BRIEF

Burnout and Engagement in Doctor of Pharmacy Students: Its Relation to Perception of Academic Ability

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Objective. To assess burnout and engagement in first- and second-year pharmacy students and to investigate their relationships to perception of academic ability.

Background. Burnout measures unresolvable stress, while engagement measures feelings of positivity and fulfillment. Both can influence academic performance. Prior studies have investigated the prevalence of burnout and engagement in students, but few have related these states to self-perception of academic performance in pharmacy students.

Methods. An online survey with three validated scales was administered in May 2017 to first- and second-year pharmacy students enrolled in didactic coursework at Touro University California College of Pharmacy. The Maslach Burnout Inventory (MBI-SS) assessed burnout and the Utrecht Work Engagement Scale (UWES-9) measured student engagement. To characterize academic ability, Academic Self-Perception (ASP), a subscale of the School Attitude Assessment Survey-Revised (SAAS-R), was utilized. Regression analysis was performed using statistical software STATA 14.

Results. Data included 162 student responses (81.4% response). Emotional exhaustion and professional inefficacy had negative correlations with academic self-perception. Dedication was positively correlated with Academic Self-Perception.
Conclusion. In pharmacy students completing the didactic portion of the curriculum, various engagement and burnout parameters were seen to correlate with academic self-perception.

Keywords: Burnout, Engagement, Pharmacy, Academic performance

INTRODUCTION

Burnout is an important social issue that has garnered a great deal of attention in the recent years.\textsuperscript{1-5} It is defined as a multidimensional syndrome characterized by emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment.\textsuperscript{1} Risk factors correlated with burnout include work-life imbalance, heavy workload, depression, interpersonal disputes, and a decreased sense of self-worth.\textsuperscript{6} Within the context of graduate programs, chronic exposure to these stressors places health professional graduate students at increased risk for experiencing burnout.

Several studies have measured stress and burnout in medical, dental, and nursing students,\textsuperscript{2-5} while few have included pharmacy students.\textsuperscript{7,8} Most of these reports have used the Maslach Burnout Inventory (MBI) to measure burnout. MBI is an objective, validated instrument, considered to be the gold-standard for measuring burnout.\textsuperscript{9} It assesses burnout using questions in three subscales: emotional exhaustion (MBI-E), cynicism (MBI-C), and professional efficacy (MBI-PE). The emotional exhaustion subscale measures the feelings of emotional overextension and being emotionally exhausted from one’s studies. Cynicism measures indifference to one’s studies and professional efficacy measures satisfaction from past and present accomplishments.\textsuperscript{1,6,10} It is important to understand the prevalence of burnout among pharmacy students as previous studies have demonstrated that it can impact academic performance. In a 2014 study, Duru and colleagues examined the relationship between emotional exhaustion and academic performance in 383 undergraduate students in Turkey. The findings suggest that emotional exhaustion can lead to increased cynicism, and that students begin to feel indifferent, insufficient, and unsuccessful in their studies when they underperform.\textsuperscript{11}
To better understand the impact of mental and emotional states on academic performance, student engagement has been assessed. Engagement is defined as a positive, fulfilling, work-related state of mind, and is measured using the Utrecht Work Engagement Survey (UWES-9). This scale is characterized by three subscales: vigor (UWES-V), dedication (UWES-D), and absorption (UWES-A). Vigor is defined by having high levels of energy, resilience, and willingness. Dedication is characterized by having a sense of significance from one’s work and absorption is defined by being fully concentrated and happily engrossed in one’s work. To date, no study has investigated the effect of burnout and engagement on academic performance in pharmacy students.

To describe the impact of burnout and engagement on academic performance, a subscale of the Student Attitudes Assessment Survey (SAAS-R) called academic self-perception (ASP) can be utilized. ASP measures the perceived self-worth of a student and reinforces the idea that students who are confident in their abilities are likely to succeed academically.

The objectives of this study were (1) to describe burnout and engagement of students completing the didactic portion of a PharmD program using MBI and UWES-9 and 2) to investigate whether students’ self-perception of academic performance is positively associated with engagement and negatively associated with burnout. The hypothesis is that students’ self-perception of academic ability is positively associated with engagement and negatively associated with burnout. These findings can help create awareness in pharmacy schools such that mental wellness is prioritized.

METHODS

An online survey was administered in late May 2017 following the final exams. Data was de-identified to maintain participant anonymity and privacy. This study was approved by the Touro University California Institutional Review Board (P-0517).

Participants were first (P1) and second year (P2) students enrolled at Touro University California-College of Pharmacy (TUC-COP). TUC-COP is a private institution with “2+2” program. Students complete all didactic coursework in the P1 and P2 years, followed by two years of Advanced Pharmacy Practice Experience (APPE) rotations. Inclusion criteria were current enrollment as a P1 or P2 student in
TUC-COP. Exclusion criteria were students taking a leave of absence and those who did not consent to completing the survey.

The survey measured demographics data, burnout, and engagement. Burnout was assessed using the Maslach Burnout Inventory-Student Survey (MBI-SS). Authorization to use the MBI-SS was purchased from Mind Garden. The MBI-SS is comprised of 16 total questions divided into three subscales: emotional exhaustion (MBI-EE), cynicism (MBI-C), and professional efficacy (MBI-PE). MBI-PE scores were reversed in order to indicate professional inefficacy (MBI-rPE). The use of cut-off values to assess burnout scores is not advised as they are not clinically derived.

The student engagement was measured using the Utrecht Work Engagement Survey (UWES-9). The UWES-9 consists of three individual subscales: vigor (UWES-V), dedication (UWES-D), and absorption (UWES-A). It contains a total of nine questions and employs a 7-point Likert scale ranging from “never” (0) to “always” (6).

Student academic self-perception was measured using a subscale of Student Attitude Assessment Survey-Revised (SAAS-R) called Academic Self-Perception (ASP). The ASP subscale consists of seven questions and employs a 7-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (7).

Data analysis was conducted using STATA version 14 statistical software (StataCorp. 2015. *Stata Statistical Software: Release 14*. College Station, TX). Linear regressions were performed with components of burnout and engagement as independent variables and academic self-perception as the dependent variable. P-values <0.05 were considered statistically significant.

**RESULTS**

The number of first- and second-year students enrolled at Touro University California College of Pharmacy at the time of the survey administration was 199 and 162 students completed the survey resulting in an 81.4% response rate.

Asian or Pacific Islander ethnicities comprised 70.4% of all students, with the next highest reported ethnicities being Caucasian (11.7%), other (7.4%), and Hispanic or Latino (6.8%), respectively.
The average age of the student population was 25.0 years old ± 3.34 years. Female students comprised 64.2% of the population.

Table 1 includes descriptive statistics of the burnout and engagement surveys. Average scores are reported as a reference to gauge where an average student at TUC-COP would score on a given scale range. For example, the average emotional exhaustion score of the survey population was 23.0 ± 6.17 on a scale range of 0 to 30.

Table 2 presents results of the linear regression assessing the effect of each subscale of burnout, measured by MBI, on academic self-perception (ASP), which is a subscale of SAAS-R. There were statistically significant negative correlations between the effect of emotional exhaustion on academic self-perception (p<0.001, CI [-2.9, -0.9]) and reversed professional efficacy on academic self-perception (p<0.001, CI [-5.2, -2.7]). Similarly, the effect of each subscale of engagement (UWES-9) on academic self-perception is summarized in Table 3. Only dedication resulted in statistically significant positive correlation with academic self-perception (p=0.003, CI [0.9, 4.4]).

DISCUSSION

This is the first study that correlates the effect of burnout and engagement on perception of academic performance in pharmacy students. An objective of this study was to describe burnout and engagement in pharmacy students completing the didactic portion of the curriculum. With regard to burnout, emotional exhaustion appears to have the greatest impact revealing that students feel overextended in school. For engagement, mean scores for dedication and absorption were similar, followed by vigor. Students may feel engrossed in their studies and feel a sense of significance from their studies but may not have as much energy and resilience. These scores can be used for comparison in future studies that investigate burnout or engagement in pharmacy students.

Another objective of this study was to investigate whether students’ academic self-perception is positively associated with engagement and negatively associated with burnout. Emotional exhaustion and professional inefficacy have a negative correlation with students’ academic self-perception. In other words, students who feel overextended by their studies and are not satisfied with their educational
accomplishments are less likely to perceive their academic achievements in a positive manner. This idea is supported in an investigation by Duru and colleagues which states that students who realize that they are unable to meet academic expectations will likely become frustrated and withdraw from these responsibilities.\textsuperscript{11} They have proposed a model in which students become emotionally exhausted first and later become indifferent or cynical which negatively impacts their academic performance.\textsuperscript{11} However, a relationship between cynicism and academic self-perception could not be established as the results were not statistically significant. Conversely, dedication is positively correlated with students' academic self-perception. This is in line with findings that if students feel a sense of significance from their work, they are likely to be more invested in their work and view their academic performance in a positive manner.\textsuperscript{17} A relationship of vigor and absorption with academic self-perception could not be established as the results were not statistically significant.

While burnout can negatively impact students’ self-perception of academic ability, there is evidence that the impact of burnout can manifest in academic performance as well. A 2019 study conducted in Ireland by Fitzpatrick and colleagues found a strong relationship between burnout and the risk of depression in medical students. Those with greater scores in cynicism and emotional exhaustion were identified as having greater risk of depression.\textsuperscript{18} This data supports the observations of the current study as there is an inverse relationship between burnout and a student’s emotional wellbeing and ability to perform. Although academic performance and emotional health can be influenced by many factors, burnout is clearly implicated and plays a negative role in students.\textsuperscript{18} Furthermore, a report by Wang and colleagues involving nursing students from China found that those with positive professional self-concept reported less academic burnout. Students who were able to better identify themselves as vital individuals in their respective fields had lower scores of burnout.\textsuperscript{19} These studies demonstrate that burnout may have a negative impact on academic performance.

There were several limitations to this study. Firstly, the findings cannot be generalized to all pharmacy students as student populations and curricula vary between pharmacy schools. Also, the majority of the surveyed population consisted of females and this female to male ratio may not be
representative of all pharmacy schools. Lastly, this study looked at perception of academic ability, a subjective measure, rather than actual performance.

Future studies could include long-term assessment of burnout through students’ pharmacy professional career including didactic years, clinical rotations, and post-graduation. Burnout levels during clinical rotations can provide insight into the preparedness of students and the learning environment provided by the rotation site. Another future direction could include assessing students at various schools and curricula and comparing the burnout and engagement levels. It may also be helpful to collect data from schools with different curricula to get a more generalizable sample. Furthermore, in order to assess actual performance, future studies could include student GPA retrieved from college registrar to objectively academic performance and ensure data accuracy.

CONCLUSION

The data from TUC-COP for burnout and engagement does not uniformly fit the hypothesis that less burnout and a greater level of engagement relate to positive academic self-perception in pharmacy students. However, the data reflect a general trend in this direction. Emotional exhaustion seems to have the greatest impact on students. Emotional exhaustion and professional inefficacy had a negative impact on academic self-perception and dedication had a positive impact on academic self-perception. The intention of this study is to serve as a steppingstone to create awareness about emotional exhaustion in pharmacy students.

REFERENCES

Table 1: Descriptive Statistics for Burnout and Engagement scales (N=162)

<table>
<thead>
<tr>
<th>Scale Range</th>
<th>Average Score (SD)</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maslach Burnout Inventory</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Exhaustion</td>
<td>0-30</td>
<td>23.0 (6.2)</td>
</tr>
<tr>
<td>Cynicism</td>
<td>0-30</td>
<td>15.9 (7.7)</td>
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<tr>
<td>Reversed Professional Efficacy</td>
<td>0-36</td>
<td>8.9 (5.1)</td>
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<tr>
<td><strong>Utrecht Work Engagement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigor</td>
<td>0-18</td>
<td>9.1 (3.6)</td>
</tr>
<tr>
<td>Dedication</td>
<td>0-18</td>
<td>11.4 (3.4)</td>
</tr>
<tr>
<td>Absorption</td>
<td>0-18</td>
<td>10.8 (3.6)</td>
</tr>
</tbody>
</table>

Table 2. Linear regression is performed to assess the effect of three burnout subscales on academic self-perception scores. (N=162)

<table>
<thead>
<tr>
<th>Slope</th>
<th>P-value</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Emotional Exhaustion</td>
<td>-1.9</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>Cynicism</td>
<td>0.5</td>
<td>0.2</td>
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<tr>
<td>Reversed Professional Efficacy</td>
<td>-3.9</td>
<td>&lt; 0.001*</td>
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</table>

*p < 0.05

Table 3. Linear regression is performed to assess the effect of each engagement subscale on academic self-perception scores. (N=162)

<table>
<thead>
<tr>
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<th>P-value</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Vigor</td>
<td>0.1</td>
<td>0.8</td>
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<tr>
<td>Dedication</td>
<td>2.7</td>
<td>0.003*</td>
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<tr>
<td>Absorption</td>
<td>-0.6</td>
<td>0.4</td>
</tr>
</tbody>
</table>

*p < 0.05