

## ORIGINAL ARTICLE

# Predictors of nurses considering leaving the profession due to work-related stress in a large pediatric and women's hospital in the United States

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## ABSTRACT

Nurse retention is of extreme importance in modern healthcare given the ever-increasing nursing shortage and the high cost of training newly hired nurses. Research has repeatedly demonstrated that stress is strongly correlated with nursing staff turnover. This study examines the relationship of Secondary Traumatic Stress, Burnout, Compassion Satisfaction, personal life stress and nurse demographic characteristics with having considered leaving the nursing profession due to work-related stress. A survey was administered to nurses at a large pediatric and women's hospital in the southern United States. Bivariate analyses ( $n = 496$ ) indicated being Caucasian ( $p < .001$ ), working fewer hours per week ( $p = .009$ ), experiencing more personal life stress ( $p < .001$ ), having higher Burnout ( $p < .001$ ), or Secondary Traumatic Stress ( $p < .001$ ) scores or lower Compassion Satisfaction ( $p = .015$ ) scores were significantly associated with increased likelihood of having considered leaving the nursing profession. In multivariable logistic regression analysis, after variable selection, higher levels of Burnout ( $p < .001$ ), more life stress ( $p = .010$ ), being Caucasian ( $p < .001$ ) and working fewer hours ( $p = .004$ ) were all significantly associated with higher odds of considering leaving the nursing profession. Interventions to reduce work-related Burnout and help nurses cope with stressful life events are needed to increase retention of nurses in the profession.

**Key Words:** Nurse retention, Burnout, Secondary traumatic stress, Compassion satisfaction

## 1. INTRODUCTION

Based on current trends, some regions of the United States are expected to experience nursing shortages in the near future.<sup>[1]</sup> Although considerable attention has been applied to nurse retention, shortages do continue. A systematic literature review by Chan et al.<sup>[2]</sup> concluded that nurses' intention to leave their place of employment and the nursing profession is influenced by complex organizational (work environment, culture, commitment, work demands, and social support)

and individual factors (job satisfaction and burnout, with demographic factors showing inconsistent relationships with intention to leave across studies). Han, Trinkoff & Gurses<sup>[3]</sup> concluded that nurses with higher job demands, both physical and psychological, longer hours and perceived lower peer/supervisor support and autonomy were more likely to leave.

Gilmartin's review<sup>[4]</sup> of causal mechanisms to explain why nurses voluntarily leave jobs concluded that individual char-

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acteristics affecting psychological reactions to stressors in the workplace have an important influence on decisions to quit. The literature is rife with studies about moral distress,<sup>[5]</sup> compassion fatigue (CF),<sup>[6]</sup> workplace bullying and violence,<sup>[7]</sup> negative effects of shiftwork<sup>[8]</sup> and other issues that nurses face routinely. Sharma et al.<sup>[9]</sup> identified poor attitudes of physicians, insufficient financial compensation, and heavy workload to be associated with increased professional stress among nurses. Fiabane and colleagues<sup>[10]</sup> concluded that personal (including mental and physical health) and organizational (workload, control, rewards) factors are significantly associated with work engagement. Finally, nurses have lives outside of their jobs that may also influence their decision to remain in a job or even in the profession of nursing.<sup>[11]</sup>

While previous studies have firmly established a relationship between nurse stress and turnover, the body of literature examining the relationship between different kinds of employment-related and life-related stress on intention to leave the adult nursing profession remains incomplete,<sup>[12]</sup> and even sparse in pediatric nursing. The purpose of this study was to examine the relationship of work related stress, as measured by Secondary Traumatic Stress (STS), Burnout (BO), Compassion Satisfaction (CS), as well as personal life stressors and nurse demographic characteristics with having considered leaving the nursing profession due to work-related stress.

## 2. METHODS

The study was conducted at a large academic quaternary care pediatric and women's hospital in the southern United States. The current study was a secondary analysis of data originally obtained to assess presence of compassion fatigue among nurses employed at the hospital.<sup>[13]</sup> The survey was comprised of the Professional Quality of Life Scale (ProQOL) Version 5<sup>[14]</sup> and the Social Readjustment Rating Scale (SRRS),<sup>[15]</sup> additional demographic questions and a question about whether or not the respondent has considered leaving the nursing profession due to work-related stress. After receiving approval from the Institutional Review Board, a SurveyMonkey link was distributed via an email tree through nursing leaders. In order to be included in the study, respondents had to report that they provide direct patient care or are responsible for nurses who provide direct patient care.

### 2.1 Instruments

The ProQOL consists of the following three subscales: STS, BO, and CS. CS measures the positive aspect of the nurse's professional quality of life as a helper; BO is characterized by emotions such as anger, frustration, depression and exhaustion; STS manifests as fear and occupational stress.<sup>[14]</sup>

Stamm<sup>[14]</sup> conceptualizes compassion fatigue as a combination of high BO and STS. Likert scale responses to the ProQOL items were used to compute subscale scores as described by Stamm (2010, p 15-16). Cronbach's alpha was used to assess the reliability of the three ProQOL subscales. The SRRS<sup>[15]</sup> measures personal life stress by assigning numerical weights to life changing events that have occurred in the past 12 months. Stamm<sup>[14]</sup> reports  $\alpha = 0.88$  for CS,  $\alpha = 0.81$  for STS and  $\alpha = 0.75$  for BO.

### 2.2 Data analysis

Relationships of the three ProQOL subscale scores, SRRS scores and nurse employment and demographic characteristics with having considered leaving the nursing profession due to work-related stress were investigated. Initially, logistic regression analysis was used to examine each individual independent variable's bivariate association with having considered leaving the nursing profession due to work-related stress. A multivariable logistic regression model followed to include all variables exhibiting a significant bivariate association. Backward variable selection was used to arrive at the final regression model for which all predictors were significantly associated with having considered leaving the nursing profession due to work-related stress. The Hosmer-Lemeshow goodness-of-fit test was used to check the regression model for lack of fit. SAS version 9.4 (SAS Institute Inc., Cary, North Carolina) was used for all data analysis.

Using the method for sample size estimation due to Hsieh,<sup>[16]</sup> the 496 study subjects provided 81% statistical power to detect ( $\alpha = 0.05$ ) a true odds ratio of 1.33 for the bivariate association of a normally distributed independent variable with having considered leaving the nursing profession due to work related stress, when comparing the value of the independent variable one standard deviation above the mean to the reference point mean.

## 3. RESULTS

The human resources department estimated that there were 3,300 nurses employed at the hospital when the survey was administered. A total of 864 participants took at least some of the survey, with only 496 responding to all ProQOL and SRRS items. These 496 participants' data were analyzed for the current study, yielding a response rate of  $496/3,300=15\%$ .

The majority of subjects were female (98%) and Caucasian (58%) with an average age of 40.3 years (see Table 1). One hundred seventy-nine (36%) of the 496 of respondents indicated that they had considered leaving the nursing profession due to work-related stress. Using the guidelines for interpreting Chronbach's alpha provided by DeVellis,<sup>[17]</sup> the CS ( $\alpha = 0.72$ ) and STS ( $\alpha = 0.77$ ) subscales of the ProQOL demon-

strated “acceptable” reliability while the internal consistency of the BO subscale ( $\alpha = 0.53$ ) was “poor”.

**Table 1.** Respondent characteristics

Characteristic	Frequency <sup>†</sup> (%)
<b>Gender (n = 488)</b>	
• Female	478 (98)
• Male	10 (2)
<b>Race (n = 493)</b>	
• African American	50 (10)
• Asian	86 (17)
• Caucasian	285 (58)
• Hispanic/Latino	58 (12)
• Other	14 (3)
<b>Education level (n = 495)</b>	
• Certificate	4 (1)
• Diploma	11 (2)
• Associate’s degree	72 (15)
• Bachelor’s degree	335 (68)
• Master’s degree	65 (13)
• Post-master’s degree	4 (1)
• Doctorate	4 (1)
<b>Patient care setting (n = 494)</b>	
• Inpatient	379 (77)
• Outpatient	115 (23)
<b>Typical work shift (n = 490)</b>	
• Days	326 (67)
• Nights	150 (31)
• Combination	14 (3)
<b>Certified in specialty area (n = 491)</b>	
• Yes	232 (47)
• No	259 (53)
<b>Considered leaving the nursing profession due to work-related stress (n = 496)</b>	
• Yes	179 (36)
• No	317 (64)
Characteristic	Mean $\pm$ SD (range)
• Age in years (n = 487)	40.3 $\pm$ 11.6 (22-67)
• Years practicing as a nurse (n = 477)	13.8 $\pm$ 10.7 (0-46)
• Hours worked in a typical week (n = 495)	38.1 $\pm$ 8.9 (3-84)
• Social Readjustment Rating Scale score (n = 496)	136.4 $\pm$ 96.0 (0-482)
• ProQOL Compassion Satisfaction score (n = 496)	33.8 $\pm$ 7.0 (20-50)
• ProQOL Burnout score (n = 496)	28.4 $\pm$ 5.5 (12-41)
• ProQOL Secondary Traumatic Stress score (n = 496)	27.4 $\pm$ 6.4 (11-43)

Note. <sup>†</sup>Sample sizes are not the same for each characteristic because a different number of responses were missing

Bivariate analyses indicated being Caucasian ( $p < .001$ ), working fewer hours per week ( $p = .009$ ), experiencing more

personal life stress ( $p < .001$ ), higher ProQOL BO ( $p < .001$ ), or STS ( $p < .001$ ) scores or lower CS ( $p = .015$ ) scores was significantly associated with increased likelihood of having considered leaving the nursing profession (see Table 2). After backward variable selection, only Caucasian race ( $p < .001$ ), number of hours worked in a typical week ( $p = .004$ ), personal life related stress ( $p = .010$ ) and BO ( $p < .001$ ) were significantly related to having considered leaving the nursing profession due to work-related stress. Specifically, Caucasian nurses had more than double the odds of having considered leaving the nursing profession due to work related stress compared to other races after controlling for the other variables in the regression model (adjusted odds ratio 2.037, 95% confidence interval: 1.359-3.054). After controlling for the other variables in the model, each additional hour worked per week decreased the odds of having considered leaving the profession due to work-related stress by 3.4% (adjusted odds ratio 0.966, 95% confidence interval: 0.943-0.989), while every point increase in the ProQOL BO scale increased the odds by 8.8% (adjusted odds ratio 1.088, 95% confidence interval: 1.046-1.131) and every point increase in the SRRS increased the odds by 0.3% (adjusted odds ratio 1.003, 95% confidence interval: 1.001-1.005). The logistic regression model as a whole contributed significantly to the prediction of having considered leaving the profession due to work-related stress ( $p < .001$ ). This regression model did not exhibit significant lack of fit ( $p = .602$ ) so the results can be considered to be valid.

#### 4. DISCUSSION

In a multivariable analysis to adjust for potential confounders, we found that higher levels of BO, more life stress, being Caucasian and working fewer hours were all associated with significantly higher odds of considering leaving the nursing profession. Higher levels of BO manifest as frequently feeling trapped in the job as a nurse, worn out by work as a nurse, overwhelmed by the work load, bogged down by the system and losing sleep due to being traumatized by patients’ experiences. On the other hand, BO levels are reduced by frequently feeling that you are a caring person, you are the person you always wanted to be, feeling connected to others, being happy to have chosen this work, and having beliefs that sustain you.<sup>[14]</sup>

Respondents were asked if they had any comments based on their personal experiences as a nurse. Many mentioned that they became a nurse because they are a caring person who enjoys helping people. Many also remarked that stress from job frequently spills over into their personal life and even affecting physical health. Several comments described specific plans to leave the nursing profession to pursue another career.

In contrast, one nurse remarked, “I have often contemplated leaving the nursing profession but stay because I do consider it a calling that I could not leave without regret. Someone needs to do this work, and I want it to be someone who cares. It might as well be me.”

**Table 2.** Comparison of respondents who have versus have not considered leaving the nursing profession due to work-related stress

Characteristic	Proportion <sup>†</sup> (%)		p-value
	Have not Considered Leaving Due to Work-Related Stress (n = 317)	Considered Leaving Due to Work-Related Stress (n = 179)	
Female	304/313 (97)	174/175 (99)	.121
Caucasian	162/317 (51)	123/179 (69)	< .001*
Bachelor’s degree or higher	263/317 (83)	145/179 (81)	.625
Inpatient care setting	241/316 (76)	138/178 (78)	.750
Day shift	203/317 (64)	123/179 (69)	.320
Certified in specialty area	153/316 (48)	79/175 (45)	.486

  

Characteristic	Mean ±SD		p-value
	Considered Leaving Due to Work-Related Stress (n = 179)	Have not Considered Leaving Due to Work-Related Stress (n = 317)	
Age in years	(n = 177) 39.8 ± 10.9	(n = 310) 40.6 ± 12.0	.526
Years practicing as a nurse	(n = 174) 13.1 ± 9.4	(n = 303) 14.2 ± 11.4	.317
Hours worked in a typical week	(n = 179) 36.6 ± 8.9	(n = 316) 38.9 ± 8.8	.009*
Social Readjustment Rating Scale score	(n = 179) 156.8 ± 96.4	(n = 317) 124.9 ± 93.9	< .001*
ProQOL Compassion Satisfaction score	(n = 179) 32.8 ± 5.7	(n = 317) 34.4 ± 7.5	.015*
ProQOL Burnout score	(n = 179) 30.1 ± 4.9	(n = 317) 27.5 ± 5.6	< .001*
ProQOL Secondary Traumatic Stress score	(n = 179) 28.8 ± 6.3	(n = 317) 26.7 ± 6.4	< .001*

Note. <sup>†</sup>Sample sizes are not the same for each characteristic because a different number of responses were missing; \*Indicates a statistically significant association with having considered leaving the nursing profession due to work-related stress

Historically, published research has repeatedly shown that higher levels of job stress are associated with nurse attrition.<sup>[18–22]</sup> Consistent with our findings, a systematic review of systematic reviews about turnover determinants identified stress and burnout, lower job satisfaction and commitment as strong determinants of job turnover.<sup>[12]</sup> In a qualitative study, Happell et al.<sup>[23]</sup> identified the following as specific sources of occupational stress among nurses: a high workload, lack of physician availability, management not being supportive, problems with the human resources department, co-worker conflict and communication issues, demands of patients’ relatives, working night shift, parking frustrations, patient handoff procedures and lack of a dedicated break area. And looking beyond workplace factors, Viotti and Converso<sup>[11]</sup> identified that increased negative qualitative and quantitative contexts have significant influence on healthcare worker behavior outside of work. Stacciarini and Troccoli<sup>[24]</sup> found measures of general psychological and physical health to be significantly correlated with nurses’ job satisfaction. This could explain the significant association observed in the current study between personal life stress and having

considered leaving the nursing profession. Although it may appear intuitive, we are aware of no previous nursing study having demonstrated a relationship between stress due to life changing events and intention to leave the nursing profession. As one respondent said, “All of your efforts and emotions should be directed at your patients when you are at work, and inversely then directed at yourself to heal from this exhausting care - however life adds many other factors into this equation daily and it becomes difficult to manage.” Other respondents described specific stressful events in their personal life that compromised their ability to do their job as a nurse. It would seem that our minds cannot easily compartmentalize the source of stress, so a stressful personal life could sensitize a nurse to feeling compelled to leave the profession due to additional stress experienced in the work place.

Regarding the inverse association between the number of hours worked per week and having considered leaving the profession, it seems reasonable that nurses who are so dissatisfied with their job that they are considering leaving the

profession would choose to work fewer hours. For many participants, the reduced hours working as a nurse could be the manifestation of a decreased commitment to nursing, perhaps because working as a nurse is not the top priority due to other competing interests such as another job or family life. Also some nurses who live in households with a high income irrespective of the nursing salary would surely reduce the number of hours worked since the financial pressure to work more is not present.

We can only speculate about the association of race with having considered leaving the nursing profession. In the context of research, race is often confounded with other socioeconomic indicators,<sup>[25]</sup> so perhaps these other factors, instead of race, are causally related to considering leaving the profession. Perhaps Caucasian nurses' household incomes are higher on average so continuing to work as a nurse is not always necessary.

Leveck and Jones<sup>[26]</sup> reported that "Demographic and work experience variables influenced intention to leave and turnover through the effects of felt stress, job satisfaction, and organizational commitment." In fact, in contrast to the current study, a number of other studies have found that years of nursing experience was inversely correlated with intention to leave.<sup>[18,19,27,28]</sup> At the institution where this study was conducted, human resources data indicates that nurses are much more likely to leave within the first 6 months of being hired. So it is interesting that there was no association found in this study between years of nursing experience and intention to leave the nursing profession due to work-related stress. It could be that the newer nurses who leave the institution are merely moving to other health care facilities. But previous research suggests that the stress of transitioning into a nursing career can be a reason for leaving the profession.<sup>[29-31]</sup> When considering interventions to prevent the loss of new nurses, Trepanier et al.<sup>[32]</sup> estimated that having a new graduate nurse residency program would decrease the 12-month turnover rate 6%-36%, reduce contract labor costs \$5,490-\$19,099 per average daily census and yield a net savings of \$10-\$50 per patient day compared to traditional orientation methods.

As mentioned above, and a point brought up in a number of nurses' open-ended comments, conflict with physicians can be a substantial source of stress among nurses. Several studies<sup>[9,33,34]</sup> have found that more senior nurses are better able to handle conflict with physicians which results in their experiencing less stress. So it would seem that teaching less experienced nurses strategies to effectively deal with conflict with physicians could be beneficial. Along these lines, a recent systematic review<sup>[12]</sup> found evidence for effectiveness

of only two interventions to increase nurse retention: 1) preceptorships for new graduates and 2) leadership for group cohesion. Both of these interventions should help to mitigate the adverse effects of work-related stress on relatively inexperienced nurses.

The costs associated with nurse attrition can be very high.<sup>[35]</sup> Thus any interventions that can prevent nurses from leaving would be very beneficial to the institution. Given the established links between nurse stress, BO and turnover, targeted interventions to mitigate the harms of BO and life stress should be considered. A surprisingly simple change like recognizing nurses' performance has been shown to reduce the effects of job stress and increase intention to stay.<sup>[36]</sup> Any effective method for reducing BO and helping nurses to cope with stress should be welcomed. A meta-analysis of 31 studies involving 14,567 nurses concluded that decreased job stress was the best predictor of job satisfaction.<sup>[37]</sup> Potter et al.<sup>[38]</sup> implemented a five week CF resiliency program that significantly reduced ProQOL STS scores among oncology nurses.

Management leadership style has been shown to be directly related to nurse retention.<sup>[26,27]</sup> The importance of supportive leadership was also commented upon in numerous open-ended responses. For example, one participant said, "I think inherently the work that we do is taxing and exhausting but so very rewarding. However, unfortunately, I learned that the reward can be overshadowed by this exhaustion when you add the burdens of nonsupportive leadership. Feeling supported and receiving the necessary tools to flourish and not flounder in your role as a nurse is imperative to maintaining that work/life balance." It would seem that training nurse managers to be more supportive and complimentary toward their staff would improve nurse morale and, as a result, increase retention.

### Limitations of the study

This study is not without limitations. The response rate was lower than desired, but realistically not lower than expected given the length of the survey. Efforts were made to increase participation by giving short presentations about the study at various nursing shared governance meetings and posting flyers advertising the study in non-patient areas. Additionally, an email reminder encouraging participation was sent one week after the initial survey invitation. However, nurse leaders at the institution have remarked that most institutional emails are not read by a large proportion of the nurses. Further research is needed to determine if the findings generalize to nurses employed at other institutions given the low response rate and unique setting of this study. The poor internal consistency of the ProQOL BO subscale might also

be of concern, although a study of 221 critical care nurses<sup>[39]</sup> observed an even lower reliability for this subscale ( $\alpha = 0.45$ ).

## 5. CONCLUSIONS

The purpose of this study was to examine the relationship of STS, BO, CS, personal life stress and nurse demographic characteristics with having considered leaving the nursing profession due to work-related stress. No other published study has examined the association of the three ProQOL subscales and the SRRS with nurses' intention to leave the profession. Our finding that stress due to recent life changing events correlates with increased incidence of intention to leave the nursing profession is novel. Based on the findings of this study, healthcare organizations can create assessments to identify nurses who are at risk for leaving the profession due to work-related stress. Then counseling and interventions can be implemented to help such nurses cope with life stress and develop strategies to reduce symptoms of BO. Fu-

ture research is warranted with regard to helping nurses to cope with stress, both job related and general life stress, and studying the impact of such interventions on nurse retention. Such research is necessary in modern times when employers are realizing that taking a holistic and proactive approach to nursing employees' health will improve retention.

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## STUDY APPROVAL

The study (protocol H-36167) was approved by the Baylor College of Medicine Institutional Review Board on January 28, 2015.

## CONFLICTS OF INTEREST DISCLOSURE

The authors declare they have no conflicts of interest.

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