

BURNOUT AND JOB ENGAGEMENT OF NURSE ANESTHETISTS IN THE UNITED STATES

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ABSTRACT

This study examines the possible determinants of burnout and job engagement of Certified Registered Nurse Anesthetists (CNRAs). Data were collected via electronic questionnaire from a random sample of CNRAs in the United States. Two models were estimated on 225 CNRAs using least squares regression: Job engagement as a function of job characteristics and employee personality, and employee burnout as a function of job engagement and demographic-control variables. The statistically significant results were that two job characteristics (skill variety and feedback) were positively associated with job engagement, three dimensions of personality (extraversion, conscientiousness, and openness) were associated with job engagement, and job engagement was negatively associated with employee burnout.

INTRODUCTION

Employees who are burned out tend to have more psychological and physical health problems, more absenteeism, and lower job performance [1]. On the other hand, employees who are engaged with their work tend to have better health and better job performance [1].

While concerns about employee burnout are not limited exclusively to human services such as teaching, social work, and health care, those areas have been an important focus of the literature on employee burnout [3]. Burned out nurses can negatively affect both the quality and the cost of patient care. Certified registered nurse anesthetists (CRNAs) are essential members of the surgical team, and demand for them is increasing as the United States (US) tries to control healthcare costs. CRNAs, like other highly trained healthcare professionals, are difficult and expensive to replace. Job dissatisfaction and burnout impact the workplace in numerous ways; one is by increasing turnover. It is therefore important to understand the factors that are associated with the burnout of CRNAs.

This study is an exploration of CRNA job engagement and burnout in the US. While there is ample research regarding the general registered nurse population regarding satisfaction and retention strategies, there has not yet been a study to link job dissatisfaction, burnout, and turnover intent among CRNAs in the United States. This study examines the determinants of employee burnout among nurse anesthetists in the United States using survey data from 2013. The results of this study will not only add to the body of knowledge about CRNA turnover intent, but they will also facilitate future studies as to how to improve retention.

LITERATURE

Burnout has been defined as "...a syndrome of exhaustion, depersonalization, and reduced personal accomplishment [3, p. 499]. Burnout has been hypothesized to be associated both with high job demands (physical workload, time pressure, recipient contact, physical environment, and shift work) that contribute to exhaustion, and with low job resources (feedback, rewards, job control, participation, job security, and supervisor support) that contribute to disengagement [3]. Job demands have been found to be more important predictors of burnout than job resources [1]. In addition to job demands and job resources, personality has been found to be an important antecedent of burnout [1].

Employee engagement has been defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" [11, p. 74]. Some of the burnout literature conceptualizes employee burnout and employee work engagement to be "...opposite poles of one continuum" [2, p. 664]. On the other hand, some of the burnout literature has characterized burnout and work engagement as separate but related constructs: "A separate operationalization of work engagement enables an investigation of situations in which employees are low (or high) on both burnout and engagement. For example, it is conceivable that employees in certain low demand-low responsibility jobs are not burned-out, but this does not necessarily mean that they are highly involved in their work (engaged). Thus, instead of being mutually exclusive states, burnout and engagement are principally considered to be independent states. Yet, it is expected that, empirically speaking they are moderately high and negatively related" [2, p. 664].

Empirical studies have examined the determinants of burnout and engagement in terms of job demands and job resources. For example, a study of teachers found: job demands → burnout → ill health, and job resources → engagement → organizational commitment [6]. As another example, a study of telecom managers found job demands and job resources predict burnout, job resources predict work engagement, and burnout and work engagement predict absenteeism [9].

Empirical studies have also examined the role of personality in understanding the determinants of burnout and engagement. For example, a study of Dutch employees found that neuroticism predicts burnout and engagement [7].

Based on the literature, we developed the following hypotheses:

Hypothesis 1: Employee engagement is positively impacted by job characteristics.

Hypothesis 1a: Employee engagement is positively impacted by skill variety.

Hypothesis 1b: Employee engagement is positively impacted by task significance.

Hypothesis 1c: Employee engagement is positively impacted by autonomy.

Hypothesis 1d: Employee engagement is positively impacted by feedback from the job itself.

Hypothesis 2: Employee engagement is positively impacted by personality characteristics.

Hypothesis 2a: Employee engagement is positively impacted by extraversion.

Hypothesis 2b: Employee engagement is positively impacted by agreeableness.

Hypothesis 2c: Employee engagement is positively impacted by conscientiousness.

Hypothesis 2d: Employee engagement is positively impacted by emotional stability.

Hypothesis 2e: Employee engagement is positively impacted by openness.

Hypothesis 3: Employee burnout is impacted by employee engagement and demographics.

Hypothesis 3a: Employee burnout is decreased by increased employee engagement.

Hypothesis 3b: Employee burnout is increased for CRNAs on the day shift.

Hypothesis 3c: Employee burnout is decreased for CRNAs who work fulltime.

Hypothesis 3d: Employee burnout is decreased as CRNAs years of experience increase.

METHODS

Sample

To be eligible for participation, the CRNA must be a member of the AANA who is in active practice. Exclusion criteria include: non-CRNAs (e.g., Student Registered Nurse Anesthetists) and non-practicing CRNAs. A randomized sample was collected via an electronic questionnaire that included validated scales to assess work climate, work context factors, personality dimensions, burnout, job satisfaction, and turnover intention. The average participant is 48 years old, has 16.5 years of experience, and worked for their current employer for 8.4 years. Of the 266 participants, 60% are male, 72% are employed fulltime, 18.1% work in an academic hospital, and 23.3% intend on leaving their current place of employment within the next two years. See Table 1: Descriptive Means.

Table 1: Descriptive Means

Variable	Mean	Std dev
age	47.93	11.29
male	0.60	0.49
fulltime	0.86	0.35
hours worked per week	40.92	9.96
work for > one employer	0.23	0.42
work preferred shift	0.94	0.24
anesthesiology residents	0.18	0.38
number of operating rooms	13.66	12.98
years experience as CRNA	16.53	21.66
years with current employer	8.43	11.59
overall job satisfaction	3.90	0.97
Extraversion	9.17	3.09
Agreeableness	11.43	2.08
Conscientiousness	13.24	1.22
Emotional stability	11.86	2.05
Openness	12.48	1.43
Skill variety	16.14	1.27
Task significance	18.41	0.90
Autonomy	16.98	1.17
Feedback from job itself	16.07	1.10
DISENGAGE	2.47	0.26
EXHAUST	2.77	0.21
burnout	2.62	0.17
Job satisfaction	3.90	0.99
Engagement	5.29	11.29

Measures

The electronic data collection questionnaire contained six sections: (1) demographic data, (2) turnover intent, (3) personality, (4) burnout, (5) work engagement, and (6) work context. Turnover intent was measured with a single item. We abridged four established instruments: the Ten-Item Personality Inventory, the Oldenburg Burnout Inventory (16 items), the Work & Well-Being Survey (9 items) to measure work engagement, and the Job Diagnostic Survey (12 items) to measure work context. Permission was obtained for use of the instruments.

Section One of the questionnaire included the following demographic and control variables: age, gender, employment status (part-time or full-time), number of hours worked per week, number of employers, shift work, preferred shift, presence or absence of anesthesiology residents, working in an academic hospital, number of operating rooms in the department, years worked for current employer, total number of employers, total years practicing anesthesia since certification, number of training days per five years, state of employment, and perceived ease of obtaining a similar or better job.

Section Two measured turnover intent by asking whether CRNAs intend to leave their job in the next two years (yes or no). It also included additional questions as to why the CRNA plans to leave their current job.

Section Three contained the Ten-Item Personality Inventory (TIPI). The TIPI measures the Big Five personality dimensions: extraversion, agreeableness, conscientiousness, emotional stability, and openness to new experiences.

Section Four contained the Oldenburg Burnout Inventory. The instrument measures exhaustion, both the physical and mental aspects, with a 16-item scale. Exhaustion refers to low levels of energy and mental resilience while working. Some sample items are: "I always find new and interesting aspects in my work" and "There are days when I feel tired before I arrive at work." Each item was scored 1=Strongly Disagree, 2=Disagree, 3=Agree, and 4=Strongly Agree. Negatively worded items were reverse scored. The burnout variable was the sum of the 16 items divided by 16. It is critical to note that since negatively worded items were reverse scored, high levels of the burnout variable actually indicate low levels of burnout.

Section Five contained nine items from the Utrecht Work Engagement Scale [10] [11]. The nine items were: "At my work, I feel bursting with energy," "At my job, I feel strong and vigorous," "I am enthusiastic about my job," "My job inspires me," "When I get up in the morning, I feel like going to work," "I feel happy when I am working intensely," "I am proud of the work that I do," "I am immersed in my work," and "I get carried away when I'm working." Each item was scored from 1=Never to 7=Every Day. The work engagement variable was the sum of the nine items divided by nine.

Section Six contained measures of work context from the Job Design Survey (JDS). The instrument measures work context, assessing four main dimensions: skill variety (3 items), task significance (3 items), autonomy (3 items), and feedback from the job itself (3 items) [5].

Section Seven included one overall job satisfaction question and four other job satisfaction questions from the Job Diagnostic Survey [4].

RESULTS

Some of our hypotheses regarding personality traits impact on employee engagement were supported by our analyses, refer to Table 2, columns 1 and 2. Hypothesis 2a was supported: extraversion had a positive and significant effect on employee engagement. Hypothesis 2b was *not* supported: agreeableness had *no* effect on employee engagement. Hypothesis 2c was *not* supported: conscientiousness did *not* have a positive effect, but had a *negative* and significant effect on employee engagement. Hypothesis 2d was *not* supported: emotional stability had *no* effect on employee engagement. Hypothesis 2e was supported: openness had a positive and significant effect on employee engagement.

Table 2: Engagement as a Function of Personality and Job Characteristics

Parameter	Engagement (personality)	Engagement (personality) Significant variables only	Engagement (job characteristics)	Engagement (job characteristics) Significant variables only	Engagement (job characteristics and personality)	Engagement (job characteristics and personality) Significant variables only
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Constant	3.325(0.743)**	3.819(0.334)**	2.43(0.446)**	2.99(0.333)**	1.055(0.803)	1.892 (0.730)**
Extraversion	0.054(0.021)**	0.058(0.021)**			0.052(0.020)**	0.051(0.020)**
Agreeableness	0.059(0.034)				0.045(0.032)	
Conscientiousness	-0.204(0.079)**	-0.176(0.024)*			-0.175(0.0767)*	-0.166(0.074)*
Emotional stability	0.0365(0.034)				0.020(0.033)	
Openness	0.243(0.068)**	0.260(0.066)**			0.214(0.0664)**	0.236(0.063)**
Skill variety			0.144(0.061)*	0.160(0.055)**	0.140(0.061)*	0.146(0.054)*
Task significance			0.151(0.093)		0.131(0.090)	
Autonomy			0.008(0.068)		0.024(0.066)	
Feedback			0.204(0.073)**	0.266(0.064)**	0.175(0.072)*	0.259(0.063)*
N	225	225	225	225	225	225
Adjusted R ²	0.1045	0.0895	0.1808	0.1649	0.2556	0.2379

Several of the hypotheses regarding job characteristics impact on employee engagement were supported by our analyses, refer to Table 2, columns 3 and 4. Hypothesis 1a was supported: skill variety had a positive and significant effect on employee engagement. Hypothesis 1b was *not* supported: task significance had *no* effect on employee engagement. Hypothesis 1c was *not* supported: autonomy had *no* effect on employee engagement. Hypothesis 1d was supported: feedback from the job itself had a positive and significant effect on employee engagement.

The statistically significant job characteristics and personality traits account for approximately 24% of the variation in employee engagement.

Several of the hypotheses regarding employee engagement and employee demographics impact on employee burnout were supported by our analyses; refer to Table 3, columns 1 and 2. For our measure of burnout, it is important to recall that negatively worded items were reverse scored so that *higher* values of the burnout variable actually indicate *low* levels of burnout. Hypothesis 3a was supported: burnout significantly *decreased* as employee engagement increased. Hypothesis 3b was supported: CRNAs working on the day shift had significantly *increased* burnout. Hypothesis 3c was not supported:

CRNAs who worked fulltime did *not* differ in employee burnout experienced. Hypothesis 3d was *not* supported: years of experience had *no* impact on employee burnout.

The statistically significant demographic variables and employee engagement account for 6.6% of the variation in employee burnout.

Table 3: Burnout as a Function of Engagement and Demographics

Parameter	Burnout	Burnout Significant variables only
	Column 1	Column 2
Constant	2.492(0.0789)**	2.535(0.070)**
Engagement	0.079(0.010)**	0.040(0.010)**
Day shift	-0.264(0.054)*	-0.133(0.051)**
Fulltime	0.105(0.031)	
Years experience	0.00006(0.0005)	
N	225	225
Adjusted R ²	0.069	0.066

DISCUSSION

Our results indicate that employee engagement is determined by some job characteristics and some dimensions of personality. In particular, in terms of job characteristics, our results show that higher levels of skill variety and higher levels of feedback are each associated with higher levels of employee engagement. These results are consistent with the literature that finds that low feedback contributes to disengagement [3]. Thus, to increase the engagement of nurse anesthetists in the United States, employers should structure jobs to have both more skill variety and more feedback.

Next, in terms of personality dimensions, we find that extraversion, conscientiousness, and openness are associated with employee engagement, but that agreeableness and emotional stability are not. These results with nurse anesthetists in the United States differ from a study of Dutch employees that found that neuroticism (i.e., reverse-scored emotional stability) predicts engagement [7]. However, another study of Dutch nurse anesthetists found that higher scores on personality characteristics of “easy going” and “receptive,” which are similar to our measures from the TIPI of openness and extraversion, decreased burnout [8]. We find that these personality traits impact burnout through their effects on employee engagement.

Our results also indicate that higher levels of employee engagement are associated with lower levels of employee burnout. These results are consistent with the literature that concludes that burnout and engagement are negatively related [2]. We also find that the shift on which the nurse works is a significant determinant of burnout. If some shifts feature more work demands than other shifts, then our results are consistent with the literature that finds that work demands is a determinant of burnout [6] [9].

CONCLUSIONS, LIMITATIONS, AND FURTHER RESEARCH

Taken together, our results suggest that to reduce employee burnout among nurse anesthetists in the United States, employers should seek to increase employee engagement by structuring jobs to feature

appropriate work demands, more skill variety, and more feedback. The literature then suggests that with less burnout, the nurse anesthetists will have better health and better job performance, resulting in both increases in the quality of patient care and decreases in cost [1].

The main limitation of our study is that the sample size of 270 is smaller than many in the literature. Repeating the survey with a much larger sample could provide additional statistically significant results.

We plan on additional related research in two areas. First, we plan to use different analysis methods to see if the results are sensitive to analysis methods. In particular, we plan on using both structural equation models and hierarchical models (incorporating information on the employer). Second, we plan on analyzing the burnout measure using the two separate subscales, exhaustion and disengagement.

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