In terms six through ten, students complete clinical/core rotations back in the United States. This study surveyed students in terms one through five.

CBI

The CBI is a three-part psychological assessment relating to personal, work-related, and client-related burnout (Ruiz et al., 2013). It was created by a group of Danish researchers who found the Maslach Burnout Inventory insufficient (Kristensen et al., 2005). They conducted a five-year prospective intervention study on 2,391 employers ranging from a variety of human service occupations and found that there was a correlation between burnout and number of sick days taken by the workers (Kristensen et al., 2005). However, their overall goal was to observe the levels of burnout over time and how that may impact other outcomes (Kristensen et al., 2005).

Other researchers have assessed the reliability and validity of the CBI, and some of them include "Validation of the Copenhagen Burnout Inventory to Assess Professional Burnout in Spain" by Ruiz, Basart Gomez-Quintero, and Lluis (Ruiz et al., 2013), and "Copenhagen Burnout Inventory: Adaptation and Transcultural Validation for Portugal and Brazil" by Campos, Carlotto, and Maroco (Campos et al., 2013). The first one concluded that the CBI was useful in determining different levels of burnout between occupation and activity of the worker (Ruiz et al., 2013). The second study concluded that the Portuguese version of the CBI was adequate in assessing burnout among the university's college students. This study focused on the personal burnout portion of the CBI because TSOM students surveyed have not had sufficient experience with patient or client interaction.

Personality Test by Neris Analytics Limited

An individual's personality is defined as specific characteristic patterns of thought, emotion, and behavior ("Personality", 2018). Two independent researchers, Paul Costa and Robert McCrae, worked on categorizing personalities into five categories, which today is known as the Big Five (John & Srivastava, 1999). Carl Jung in the 1920s categorized people based on psychological function, and then later in the 1940-50s, Katharine Cook Briggs and Isabel Briggs Myers worked on taking these psychological categories and reorganized them into a four-letter acronym resulting in the Myers-Briggs Type Indicator ("MBTI Basics", 2018). A company called, "Neris Analytics Limited," argued that even though a group of people may be a certain four-letter acronym, they are not identical. Neris Analytics Limited combined these ideas by organizing personalities based on both the Big Five and the Myers-Briggs Type Indicator ("Our Framework", 2018).

The personality test by Neris Analytics Limited has been used in a variety of ways by other researchers. Research conducted by Esam Omar used this test to help compare different learning styles among dental students. He found that dental students were more likely to have personalities of extraverted, sensing, thinking, and perception. He then compared how the students engaged in learning with their personality types (Omar, 2017). Since Neris Analytics Limited categorizes the sixteen personalities into archetypes, there is a more detailed description of each of the personality types. Williams, a student, used these listed archetypes for her thesis in 2017 to mold four ceramic vessels into the asserted four main personality tropes (Williams, 2018). Lastly, this test has also been used in a correlation with the linear congruential method by Mardhatillah. The goal of her research was to conduct the psychological tests and then compare the results of behavior, habits, and strengths vs. weaknesses (Mardhatillah, 2015).

Neris Analytics Limited has conducted their own research too. In one of their studies, they assessed the relationship between perfectionism and the turbulent identity. It was found that there was a high correlation between individuals who had a turbulent personality as opposed to an assertive personality with high levels of perfectionism (Darrell, 2017). Another study they performed was the relationship between personality and stress eating. They found that those with the turbulent identity were more likely to engage in stress eating when compared with their assertive counterpart ("Personality Bites: The Types and Stress Eating", 2017). This study focuses on the personality test composed by Neris Analytics Limited.

II.   MATERIALS AND METHODS

Participants

The Institutional Review Board of Trinity School of Medicine approved this project to be conducted before students were surveyed. Students from terms one through five were surveyed for their demographics, personal burnout levels, and personality. Demographics determined the average age, ethnicity, marital status, gender, and term level of the participants. Incomplete responses were excluded from the data set.

Materials

The tool used to assess personal burnout levels was the CBI, the personal burnout section. This was chosen for this study because it singled out personal burnout levels. TSOM students in terms one through five have not yet had adequate experience with patients or clients, so work-related burnout and client-related burnout could not be assessed. This section of the CBI consisted of six 5-point Likert scale questions. This was developed by the Danish researchers who found that the MBI was insufficient, as previously stated (Kristensen et al., 2005). Each participant received an identical response sheet to record his or her answer for each of the questions. These questions assessed personal burnout by focusing on the feelings of physical, mental, and emotional exhaustion. Participants were then scored based on the total number of points that he or she had. A participant could fall into one of four categories. See Table 1.

The second tool used in this study was the free personality test developed by Neris Analytics Limited. This test was chosen for this study because it goes a step further from the traditional Myers-Briggs assessment by including whether a participant is the assertive or turbulent counterpart of the personality types. Participants were asked to go to the developer's website and take the ten-minute assessment. Neris Analytics Limited scored the results of each participant. Participants could fall into one of sixteen categories. These categories included INTJ (-A/-T), INTP (-A/-T), ENTJ (-A/-T), ENTP (-A/-T), INFJ (-A/-T), INFP (-A/-T), ENFJ (-A/-T), ENFP (-A/-T), ISTJ (-A/-T), ISFJ (-A/-T), ESTJ (-A/-T), ESFJ (-A/-T), ISTP (-A/-T), ISFP (-A/-T), ESTP (-A/-T), and ESFP (-a/-T). Participants were asked to email his or her results so that the results could be tallied.

Participants also responded to a demographic questionnaire regarding gender, marital status, age, ethnicity, term level, whether he or she participated in ILP, took a gap year(s) between high school and college, took a gap year(s) between college and medical school, had a full-time job, living alone, and the living environment he or she lived in prior to arrival at TSOM. The above demographic questions were asked to ascertain if the participant had additional stress factors that could contribute to burnout and increase the personal burnout level of the participant.

Procedure

The survey was sent out to the students via email. Two weeks was allotted for the participants to complete the questionnaires. Instructions were given at the beginning of the email, indicating how long the survey should take to complete, how many parts it included, and the deadline for the indicated responses. Participants were asked to complete the survey in one sitting. All participants received the same survey. Finally, all responses were recorded and tallied.

Design and Analyses

Responses for the demographics were grouped into categories and then matched with their appropriate burnout level by tallying up the total for each group. The categories were then graphed based on whether they fell into burnout levels 1 and 2 versus levels 3 and 4. Finally, categories were compared via chi-squared test to determine if any of the results were significant.

III.   STATISTICAL ANALYSIS AND GRAPHICAL PRESENTATION

Burnout Category	Score Value	Meaning of Category
1	0-5 points	No signs of burnout
2	6-11 points	Some signs of burnout
3	12-17 points	Some symptoms of burnout
4	18+ points	Burnt out

Note: Table 1 shows the burnout categories and their corresponding score value and meaning.

Category Tested	x^2	dF	p-value
Traits vs. Burnout Levels	9.51572	9	0.391137
Turbulent & Assertive vs. Burnout Levels	6.26	1	0.012349
Gender vs. Burnout Levels	2.884	1	0.089464
Population Type vs. Burnout Levels	1.30563	3	0.727804
ILP Participants & Full-Term vs. Burnout Levels	0.544	1	0.46078
Marital Status vs. Burnout Levels	11.876	3	0.00752

Note: Table 2 shows the category tested with their respected chi-squared value (x^2), degrees of freedom (dF), and p-value. Rows two and six were statistically significant.
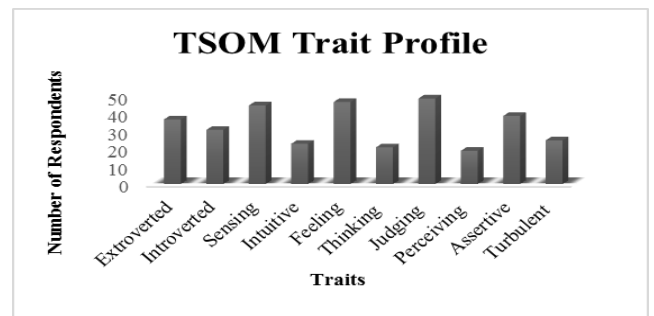

Note: Figure 1 shows the trait profile of the TSOM students. The assertive and turbulent counterparts are sectioned off because they are not personality traits, they are counterparts of the personality.
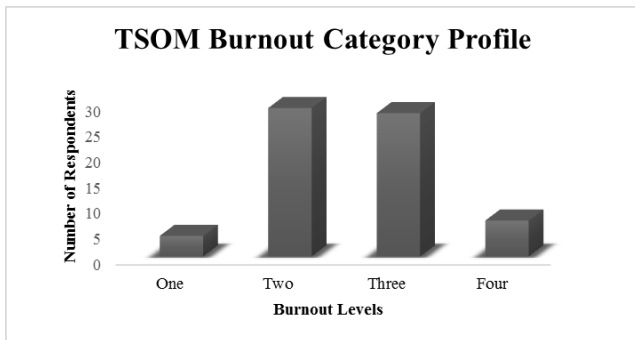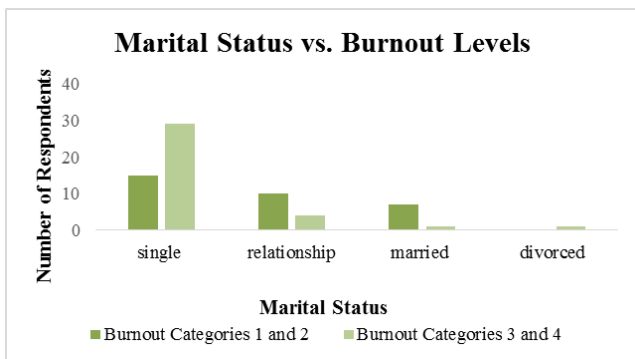
Note: Figure 2 shows the burnout levels of the TSOM students. For the study, burnout levels 1 and 2 were combined and burnout levels 3 and 4 were combined to yield a larger sample size.
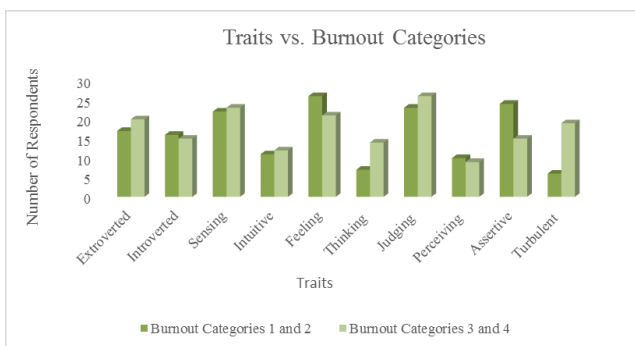
Note: Figure 3 shows the respondents' traits with their respected burnout levels. Again, assertive and turbulent counterparts were separated from the personality traits.

Note: Figure 4 shows the number of respondents based on their marital status with their respected burnout levels.

IV.   RESULTS

Respondents were first organized into their respected traits and burnout levels based on their surveys. Fig.1 shows the trait profile of the students surveyed. Respondents were then placed in the appropriate burnout level (Figure 2). Then they were organized into either burnout levels 1 and 2 or burnout levels 3 and 4. This was conducted in this way because the sample size was not large enough to compare each of the burnout levels separately (Figure 3). This was also completed for each of the demographic sections (Figure 4).

To determine whether there was a statistically significant finding with the categories and their respected burnout levels, the chi-squared test was used. It was found that there was a difference in the turbulent & assertive counterparts vs. the burnout levels and in the marital status vs. the burnout levels. The other categories that were tested included all traits, gender, population type, and ILP participants & full-term students vs. burnout levels, but none of these was statistically significant.

V.   DISCUSSION

The goal of this study was to determine whether there was a relationship between personality traits and burnout levels, and if there were any other demographic factors that could have a relative relationship with burnout levels. Previous studies have shown that personality traits can be associated with burnout, such as having high levels of neuroticism and low levels of extroversion (Shimizutani et al., 2008) and that high levels of openness have a positive correlation with developing burnout (Ghorpade et al., 2007). Those studies, however, focused on using the Big Five Personality traits and not the sixteen personality traits that were defined by Myers-Briggs.

To our knowledge, no one has studied the relationship between personality counterparts and burnout levels. Each of the sixteen personalities has an assertive and turbulent counterpart, making up a total of thirty-two personalities. The assertive counterpart describes individuals that are confident, complacent, and unyielding to stress ("Identity: Assertive vs. Turbulent, 2017). Since these individuals have these qualities, they are more capable of handling difficult and stressful situations. The turbulent counterpart, on the other hand, is quite the opposite. These individuals are guarded and more susceptible to stress because they are not as confident in their own abilities ("Identity: Assertive vs. Turbulent, 2017). In our study, it was found that those that had the turbulent counterpart of the personality were more likely to be in burnout categories 3 and 4 as opposed to those with the assertive counterpart (see Table 2). This was expected because previous studies have shown that those with the turbulent counterpart were more likely to engage in stress eating ("Personality Bites: The Types and Stress Eating, 2017), and they were also more likely to be concerned about being a perfectionist (Darrell, 2017).

Fig. 3 shows the tally of the personality traits with the corresponding burnout category. Initially, it appeared that the thinking trait had some relation for an individual to have a higher chance of developing burnout; however, this was not the case. After testing the traits with the chi-squared test, the value was not significant. There was no significant difference in an individual having one trait over another; therefore, we cannot say that a specific trait can increase or decrease the chances of developing burnout.

At the beginning of this study, we wanted to test whether a personality type could increase or decrease the risk of developing burnout; however, there was not an

adequate sample size for each of the thirty-two personality types to make any conclusion.

Our study also showed that those in either a relationship or married status were less likely to be in burnout categories 3 and 4 as opposed to those that were single. This finding supports other articles that discuss having social support lowers the impact of developing burnout (Jenkins & Elliott, 2004) and (Peterson et al., 2008). This result was expected too because having social support makes challenging situations less stressful. Social support is just one of the many coping mechanisms that humans have learned.

In this study, it was expected to see a statistical difference between gender and burnout levels. It was expected because previous studies have shown that females are usually more emotionally exhausted than males (Lau et al., 2005) and (Timms et al., 2006). If there is more emotional exhaustion, then there is a higher chance of developing burnout; therefore, it should be reflected as a higher burnout level. However, the chi-squared test between gender and burnout levels did not show any statistically significant result.

VI.   CONCLUSION

Aspects of personality have been associated with burnout in medical professionals, but there are few literature reviews that focused solely on medical students. The goal of this study was to assess the types of personality traits and counterparts and burnout levels of TSOM students and then the relationship between them. The findings of this study recognized the increased risk of developing burnout in turbulent counterpart medical students and the decreased risk associated with those with a social support system. Current evidence is limited, which is a barrier in creating effective ways to prevent burnout in those with the turbulent counterpart. Preventing burnout could increase test scores and make the medical school environment resilient to negative stress; however, more research is needed on the topic.

VII.   LIMITATIONS

This study had several limitations, but the biggest one was not having a large sample size to observe personality types, so comparisons against burnout level and personality types could not be performed. Further investigation in a larger medical school could yield such results. Another limitation to this study was that only personal burnout levels could be assessed in TSOM students from the CBI. Work-related and client-related burnout could not be assessed since TSOM students in terms one through five have not yet had that experience, so no comparisons among personal, work-related, and client-related burnout could be completed. A future study could involve TSOM students in terms six through ten who would have that experience to determine the relationship among all three burnout categories.

VIII.   ACKNOWLEDGEMENTS

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