Research

A Multicenter Study Assessing Burnout and Work Engagement in Student Pharmacists and Faculty Members

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ABSTRACT

Objective: The objective of this study was to characterize work engagement and burnout as well as potential demographic factors associated with each student and faculty member at 2 pharmacy programs in the US.

Methods: A survey including the Utrecht Work Engagement Scale-9 (UWES-9) and a single-item burnout measure was conducted from April to May 2020. Demographic data including age range, gender, and other characteristics were also collected. Mean UWES-9 scores, scoring category results, and the proportion of the cohorts reporting symptoms of burnout were reported. Point biserial correlation was used to compare the relationship between UWES-9 mean scores and burnout rates. Regression analyses were also performed to assess variables predictive of work engagement and burnout.

Results: Students (N = 174) reported a mean UWES-9 score of 3.0 (SD = 1.1), while faculty members (N = 35) reported a mean of 4.5 (SD = 0.7). Over half (58.6%) of the students and 40% of faculty members reported symptoms of burnout. Faculty members demonstrated a strong significant negative correlation between work engagement and burnout (r = −0.35), while students did not (r = 0.04). Regression analyses found no significant demographic factors predictive of UWES-9 scores in students or faculty, while first year students were less likely to report burnout symptoms, and no significant factors for burnout were found in faculty.

Conclusion: Our study found that work engagement scores and burnout symptoms were inversely correlated in pharmacy faculty members surveyed but lacked correlation in students. Larger, more robust studies should be conducted to further elucidate the relationship between work engagement and burnout.

1. Introduction

Burnout is defined as “a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment.” Maslach and others have reported that burnout often results from prolonged exposure to emotional and interpersonal stress at one’s workplace, indicating that it is an occupation-related issue rather than distinctly a psychological issue. Faculty members and students (including health professions students) are among groups at the risk for developing burnout. Furthermore, as health professions students graduate and become practitioners, burnout may lead to detrimental consequences including increased medical errors, poorer work control, and higher intent to leave one’s position. Within pharmacy education, studies have found high rates of emotional exhaustion in pharmacy faculty members and student pharmacists.

A separate but positively-framed feeling of involvement at work is termed “engagement” or “work engagement.” Engagement is a positive, energetic, and fulfilling state of mind about work characterized by vigor, dedication, and absorption. Similar to burnout, significant research has investigated the role that engagement has in overall employee well-being and other relevant metrics. Accordingly, the concept of “self-determination theory” affirms that work engagement is linked to motivation at work; if an employee has met the 3 basic needs of autonomy, competence, and relatedness, then they are more likely to feel supported and connected to their team.

As psychological constructs, burnout and engagement have been characterized as inverse (or “antipodes”) of one another, implying that as one increases, the other should decrease. However, literature describing these constructs present a more nuanced relationship, as it does not necessarily hold true that increased engagement is associated with...
decreased burnout, and vice-versa. Some have hypothesized that engagement can become too intense and potentially lead to burnout, implying “flaming out” of the worker’s engagement energy leading to depletion. The parallel concept of “work engagement” in learners has been described as “academic engagement.” Considering how burnout and engagement may relate, the Academy has been implored to foster a culture of wellness and resilience for pharmacy students, faculty, staff, and administrators. Professions outside of pharmacy are also exploring risk factors for burnout and strategies for improving the quality of life. To-date, however, limited research has been published related to burnout and work engagement in healthcare professions education, particularly student pharmacists and pharmacy faculty, and none to our knowledge assessing both in the same cohort to determine if this association exists. Thus, the objective of this study was to characterize work engagement and burnout and assess their relationship and determine the potential associated or predictive demographic factors in student pharmacists and faculty members within 2 Doctor of Pharmacy (PharmD) programs.

2. Methods

A 49-question self-report survey was delivered anonymously using Qualtrics software (Provo, UT) from April, 2020 to May, 2020. The survey included relevant demographic items including age range, gender, and an additional self-report scale related to impostor phenomenon whose results were discussed in a previous study. Subjects in this cross-sectional study included student pharmacists and faculty members at Sullivan University College of Pharmacy and Health Sciences (SUCOPHS), a 3-year accelerated PharmD program, and Northeast Ohio Medical University College of Pharmacy (NEOMED), a traditional 4-year PharmD program. This study was deemed exempt by the institutional review boards of both the programs.

The Utretcht Work Engagement Scale-9 (UWES-9) is a 9-item instrument intended to assess the respondent’s level of engagement with work activities. The UWES-9 asks respondents to evaluate each statement on 2 levels (1) if the respondent has ever experienced the feelings described in the statement and (2) how frequently the feelings are experienced if present. Respondents rate each statement on a 7-point Likert-type scale of “0” (never/never) to “6” (always/every day). Of the 9 items on the UWES-9, 3 relate to vigor (eg, “At my work, I feel bursting with energy”), 3 relate to dedication (eg, “My job inspires me”), and 3 relate to absorption (eg, “I get carried away when I am working”). For the students in our study, a modified version of the UWES-9 targeted at students (the UWES-9S) was utilized via branched logic. The UWES-9S has been validated for use in student populations and contains nearly identical wording to the UWES-9 (eg, “I am proud of my studies” vs. “I get carried away when I am working”). Given their similarity and established construct validity, both scales are referred to as the UWES-9 and analyzed together for the purposes of this study.

To assess burnout, the single-item burnout measure derived from the 10-item “Mini-Z” instrument was utilized. The single-item asks respondents to self-assess their level of burnout via the question: “Overall, based on your definition of burnout, how would you rate your level of burnout?” Respondents then choose 1 of 5 statements (corresponding to 0–4 points), with higher numbers corresponding to increasing symptoms of burnout. For this single-item burnout measure, a cut point established by previous studies of ≥ 2 points represented symptoms of burnout vs. < 2 represented no symptoms of burnout. This specific instrument was selected due to its brevity, non-proprietary status, and previous history of use in a variety of settings.

Survey responses were downloaded from Qualtrics, and statistics were performed using Microsoft Excel 2016 (Redmond, WA) and IBM SPSS, version 28 (Armonk, NY). Demographics were reported as means (SD) or raw numbers with percentages. For simplification of comparison, certain demographic characteristics were used to create dichotomous groups or subgroups (detailed where applicable in the results section). UWES-9 scores are reported as mean (SD) and classified into categories (very low, low, average, high, and very high) based on comparative norms. For preliminary analyses, UWES-9 mean scores were compared between groups using t-tests.

Burnout was reported as a dichotomous categorical variable (ie, present or absent). Burnout rates were compared among demographic groups in students and faculty members using Chi square or Fisher’s exact test. UWES-9 mean scores were compared with the presence of burnout (yes or no) using point biserial correlation. Multiple linear regression analyses were performed to assess the relationship between the demographic variables and mean UWES-9 scores for students and faculty members, and multiple logistic regression analyses were performed to determine demographic factors predictive of the presence of burnout symptoms (yes (Y)/no (N)).

3. Results

Our overall response rate to the survey was 35.5% (209 of 589). For student pharmacists, our overall response rate was 33.9% (174 of 514), which was higher for SUCOPHS at 39.6% (72 of 182) vs NEOMED at 30.7% (102 of 332). For faculty, the overall response rate was 46.7% (35 of 75), which was similar between programs with NEOMED at 46.8% (22 of 47) and SUCOPHS at 46.4% (13 of 28), p > .05. Demographic characteristics for student pharmacist respondents (n = 174) are listed in Table 1. Most student pharmacists (55.7%) were ages 25 and under, which was similar between programs (p > .05). Most student pharmacists identified as female (70.7%), which was also similar between programs (p > .05). Student pharmacist respondents were overall evenly distributed among years of the respective programs, though the differing length of the programs prevented statistical comparison of year in program other than the groupings described previously.

Demographic characteristics for faculty respondents (n = 35) are listed in Table 2. Most faculty were aged 31–35 years, with a slightly higher proportion at NEOMED vs SUCOPHS (31.8% and 23.1%, respectively). Most faculty in the combined group (57.1%) identified as female, though this was different between institutions (p < .05). Most (84.6%) faculty from SUCOPHS identified as female, whereas less than half (40.9%) of the faculty from NEOMED identified as female (p < .05). Faculty overall were evenly split between assistant and associate professor ranks (42.9% for each). Most faculty (62.9%) reported no administrative rank and 60% reported practicing pharmacy.

Full results for UWES-9 are shown in Tables 3 and 4. Mean UWES-9 scores for faculty were similar between institutions (p = .24), as well as by age grouping (p = .21), gender (male vs female, p = .75), status as an administrator (Y/N, p = .47), and status as practicing pharmacy (Y/N, p = .96). Junior faculty members (rank of assistant professor and below) had a significantly higher mean UWES-9 score of 4.7 (SD = 0.6) as compared with senior faculty (rank of associate professor and higher) with a mean of 4.3 (SD = 0.7), p = .05. A linear regression model for faculty including age (by group), gender (male vs female), status, as a junior faculty member (rank of assistant professor or lower, Y/N), presence of an administrative title (Y/N), as well as status as practicing pharmacy (Y/N) was able to predict only 14.5% of the variability in UWES-9 scores (r² = 0.15). No variables in the model were significant.

Overall mean UWES-9 scores for student pharmacists were significantly different between programs (NEOMED 3.5 vs SUCOPHS 2.2, p = .001). As shown in Table 3, the lower overall score for student pharmacists (specifically at SUCOPHS) was driven primarily by the vigor subscale, though the vigor subscale was the lowest among the 3 subscales for all respondents. Mean UWES-9 scores for students were not significantly different by age grouping or gender. During evaluating professional year in program, however, students in their “middle year (s)” of professional training had higher mean engagement scores vs. their first professional year or final professional year counterparts.
The proportion of students reporting symptoms of burnout was higher at NEOMED compared to SUCOPHS (63.7% at NEOMED vs 53.8% at SUCOPHS) (Table 1). This difference was significant at the p < .05 level. However, the proportion of faculty members reporting symptoms of burnout was slightly lower at NEOMED (40.9%) compared to SUCOPHS (43.6%) (Table 2). This difference was not statistically significant. The single-item burnout measure was one-item that asks respondents to self-assess their level of burnout. The proportion of students reporting symptoms of burnout was slightly lower at NEOMED compared to SUCOPHS (3.2% vs 2.8, p < .05). A linear regression model including age (by group), gender (male vs female), first year status (Y/N), middle year(s) status (Y/N), and final year status (Y/N) was able to predict only 3.2% of the variability in UWES-9 scores (r²). Including age (by group), gender (male vs. not male), first year status (Y/N), middle year(s) status (Y/N), and final year status (Y/N) was able to show that no factors in the model were predictive of burnout symptoms. First year students were 70% less likely to report burnout symptoms than their professional year counterparts (33.3% vs 65.2%, p < .05). Furthermore, 68.6% of “middle year” students reported burnout symptoms vs 50% of non-middle year counterparts, which was significant (p < .05). Final year students reported burnout symptoms at a similar rate to higher year students reported burnout at a higher rate (68.6% at SUCOPHS, though this was insignificant (p > .05). Age and gender did not correlate with burnout symptoms for student pharmacists. Non-binary/third gender did not correlate with burnout symptoms for student pharmacists. However, first professional year students reported burnout symptoms at a similar rate to higher year students reported burnout at a higher rate (68.6% at SUCOPHS).
Abbreviations: NEOMED, Northeast Ohio Medical University; SUCOPHS, Sullivan University College of Pharmacy and Health Sciences; UWES-9, Utrecht Work Engagement Scale-9.

The UWES-9 is a nine-item self-report instrument which asks respondents to rate each statement on 2 levels: (1) if the respondent has ever had the feelings indicated in the statement and (2) frequency of those feelings if/when present. Respondents rate each statement on a seven-point Likert-type scale of 0 (never/never) to 6 (always/every day). The resulting overall score is a mean of all 9 items, and the subscale scores (vigor, dedication, and absorption) are means of the 3 items mapped to each respective subscale.

symptoms (OR = 0.3, p = .01) when controlling for other variables in the model.

Point biserial correlation between the burnout status (present/absent) and mean overall UWES score of the faculty cohort demonstrated a significant negative correlation between engagement and burnout (r = −0.35, p < .05), while student pharmacists did not (r = 0.04; p > .05).

4. Discussion

This study demonstrated that student pharmacists and faculty members were moderately engaged with their work. However, student pharmacists reported lower engagement scores with their academic work. This finding was primarily driven by the vigor subscale score, implying that student pharmacists may not possess a high level of energy and mental resilience during their academic life. Both cohorts reported lower vigor across all subscales. Thus, while respondents may have felt high levels of involvement, enthusiasm, and concentration with their work or academic studies, their mental and physical energy in the involvement could be improved. Junior faculty demonstrated higher levels of engagement relative to their senior counterparts; this finding suggests that administrators should consider ways to increase employee engagement amongst faculty who have more time in rank. Student pharmacists in their “middle years” of training reported higher engagement; faculty could consider how to improve engagement amongst first and final professional year students.

There are a few examples available in the literature evaluating work engagement in pharmacy faculty members. Pate and colleagues evaluated engagement in faculty members before and after an intervention to enhance faculty engagement and collaboration. Authors found that UWES-9 scores improved with a large attribution of this growth, demonstrated by an increase in vigor subscale scores, though these findings were not statistically significant. Larger studies are needed to determine best practices of increasing engagement amongst pharmacy faculty.

Similarly, there are a few examples of measuring work engagement in student pharmacists. Kaur and colleagues evaluated burnout and work engagement and their association with self-perception of academic ability. Their findings demonstrated that emotional exhaustion and professional efficacy were negatively correlated with academic self-perception while dedication was positively correlated with academic self-perception. This study did not, however, evaluate the association between burnout and work engagement.

For student pharmacists in our study, burnout symptoms appeared to be higher in the middle years of training. Though additional confirmation is needed, faculty should pay attention to areas of the curriculum where students could be at the risk for developing increased burnout symptoms and should consider ways to decrease burnout risk during these intensive years. Additionally, the inverse relationship expected between engagement and burnout was demonstrated in faculty, but not in the student cohort, which was an unexpected finding.

Demographic factors did not appear to be significantly predictive of burnout symptoms in faculty members in our study, which is consistent with existing literature in higher education. El-Ibiary and colleagues described high rates of emotional exhaustion amongst pharmacy faculty utilizing the MBI-Educators Survey. Their findings demonstrated risk factors of burnout of being a woman, having a rank of assistant professor, lack of having a hobby, and having younger children. The relatively small number of faculty in our study (n 35) may have precluded the ability to detect more significant predictors of burnout.

Table 3

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<tr>
<th>UWES-9® Overall and Subscale Scores of Student Pharmacists and Faculty Members by Institution (N = 209).</th>
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<tbody>
<tr>
<td><strong>Student pharmacists (n = 174)</strong></td>
</tr>
<tr>
<td><strong>SUCOPHS (n = 72)</strong> Mean (SD)</td>
</tr>
<tr>
<td>Overall UWES-9 score</td>
</tr>
<tr>
<td>Vigor subscale</td>
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<tr>
<td>Dedication subscale</td>
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<td>Absorption subscale</td>
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Table 4

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<tr>
<th>UWES-9® Score Classification Results of Student Pharmacists and Faculty Members by Institution (N = 209).</th>
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<tr>
<td><strong>Scoring categories (mean ranges)</strong></td>
</tr>
<tr>
<td><strong>SUCOPHS (n = 72)</strong> n (%)</td>
</tr>
<tr>
<td>Very low (&lt;1.77)</td>
</tr>
<tr>
<td>Low (1.78-2.88)</td>
</tr>
<tr>
<td>Average (2.89-4.66)</td>
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<tr>
<td>High (4.67-5.50)</td>
</tr>
<tr>
<td>Very high (≥5.51)</td>
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</table>

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5. Conclusion

This study demonstrated an inverse correlation between burnout and engagement among pharmacy faculty members; however, this finding was inconsistent within the student pharmacist cohort. By utilizing validated survey tools such as the UWES-9 and single-item burnout measure, both student pharmacists and faculty members can be monitored for the prevention or existence of burnout and engagement over time. Pharmacy programs should consider ways to proactively address the prevention and mitigation of burnout while fostering work and academic engagement. Additionally, the Academy can explore larger scale studies to determine if these findings are consistent with student pharmacists and faculty across the US, and subsequently recommend systemic strategies that promote well-being and resilience.

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Author Contributions

Daniel R Malcom: Conceptualization, Methodology, Formal analysis, Investigation, Resources, Data Curation, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration. Jaclyn Boyle: Conceptualization, Methodology, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration.

Declaration of Competing Interest

None declared.

References


Table 5

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<th>Student pharmacists (n = 174)</th>
<th>Faculty (n = 35)</th>
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<tbody>
<tr>
<td></td>
<td>SUCOPHS (n = 72)</td>
<td>SUCOPHS (n = 13)</td>
</tr>
<tr>
<td>≥ One symptom of burnout</td>
<td>37 (51.4)</td>
<td>5 (38.5)</td>
</tr>
<tr>
<td>No symptoms of burnout</td>
<td>35 (48.6)</td>
<td>8 (61.5)</td>
</tr>
<tr>
<td></td>
<td>NEOMED (n = 102)</td>
<td>NEOMED (n = 22)</td>
</tr>
<tr>
<td>≥ One symptom of burnout</td>
<td>65 (63.7)</td>
<td>9 (40.9)</td>
</tr>
<tr>
<td>No symptoms of burnout</td>
<td>37 (36.3)</td>
<td>13 (59.1)</td>
</tr>
</tbody>
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Abbreviations: NEOMED, Northeast Ohio Medical University; SUCOPHS, Sullivan University College of Pharmacy and Health Sciences.

*The single-item burnout assessment is one-item that asks respondents to self-evaluate their level of burnout based on their own definition of the term/concept. Respondents choose one of 5 statements on an ordinal scale (1–5) that correspond to progressively greater symptoms of burnout. Based on their response, respondents are classified as having ≥ 1 symptom of burnout or no symptoms of burnout.

Several studies suggest ways to prevent faculty burnout, including the development of mentorship programs, fostering self-renewal techniques, increasing engagement through job-person fit, offering child-care benefits, increasing work hour flexibility, and offering professional development in areas such as time management. 6,5 Further, administrators can promote a sense of belonging and appreciation for faculty by creating venues for faculty to communicate their needs to superiors (perhaps during annual performance reviews) including adjustments to workload or responsibilities. Accordingly, the institution should determine ways to communicate the value of their faculty’s contributions to the work of the organization. 9–21,42,63

This examination of work engagement and burnout generates many potential considerations. Although there are clear reasons for discrepancies in engagement and burnout between student pharmacists and faculty, the detrimental impact of the COVID-19 pandemic was likely felt by both cohorts as survey distribution occurred in the early pandemic environment. Reed and colleagues described trends in decreased resilience and wellness behavior and concordant increased exhaustion and disengagement amongst first year student pharmacists during the pandemic at 1 institution. 44 The transient nature of a student’s role may have also limited the ability to feel engaged with academic work, whereas faculty members could perceive a more longitudinal commitment to their professional roles. Student pharmacists may have limited time for hobbies, or may need professional development in managing stress or academic workload. Additionally, outside of the results of our study, the Academy may benefit from exploring how the concepts of engagement and burnout intersect with other workplace philosophical constructs, such as impostor phenomenon or growth vs fixed mindset. 45 Future research should continue to define the relationship between work engagement and burnout, to determine if attempts to increase engagement in faculty members and students can have a corresponding effect on reducing burnout.

There are several important limitations of our study to note. First, like all survey research, non-response bias could have been present. However, our study included multiple pharmacy programs of diverse types with diverse characteristics, including one 4 year traditional public institution and a 3 year private institution. Most studies to date have been single center in nature. The response rate and/or sample size, while low in terms of absolute numbers, aligns with other studies in this area conducted in higher education and among health professions students and faculty members (including in pharmacy) and reflected a diversity of demographic groups. 8,11,12,42,44,45 Future studies should aim to have larger and more diverse populations, including more geographic diversity. Finally, despite the benefits of the single-item burnout measure, it should be noted that this instrument has been challenged as potentially missing individuals who are burned out or undervaluing the importance of the dimensionality of burnout. 86

5. Conclusion

Daniel R Malcom: Conceptualization, Methodology, Formal analysis, Investigation, Resources, Data Curation, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration. Jaclyn Boyle: Conceptualization, Methodology, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration.

Declaration of Competing Interest

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