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Advanced Practice Registered Nurse Burnout in Magnet Hospitals

Opportunities for Organizational Intervention

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OBJECTIVE: To determine modifiable organizational factors associated with advanced practice RN (APRN) burnout in Magnet[®]-designated hospitals to guide organizational interventions to improve APRN well-being and retention. **METHODS:** Cross-sectional study of work environments of 50 US Magnet hospitals and the associated well-being of 21 855 of their clinicians (APRNs, physician assistants, physicians [MDs], RNs).

RESULTS: Overall, 37% of APRNs experienced high burnout compared with 34% of MDs ($P < 0.05$) and 49% of RNs ($P < 0.001$); additionally, 32% of APRNs intended to leave their jobs. APRN burnout was significantly lower in organizations that minimized chaotic working conditions, provided APRNs more control over their workloads, involved APRNs in shared governance, improved clinician and management relations, and improved interprofessional teamwork.

CONCLUSIONS: Well-being and retention of APRNs in Magnet hospitals require their greater engagement in organization processes and systems that improve work environments.

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The role of advanced practice RNs (APRNs) continues to grow in the US healthcare system, including in hospital settings.¹ The majority of APRNs employed in hospitals are nurse practitioners (NPs), a workforce that has more than doubled since 2010.² They play key roles in delivering high-quality healthcare, and their presence in hospitals is associated with better patient and nurse outcomes including lower 30-day patient mortality and lower burnout among RNs.³ Less is known about APRNs' own well-being and retention and how their well-being and retention are impacted by potentially modifiable organizational factors related to their work.

Most studies of inpatient APRN burnout have been conducted in single settings using convenience samples and did not link specific organizational practices to APRN burnout.⁴⁻⁷ In a cross-sectional survey

of 433 APRNs practicing at a single academic medical center, 26% of participants reported that they were currently experiencing burnout, and another third had formerly experienced burnout.⁶ A survey of 154 advanced practice providers (APPs; defined as APRNs and physician assistants [PAs]) working at 16 Mayo Clinics in 4 states during the pandemic found that compared with physician colleagues, APPs had lower odds of well-being that included measures of mental health, social activities, and relationships.⁸ In a qualitative study of more than 700 open text answers to a question about what their organization could do to help manage stress, APPs desired increased autonomy, decreased role ambiguity, improved organizational processes and management practices, and improved work relationships.⁹ However, large-scale studies of APRNs and their clinical practices across multiple inpatient settings are lacking, and little is known specifically about APRN well-being in Magnet[®] hospitals, where much research shows that RN outcomes including burnout, job dissatisfaction, and intent to leave are significantly better than in non-Magnet hospitals.^{10,11}

Hospitals with lower levels of nurse burnout and with more supportive work environments have better quality of care and patient outcomes.¹²⁻¹⁴ A supportive work environment is characterized by collegial relationships with administrators and the interdisciplinary team, freedom to make important patient care decisions, and involvement in hospital governance. Primary care practices with supportive work environments are associated with lower NP burnout,^{15,16} but a gap exists for APRNs working in hospital settings. With a growing APRN workforce, more research is needed to understand their well-being and working conditions, including their work environment.

The US Clinician Well-being Consortium conducted 1 of the largest studies to date examining the extent of burnout, anxiety, depression, job dissatisfaction, and intent to leave among clinicians in 50 Magnet hospitals.^{12,17} This is the 1st report from that large-scale multicenter study of the outcomes of APRNs. The aims were to:

- (1) Compare measures of well-being (eg, burnout, intent to leave, anxiety, depression) between types of clinicians (eg, APRNs, PAs, nurses, and physicians).
- (2) Explore how APRN burnout varies across hospitals and what modifiable organizational features are associated with reduced APRN burnout to inform efforts to improve the well-being and retention of APRNs in hospital settings.

Methods

Design and Setting

This is a cross-sectional study of 50 US Magnet hospitals using their clinicians as informants about their

hospitals' work environment and their own well-being. Anonymous surveys were distributed via email from January to June 2021, and all APRNs, PAs, physicians (MDs), and RNs in each hospital were invited to participate. Some 21 855 clinicians, an average of 437 clinicians per hospital, participated for an overall survey response rate of 26%. Survey participants responded to standardized, validated instruments regarding their physical and psychological well-being and mental health and reported on various features of their work environments. Survey methodology details have been previously published.¹² This study was deemed exempt by the University of Pennsylvania's institutional review board (#844040).

Sample

The primary analytic sample for this article included 1143 APRNs working in 50 Magnet hospitals. Comparison groups included PAs (n = 808), MDs (n = 5557), and RNs (n = 14 454). On average, the numbers of responses for each hospital were 29 APRNs, 16 PAs, 107 MDs, and 289 RNs.

Study Variables

Demographics and Workload Characteristics

Survey participants provided information on age, sex, years worked, and whether they worked full time. To capture various aspects of their workload, participants reported days on call per month, number of trainees they supervised during the week, and how many patients they cared for (inpatient, outpatient, and via telehealth) on a typical day. A composite workload variable was created from the sum of patients seen per day.

Well-being Measures

Burnout was measured using the 9-item emotional exhaustion subscale of the Maslach Burnout Inventory, a valid, reliable, and widely used measure of burnout.^{13,18,19} High burnout was defined as a score of ≥ 27 .²⁰ Job dissatisfaction was measured with a single item question used previously in many studies asking, "How satisfied are you with your current job?"^{14,21} Intent to leave was measured with single item, "If possible, would you leave your hospital within the next year as a result of job dissatisfaction?"¹⁴ Anxiety was measured with the 2-item Generalized Anxiety Disorder (GAD2) scale.²² The 2-item Patient Health Questionnaire (PHQ-2) scale was used to measure depression.²³ Respondents were classified as positive if their scores for anxiety or depression were 3 or greater. Overall sleep quality was assessed using the global quality item from the Pittsburgh Sleep Quality Index.²⁴ Overall health was assessed using the global health rating from the Short Form-8 Health Survey.²⁵ Job stress and work-life balance were measured as single item global assessments.²⁶ Joyful workplace was

measured using the Mini-Z 2.0, a validated measure of workplace wellness and satisfaction. Respondents were categorized as having a joyful workplace if their score was ≥ 40 (range, 10-50).²⁷

Work Environment and Related Factors

Using a global measure of the work environment, respondents rated their work environment on a 4-point Likert scale from “poor” to “excellent.” Nurse staffing was measured by asking respondents the degree to which they agreed there were enough nurses to care for patients on a 4-point Likert scale ranging from “strongly agree” to “strongly disagree.” Items from the validated Practice Environment Scale of the Nurse Work Index were used to describe aspects of the work environment.^{28,29} Respondents were asked whether they would recommend their hospital as a good place to work or to friends and family needing care using a 4-point Likert scale ranging from “strongly agree” to “strongly disagree.”³⁰ Respondents were asked how much time they spend with the electronic health record (EHR) and whether the EHR added frustration to their day. All items were dichotomized to indicate the percentages of APRNs who disagreed with each statement and reported at the individual APRN level. Hospital-level measures of the work environment were defined as the proportion of nurses who disagreed that each aspect of the work environment was present, and for the single-item work environment measure, those who reported poor/fair work environments.³¹

Data Analysis

Well-being measures were aggregated to the hospital-level for each clinician type and compared with one another using *t* tests. To examine factors related to APRN burnout, descriptive statistics were calculated using χ^2 for categorical and *t* test for continuous variables. Values for workload measures were included only if they were greater than 0. Logistic regression models were fit to determine the effect of demographic, workload, and work environment factors on burnout. Predictor variables were included that differed significantly on burnout at the $P < 0.20$ level.³² Models were fit to estimate the odds of APRN burnout accounting for demographics (model 1), demographics plus hospital-level work environment (model 2), and demographics plus hospital-level work environment plus other modifiable organizational features (eg, control over workload, teamwork, and time spent on the EHR) and total patients seen daily (model 3). All models accounted for clustering at the hospital level. Analyses were conducted using STATA version 18 (College Station, Texas).

Results

The primary sample included 1143 APRNs working in 50 Magnet hospitals and was compared with 808 PAs, 5557 MDs, and 14 454 RNs. As noted in Table 1, APRNs and PAs experienced similar rates of burnout and fared similarly on well-being measures. Thirty-seven percent of APPs experienced high burnout compared with 34% of physicians ($P < 0.05$) and 49% of nurses ($P < 0.001$). Almost a third of APPs reported intentions to leave their jobs within a year. Well-being outcomes for APPs were significantly worse than for MDs and significantly better than for RNs. One-third of APPs judged their own health as fair or poor, and close to 60% reported poor sleep quality.

Because there were no significant differences between APRNs and PAs on well-being measures, additional analyses focus on APRNs. As shown in Table 2, the burnout rate was higher among younger APRNs, those who worked in emergency departments (EDs) and ICUs, and those who were working full time. APRNs experiencing high burnout cared for an additional patient per day compared with those who did not experience high burnout ($P < 0.05$). Among APRNs who cared for patients via telehealth, those experiencing high burnout took care of 2.5 more patients per day compared with APRNs who were not

Table 1. Comparing Average Percentages of Clinician Burnout and Well-being Between APRNs and PAs, and Between MDs, APPs, and RNs

	Within APPs		Between Clinicians		
	APRNs	PAs	MDs	APPs	RNs
Survey respondents, n	1436	808	5157	2244	14 454
High burnout	38	36	34	37 ^a	49 ^b
Job dissatisfaction	13	14	16	14 ^a	23 ^b
Intent to leave	32	32	24	32 ^c	41 ^b
Anxious	20	18	14	19 ^c	25 ^b
Depressed	13	11	9	12 ^c	17 ^b
Poor overall health	31	33	30	32	46 ^b
Poor sleep quality	57	58	53	57 ^d	68 ^b
Great deal of job stress	43	46	46	44	55 ^b
Poor work-life balance	25	24	38	25 ^c	18 ^b
Joyful workplace	9	7	9	8	6

High burnout is defined as the percentage of providers in a hospital who scored ≥ 27 on the emotional exhaustion subscale of the Maslach Burnout Inventory. Measures of anxious (GAD-2 ≥ 3), depressed (PHQ-2 ≥ 3), poor overall health, and poor overall sleep (very poor/fair) are self-reported screenings and not intended to be diagnostic. APRN and RN data derived from 50 hospitals. PA data derived from 49 hospitals. MD data derived from 48 hospitals.

^a $P < 0.05$ comparing MDs and APPs.

^b $P < 0.001$ comparing APPs and RNs.

^c $P < 0.001$ comparing MDs and APPs.

^d $P < 0.01$ comparing MDs and APPs.

Table 2. Comparing APRN Demographic and Work Characteristics by Level of Burnout

Characteristics	All APRNs	High Burnout (38% [n = 516])	Low Burnout (62% [n = 844])	P
Demographics				
Age, mean (range)	44 (25-69)	42 (26-67)	45 (25-69)	<0.001
Sex, % (n)				0.440
Female	91 (1106)	38 (412)	62 (681)	
Male	9 (110)	34 (37)	66 (72)	
Work characteristics				
Unit type, % (n)				0.001
ED	4 (57)	49 (27)	51 (28)	
ICU	17 (242)	48 (111)	52 (118)	
Medical/surgical	51 (729)	35 (242)	65 (447)	
Other	28 (403)	35 (135)	65 (248)	
% Work full time, % (n)				0.050
Yes	90 (1286)	39 (475)	61 (750)	
No	10 (144)	30 (39)	70 (91)	
Workload, mean (range)^a				
Days on call per month	5.8 (1-31)	6.1 (1-30)	5.5 (1-31)	0.460
No. of trainees supervising per week	1.9 (1-20)	1.9 (1-18)	1.9 (1-20)	0.818
Patients seen in the hospital per day	10.1 (1-40)	10.4 (2-40)	9.9 (1-40)	0.374
Patients seen via telehealth per day	4.1 (1-40)	5.0 (1-40)	3.5 (0-20)	0.017
Total patients across settings per day	11.9 (1-76)	12.6 (2-62)	11.5 (1-76)	0.011

Row percentages are reported for categorical variables.

^a Values <1 for workload variables were excluded; therefore, sample size varied for each variable: days on call per month (n = 189), number of trainees supervising per week (n = 434), patients seen in the hospital per day (n = 952), patients seen outpatient per day (n = 462), patients seen via telehealth per day (n = 208), and total patients across settings per day (n = 1243).

experiencing high burnout ($P < 0.05$). APRN burnout was not associated with on-call hours or with precepting trainees.

Table 3 displays APRN work environment and related factors by level of APRN burnout. APRNs with high burnout worked in hospitals with less favorable

Table 3. Comparing APRN Work Environments and Related Factors by Level of Burnout

Characteristics	Total APRNs	High Burnout	Low Burnout	P
Hospital-level staffing adequacy and global work environment, mean % agreement (range)				
Not enough nurses to care for patients	37 (0-72)	40 (0-72)	38 (0-72)	.036
Work environment fair/poor	24 (0-62)	27 (0-62)	25 (0-62)	<0.001
Autonomy, % (n)				
My control over my workload is poor or marginal	34 (427)	67 (288)	33 (139)	<0.001
Lack freedom to make important patient care decisions	15 (190)	72 (136)	28 (54)	<0.001
Overall quality of work environment, % (n)				
Work environment chaotic or tends to be chaotic	49 (608)	58 (353)	42 (255)	<0.001
No clear philosophy of patient centeredness	13 (162)	79 (128)	21 (34)	<0.001
Would not definitely recommend hospital as a place to work	54 (737)	55 (406)	45 (331)	<0.001
Would not recommend hospital to friends or family needing care	5 (62)	77 (48)	23 (14)	<0.001
Management/clinician relations, % (n)				
Not confident management will act to resolve problems in patient care that clinicians identify	49 (609)	53 (321)	47 (288)	<0.001
Administration does not listen to clinician concerns	34 (433)	65 (283)	35 (150)	<0.001
Do not agree my values are well aligned with management	28 (360)	68 (246)	32 (114)	<0.001
Clinicians are not involved in hospital governance	28 (347)	65 (226)	35 (121)	<0.001
Not confident patients can manage after discharge	52 (624)	48 (301)	52 (323)	<0.001
Professional relations, % (n)				
Physicians, nurses, advanced practice providers do not have good working relations	12 (151)	73 (111)	26 (40)	<0.001
Teamwork poor/marginal	32 (401)	60 (242)	40 (159)	<0.001
EHRs, % (n)				
Time spend on EHRs is moderately high to excessive	71 (895)	42 (374)	58 (521)	<0.001
EHR adds frustration to day	38 (481)	45 (217)	55 (264)	<0.001

Row percentages are reported for categorical variables. Staffing adequacy and work environment are measured at the hospital level; the other work environment features are measured at the individual APRN level.

environments, more frequently characterized as not having enough nurses. APRNs experiencing high burnout reported less autonomy over their practice and less favorable relationships with management and other clinicians and were more frustrated with the EHR. For example, 67% of burned-out APRNs reported poor or marginal control over their workloads compared with 33% of APRNs with low burnout ($P < 0.001$), and 65% of burned-out APRNs said clinicians were not involved in hospital governance compared with 35% with low burnout ($P < 0.001$).

Table 4 displays multilevel regression models estimating the odds of APRN burnout that accounted for demographics, workload, and work environments. In model 1, the odds of burnout decreased by 2% for each additional year of age of the APRN ($P < 0.01$), and APRNs working in ICUs had 66% higher odds of burnout compared with APRNs working in medical/surgical units ($P < 0.01$). Associations remained significant when accounting for hospital-level measures of the APRN work environment (model 2). Administration not listening to clinician concerns ($P < 0.05$) and clinicians not involved in hospital governance ($P < 0.01$) were associated with higher odds of APRN burnout (18% and

23%, respectively). When accounting for additional modifiable work environment characteristics (model 3), the relationship between age and unit type to burnout was no longer significant. The relationship between clinicians not involved in hospital governance and burnout remained (odds ratio, 1.21; 95% confidence interval, 1.02-1.45; $P < 0.05$). There were significant associations for higher odds of burnout (72% to 300% higher odds) and poor/marginal control over workload, chaotic work environment, lack of confidence in management to resolve problems, values not aligned with leadership, and poor/marginal teamwork. In model 3, there was no relationship between total number of patients seen daily and APRN burnout.

Discussion

This study identifies actionable interventions that if implemented are likely to reduce APRN burnout and potentially improve their retention in hospital practice. The findings of higher burnout in younger APRNs and those practicing in ICUs were consistent with other literature about burnout among nurses and other healthcare providers.^{17,33,34} These findings

Table 4. Coefficients From Multilevel Models Estimating the Odds of APRN Burnout That Account for Demographics, Workload, and Work Environment Characteristics of APRNs

	Model 1	Model 2	Model 3
Demographics			
Age	0.98 (0.96-0.99) ^a	0.98 (0.96-0.99) ^a	0.98 (0.97-1.01)
Unit (reference: medical/surgical)			
ED	1.68 (0.98-2.88)	1.48 (0.84-2.58)	1.07 (0.59-1.92)
ICU	1.66 (1.15-2.38) ^a	1.60 (1.11-2.31) ^b	1.33 (0.86-2.05)
Other	0.88 (0.64-1.21)	0.89 (0.65-1.21)	0.77 (0.54-1.11)
APRN hospital-level measures of work environment			
Not enough nurses	—	0.88 (0.77-1.02)	0.92 (0.77-1.10)
Lack freedom to make important care decisions	—	1.09 (0.94-1.25)	1.02 (0.85-1.23)
No clear philosophy of patient centeredness	—	0.99 (0.81-1.22)	0.98 (0.76-1.27)
Administration does not listen to clinician concerns	—	1.18 (1.01-1.40) ^b	1.05 (0.85-1.30)
Clinicians are not involved in hospital governance	—	1.23 (1.07-1.40) ^a	1.21 (1.02-1.45) ^b
MDs, RNs, and APPs do not have good working relations	—	1.02 (0.83-1.25)	1.05 (0.82-1.34)
Autonomy			
Poor/marginal control over workload	—	—	3.09 (2.31-4.13) ^c
Work environment chaotic	—	—	3.22 (2.50-4.16) ^c
Management/clinician relations			
Not confident management will act to resolve problems	—	—	1.48 (1.14-1.93) ^a
Do not agree my values aligned with management	—	—	2.68 (1.93-3.73) ^c
Professional relations			
Teamwork poor/marginal	—	—	1.72 (1.27-2.34) ^a
EHRs			
Time spend on EHRs is moderate to excessive	—	—	1.13 (0.82-1.55)
EHR adds frustration to day	—	—	1.19 (0.90-1.57)
Total patients seen daily	—	—	1.00 (0.98-1.02)

Hospital-level work environment predictors are standardized. All models account for clustering at the hospital level. Each column represents a multivariate regression model. Model 1 includes age and unit worked; model 2 includes model 1 factors and hospital-level work environment factors; model 3 includes models 1 and 2 factors and autonomy, management/clinician relations, professional relations, EHR factors, and total patients seen daily.

^a $P < 0.01$.

^b $P < 0.05$.

^c $P < 0.001$.

extend this work by showing that high burnout was most prevalent among younger APRNs and those practicing in ICUs, but their burnout was attenuated by modifiable factors such as greater control over workload, less-chaotic work environments, greater confidence in management to resolve problems in patient care, and strong teamwork. Ultimately, higher observed burnout of younger APRNs and APRNs practicing in ICUs (and probably those practicing in EDs for which the sample size was too small to detect significant differences) was due to modifiable organizational factors that are within the control of organizations to fix. The results suggest that it is not inevitable that younger APRNs and those who practice in ICUs will experience higher burnout because the underlying factors contributing to their burnout can be addressed.

High burnout rates of APRNs in Magnet hospitals are worthy of targeted attention and intervention. More than one-third of APRNs working in Magnet hospitals were burned out, intended to leave, and rated their health as poor. Forty-three percent experienced a great deal of job stress, and 57% reported poor sleep. Based on other research on clinician burnout in non-Magnet hospitals, APRN burnout was likely significantly higher in non-Magnet hospitals.³⁵

The odds of APRN burnout were 21% higher when clinicians were not involved in hospital governance. Shared governance provides a formal structure for clinicians to define their professional practice, improve engagement, and increase decision-making capabilities.³⁶ Hospitals should form advanced practice councils as part of their shared governance models to address specific APRN needs. At 1 large academic medical center, after surveying APRN council members, the management structure improved,³⁷ which led to a consistent reporting structure for APRNs. Additionally, formation of advanced practice councils has been associated with increased engagement.³⁸ Advanced practice shared governance councils also advocate for clinical advancement of APRNs, reward APRNs for their clinical expertise, and give them more control over their

work.^{36,38-40} Participation in council programs allows APRNs opportunities for professional growth, recognition, and additional compensation⁴¹ that could increase satisfaction and retention.

Inconsistent reporting structures within hospitals for APRNs have resulted in inconsistent role implementation and failure to practice at the top of their legal scope of practice.^{37,39} Hospitals that implemented an APRN reporting structure where APRNs were led by advanced practice leaders had better outcomes for APRNs and leaders alike, such as APRN job satisfaction, productivity, retention, and accountability.^{39,40}

Limitations

The cross-sectional study design limits causal inferences. Data were collected during the COVID-19 pandemic, which was a uniquely stressful time for hospital clinicians. The sample of hospitals was geographically diverse, yet all were Magnet designated, and thus, the results may not be generalizable.

Conclusions

High burnout among Magnet hospital APRNs is concerning, and our findings offer promising directions for improving APRN well-being through organizational modifications. Reducing chaotic work environments, providing APRNs more control over their workloads, increasing involvement of APRNs in shared governance, better management and clinician relations, and improved interprofessional teamwork are promising directions that should be prioritized by Magnet hospitals.

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