

A national study of personal accomplishment, burnout, and satisfaction with work–life integration among advance practice nurses relative to other workers

Liselotte N. Dyrbye, MD, MHPE (Professor and Co-Director)^{1,2}, Colin P. West, MD, PhD (Professor and Co-Director)^{2,3}, Elizabeth A. Kelsey, APRN, CNP, DNP, MSN (Instructor in Medicine)¹, Andrea A. Gossard, APRN, CNP (Associate Professor)⁴, Daniel Satele, BA (Statistician)⁵, & Tait Shanafelt, MD (Professor and Associate Dean)⁶

ABSTRACT

Background: There is a high prevalence of burnout among health care professionals, but little remains known about burnout and satisfaction with work–life integration (WLI) among advance practice nurses (APNs).

Purpose: To evaluate burnout and satisfaction with WLI among APNs compared with other US workers.

Methods: A national sample of APNs and a probability-based sample of US workers completed a survey that measured burnout and satisfaction with WLI.

Results: Of the 976 (47%) APNs who completed the survey 64% had high personal accomplishment, 36.6% had symptoms of overall burnout, and 60.6% were satisfied with their WLI. In multivariable analysis, work hours (for each additional hour odds ratio [OR] 1.03, 95% confidence interval [CI] 1.02–1.04, $p < .001$) and working in an outpatient setting (overall $p = .03$; referent hospital: outpatient, OR 1.80, 95% CI 1.17–2.18; other/unknown, OR 1.41, 95% CI 0.90–2.22, $p = .13$) were independently associated with having higher odds of burnout. Work hours were also independently associated with lower odds of satisfaction with WLI (for each additional hour OR 0.94, 95% CI 0.94–0.95, $p < .001$). Advance practice nurses were not more likely to have burnout or have greater struggles with WLI than other workers.

Implications for practice: Findings from this study suggest APNs have high levels of personal accomplishment and a favorable occupational health profile. Advance practice nurses do not appear at higher risk of burnout or dissatisfaction with WLI than other US workers.

Keywords: Burnout; nurse anesthetist; nurse midwives; nurse practitioners; professional; work–life balance.

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Background

Burnout is a well-recognized occupational phenomenon that results from chronic workplace stress (World Health Organization, 2019). Several studies have reported a high prevalence of burnout among health care professionals (Dyrbye et al., 2017), including nurses and advance practice

nurses (APNs; i.e., nurse practitioners, nurse anesthetists, and nurse midwives) (Aiken et al., 2012; Cimiotti et al., 2012; Dyrbye, West, et al., 2019; Hoff et al., 2019; McHugh et al., 2011; Woodhead et al., 2016). Among nurses, the prevalence of burnout is 35%–45% (Aiken et al., 2012; Cimiotti et al., 2012; Dyrbye, West, et al., 2019; Hoff et al., 2019; McHugh et al., 2011; Woodhead et al., 2016). Burnout among nurses has been associated with lower quality of care, patient safety, and patient satisfaction, as well as increased absenteeism and lower job performance (Aiken et al., 2012; Cimiotti et al., 2012; Dyrbye et al., 2017; Holden et al., 2011; McHugh et al., 2011; Poghosyan et al., 2010; Welp et al., 2015). In addition, nurses with burnout are more likely to consider leaving their current job (Aiken et al., 2012; Fida et al., 2018; Meeusen et al., 2011). Factors that contribute to burnout among nurses include high workload and inadequate resources, suboptimal work environment and supervisor behaviors, lack of autonomy, control, and rewards, incivility from

¹Division of Community Internal Medicine, Department of Medicine, Mayo Clinic, Rochester, Minnesota, ²Mayo Clinic Program on Physician Well-Being, Mayo Clinic, Rochester, Minnesota, ³Division of General Internal Medicine, Department of Medicine, Mayo Clinic, Rochester, Minnesota, ⁴Division of Gastroenterology, Department of Medicine, Mayo Clinic, Rochester, Minnesota, ⁵Department of Health Sciences Research, Mayo Clinic, Rochester, Minnesota, ⁶Department of Medicine, Stanford School of Medicine, Stanford, California

Correspondence: Liselotte N. Dyrbye, MD, MHPE, Mayo Clinic, 200 First Street SW, Rochester, MN 55905. Tel: 507.284.2511; Fax: 507.266.2297; E-mail: dyrbye.liselotte@mayo.edu

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patients and their families, poor relationships with colleagues, and difficulties with work-life integration (WLI) (Adriaenssens et al., 2015; Boamah et al., 2017; Campana & Hammoud, 2015; Dyrbye et al., 2017; Edwards et al., 2018; Flynn & Ironside, 2018; Holden et al., 2011; Kutney-Lee et al., 2016; Li et al., 2013; McHugh & Ma, 2014; National Academies of Sciences Engineering and Medicine, 2019; Oyeleye et al., 2013; Read & Laschinger, 2013; Simpson et al., 2016). Difficulties with WLI occur when one struggles to balance personal and work responsibilities or when these responsibilities directly conflict with one another.

Although most APNs report having satisfying jobs (U.S. Department of Health and Human Services, Health Resources and Services Administration, & National Center for Health Workforce Analysis, 2014), they are not immune to the work-related stressors contributing to high rates of burnout and dissatisfaction with WLI among nurses and other health care professionals. As APNs take on direct responsibilities for patient care, they may face challenges at work more similar to physicians and physician assistants than other nurses.

To the best of our knowledge, little is known about burnout and satisfaction with WLI among US APNs. The available studies suggest prevalence of burnout among APNs varies by age, relationship status, and years of experience (Fenwick, Lubomski, et al., 2018; Henriksen & Lukasse, 2016). Factors associated with increased risk of burnout among APNs include work hours and work load, incivility from patients, lack of resources and autonomy and a stressful work environment (Hildingsson et al., 2013; Yoshida & Sandall, 2013), difficulties with WLI, and lack of continuity with patients (Alves, 2005; Elmblad et al., 2014; Fenwick, Lubomski, et al., 2018; Fenwick, Sidebotham, et al., 2018; Hildingsson et al., 2013; Yoshida & Sandall, 2013). Burnout has also been associated with turnover intention (Meeusen et al., 2011) and reported sick leave among APNs (Henriksen & Lukasse, 2016). Although these studies have advanced our understanding of the experiences of APNs, most have been conducted outside the United States, involved small samples of APNs in a single specialty, used measures with limited validity data to measure burnout, or did not included multivariable analysis to allow for identification of factors that independently contribute to the risk of burnout (Ashooh et al., 2019; Fenwick, Lubomski, et al., 2018; Henriksen & Lukasse, 2016; Hildingsson et al., 2013; Kluger & Bryant, 2008; Meeusen et al., 2011; Misiolek et al., 2017; Yoshida & Sandall, 2013). In addition, no study has yet compared rates of burnout and satisfaction with WLI among APNs with rates for workers in other fields.

The objective of our study was to determine the incidence of burnout, explore personal and professional factors independently associated with burnout and satisfaction with WLI, and compare the prevalence of

burnout and satisfaction with WLI among APNs with other US workers.

Methods

Participants

Advance practice nurses. As previously reported (Dyrbye, Johnson, et al., 2019), we obtained a random sample of 2,100 APNs from Redi-Data (more information available: <http://www.redidata.com/healthcare-lists/mailling-email-lists/state-licensed-nurses-rns-mailling-email-lists>). In November of 2016, we sent e-mails to these APNs inviting them to participate in the study. We mailed a paper survey to those who did not respond to the web survey. We were unable to reach 25 of the 2,100 APNs because they did not have a functional e-mail or valid postal address. As a result, 2,075 APNs received an invitation to participate in the study. Participation was elective, and all responses were anonymous. The study was deemed exempt by the Mayo Clinic Institutional Review Board.

Other US workers. As previously described (Shanafelt et al., 2019), we partnered with KnowledgePanel to obtain a probability-based sample of US workers. In November of 2017, KnowledgePanel random selected individuals using telephone numbers and residential addresses and invited selected individuals to complete the survey. Selected individuals are invited by telephone or by mail to participate. For those who agree to participate but do not have Internet access, Knowledge Networks provides a laptop computer and Internet service provider connection at no cost to the individual. Additional technical information is available at <http://www.knowledgenetworks.com/knpanel/index.html> and <http://www.knowledgenetworks.com/ganp/reviewer-info.html>. The Mayo Clinic and Stanford Institutional Review Boards approved the study of American workers.

Study measures

The APN and US worker surveys included questions about demographics (age, gender, and relationship status), work hours, burnout, and satisfaction with WLI. In addition, the APN survey also included additional items about demographics (parental status) and practice characteristics (years of experience working as a nurse, highest academic degree, additional certifications, and current practice setting).

Burnout

We measured burnout using the Maslach Burnout Inventory (MBI) Human Services Survey (Maslach et al., 1996). The full 22-item MBI Human Services Survey has three subscales: emotional exhaustion, depersonalization, and personal accomplishment (Maslach et al., 1996). Response options range from never (0) to every day (6). Established thresholds are used to define

high emotional exhaustion (score ≥ 27), high depersonalization (score ≥ 10), and high personal accomplishment (score ≥ 40) (Maslach et al., 1996). The survey of APNs included the full MBI Human Services Survey, and, consistent with previous studies, overall burnout was defined by having either high emotional exhaustion or high depersonalization (Shanafelt et al., 2012, 2015).

Owing to the length and expense of the MBI Human Services Survey, we also measured burnout in American workers using two of the items from the MBI Human Services Survey and the same response options (never [0] to every day [7]). Advance practice nurses completed the full-length MBI instrument including these two items while workers in other fields completed only these two items. These two items from the MBI Human Services Survey correlate with emotional exhaustion and depersonalization and stratify the risk of burnout as measured by the 22-item MBI Human Services Survey (West et al., 2009, 2012). In separate samples of more than 10,000 health care professionals, the areas under the receiver operating characteristic curve for the emotional exhaustion (“I feel burned out from my work”) and depersonalization (“I have become more callous toward people since I started this job”) single items, in comparison with the 22-item MBI Human Services Survey emotional exhaustion and depersonalization subscale scores, were 0.94 and 0.93, respectively (West et al., 2009, 2012). On the two single-item respondents with a high score (an indicated frequency of weekly or more often) on either item were considered to have symptoms of burnout (West et al., 2009, 2012). This approach has been used previously in national studies of nurses, physicians, and other workers (Shanafelt et al., 2015; West et al., 2011).

Satisfaction with work–life integration

Satisfaction with WLI was assessed by asking responders to indicate their level of agreement with the statement: “My work schedule leaves enough time for my personal/family life” (response options were strongly agree, agree, neither agree not disagree, disagree, or strongly disagree) (Shanafelt et al., 2012, 2015). Those who indicated they “strongly agree” or “agree” were considered to be satisfied with their WLI.

Statistical analysis

Standard descriptive statistics were calculated. We used Fisher exact or chi-squared tests, as appropriate, to explore associations between variables, and conducted multivariable analysis to identify factors independently associated with burnout and satisfaction with WLI. Each model included the following variables: age, gender, relationship and parental status, highest academic degree, work hours in the past 7 days, years of nursing experience, advanced certification, and practice setting. Next, we performed a pooled multivariable logistic regression

analysis of APNs and other US workers to identify demographic and professional characteristics associated with burnout and satisfaction with WLI. For all comparisons with the population sample, APN data were restricted to responders who were between the ages of 29 and 65 years to match the population sample. We used a 5% type I error rate and a two-sided alternative. All analysis was conducted using SAS version 9 (SAS Institute, Cary, NC).

Results

Advance practice nurses

Among those who received the survey, 976/2075 (47%) APNs responded. The demographics and practice characteristics of responders are shown in **Table 1**. Overall, the mean age of responders was 51.6 (SD 11.1) years and 91.6% were women. Most respondents (73.1%) were married and had children (82.4%). On average, APNs worked 41.7 (SD 15.4) hours per week and had 26.4 (SD 11.8) years of experience in the field of nursing. Most worked in an outpatient clinic (41.0%).

Personal accomplishment and burnout

When measured using the 22-item MBI, 64% of APNs had high sense of personal accomplishment, 32.3% had high emotional exhaustion, and 18.0% had high depersonalization. In aggregate, 36.6% had high emotional exhaustion and/or high depersonalization and were considered to have substantial symptoms of burnout. When determined using the 2-item MBI measure, 24.7% had high emotional exhaustion, 14.7% had high depersonalization, and 29.5% had overall burnout.

Advance practice nurses with symptoms of burnout worked more hours per week on average (overall $p < .0001$; referent 30 hours or less; 31–40 hours, odds ratio [OR] 1.31, 95% confidence interval [CI] 0.86–1.98; 41–50 hours, OR 2.38, 95% CI 1.57–3.60, 51 or more hours, OR 3.33, 95% CI 2.13–5.21) than those without burnout. The prevalence of high emotional exhaustion and high depersonalization also increased with greater work hours (**Figure 1A**). Advance practice nurses with burnout were more likely to work in an outpatient setting (overall $p = .01$; referent hospital-based; outpatient-based, OR 1.65, 95% CI 1.19–2.28; other or unknown, OR 1.29, 95% CI 0.91–1.82). Advance practice nurses who worked in the outpatient setting were also more likely to have high emotional exhaustion and high depersonalization (**Figure 1B**). Advance practice nurses who had fewer years of experience working in the field of nursing (overall $p = .02$; referent 10 or less; 11–21 years, OR 0.69, 95% CI 0.44–1.09; 22–33 years, OR 0.73, 95% CI 0.47–1.14; more than 33 years, OR 0.51, 95% CI 0.32–0.79) were also at higher risk of burnout, as were those who were younger (overall $p = .01$; referent 25–34 years of age; 35–44 years of age, OR 0.65, 95% CI 0.38–1.10, 45–54 years of age, OR 0.84, 95% CI 0.51–1.39, 55–64 years of age, OR 0.59, 95% CI 0.36–0.96, 65 or older, OR 0.39, 95% CI 0.21–0.72) and did not

Table 1. Personal and professional characteristics, burnout, and work-life integration among 976 advance practice nurses nationally

	N (%)
Age, years, mean (SD)	51.6 (11.1)
Relationship status, n (%)	
Single	181 (18.6)
Married	712 (73.1)
Partnered	55 (5.6)
Widowed	26 (2.7)
Female gender, n (%)	892 (91.6)
Have children, n (%)	802 (82.4)
Hours worked per week, mean (SD)	41.7 (15.4)
Years of experience working in the field of nursing	26.4 (11.8)
Highest earned academic degree, n (%)	
Baccalaureate degree	22 (2.4)
Masters	742 (79.4)
PhD/doctorate	85 (9.1)
Other	85 (9.1)
Additional certifications, n (%)	
Nurse practitioner	705 (72.2)
Nurse midwife	197 (20.2)
Certified registered nurse anesthetist	116 (11.9)
Nurse practitioner certification, n (%)	
Family medicine	313 (45.5)
Pediatric	73 (10.6)
Adult or geriatric	99 (14.4)
Women's health care	57 (8.3)
Psychiatric/mental health	60 (8.7)
Other ^a	86 (12.5)
Current practice setting, n (%) ^b	
Hospital-based	291 (31.0)
Outpatient-based	385 (41.0)
Other	264 (28.1)
Missing	36
Maslach burnout inventory ^c	
Emotional exhaustion, mean (SD)	20.6 (12.01)
High emotional exhaustion, n (%)	307 (32.3)
Depersonalization, mean (SD)	5.0 (4.89)

Table 1. Personal and professional characteristics, burnout, and work-life integration among 976 advance practice nurses nationally, continued

	N (%)
High depersonalization, n (%)	171 (18.0)
Personal accomplishment, mean (SD)	40.8 (5.81)
High personal accomplishment, n (%)	625 (64.0)
Burnout, n (%)	350 (36.6)
Satisfied with work-life integration, n (%)	
Strongly agree	229 (23.6)
Agree	359 (37.0)
Neutral	140 (14.4)
Disagree	175 (18.1)
Strongly disagree	66 (6.8)

^aOther includes neonatal, acute care, occupational health, and other.

^bHospital-based includes medical and surgical inpatient, intensive care, obstetrics, and operating/recovery room. Outpatient-based includes ambulatory and outpatient clinic. Other includes hospice, home health, nonclinical setting, public health, and other.

^cStandard cutoff scores were used for high emotional exhaustion (≥ 27), high depersonalization (≥ 10), and high personal accomplishment (≥ 40). Overall burnout defined by having high score on emotional exhaustion or depersonalization subscale.

have children (referent no child; OR 0.62, 95% CI 0.44–0.86, $p = .01$).

After adjusting for age, gender, relationship status, parental status, years of experience working in nursing, highest earned academic degree, additional certifications, and nurse practitioner certification, hours worked per week (for each additional hour OR 1.03, 95% CI 1.02–1.04, $p < .001$) and practice setting (overall $p = .03$; referent hospital: outpatient, OR 1.80, 95% CI 1.17–2.18; other/unknown, OR 1.41, 95% CI 0.90–2.22) remained independently associated with burnout (**Table 2**).

Satisfaction with work-life integration

In terms of satisfaction with WLI, 23.6% strongly agreed and 37.0% agreed that their work schedule left enough time for personal/family life. Advance practice nurses who were satisfied with their WLI worked fewer hours per week on average (overall $p < .0001$; referent 30 hours or less; 31–40 hours, OR 0.41, 95% CI 0.25–0.66; 41–50 hours, OR 0.15, 95% CI 0.09–0.24, 51 or more hours, OR 0.07, 95% CI 0.04–0.12), had children (referent no child, OR 1.46, 95% CI 1.05–2.04, $p = .02$), and were less likely to be single (overall $p = .01$; referent single; married, OR 1.59, 95% CI 1.14–2.21, partnered,

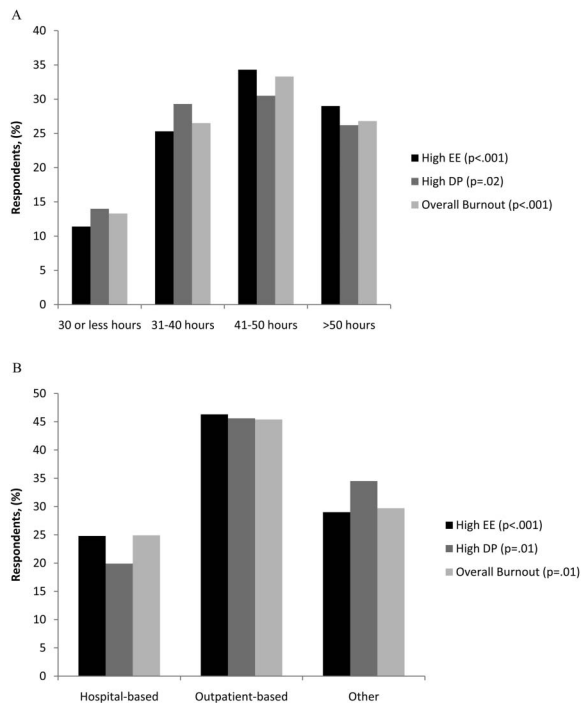


Figure 1. Relationship between high emotional exhaustion (EE), high depersonalization (DP), and overall burnout and (A) weekly work hours and (B) practice setting.

OR 1.83, 95% CI 0.98–3.43, widowed, OR 3.06, 95% CI 1.17–8.03) than those not satisfied with their WLI.

After adjusting for age, gender, relationship status, parental status, years of experience working in nursing, highest earned academic degree, additional certifications, and nurse practitioner certification, hours worked per week (for each additional hour, OR 0.94, 95% CI 0.93–0.95, $p < .001$) and relationship status (overall $p = .02$; referent married; partnered, OR 1.49, 95% CI 0.78–2.85; single, OR 0.70, 95% CI 0.46–1.05; widowed/widower, OR 3.37, 95% CI 1.06–10.71) remained independently associated with satisfaction with WLI (**Table 2**).

Advance practice nurses in comparison with other US workers

Compared with other US workers, APNs were more likely to be female and married but were similar in age (**Table 3**). The APNs worked, on average, two more hours per week (mean 42.5 [14.96] vs. 40.2 [11.88], $p < .001$). On the two-item burnout measure, there were subtle differences in responses across the seven response options for both the emotional exhaustion and the depersonalization item between the APNs and the US workers. There were, however, no significance differences in the prevalence of high emotional exhaustion, high depersonalization, or overall burnout between the two groups. On univariate analysis, there were statistically significant differences in satisfaction with WLI between the

APNs and the US workers with the APNs appearing slightly less satisfied.

In the pooled multivariable analysis (including APNs and other workers) adjusting for age, gender, relationship status, hours worked per week, and satisfaction with WLI, older age was associated with lower odds of burnout (OR 0.99, 95% CI 0.98–0.99, $p < .001$; **Table 4**). Women (OR 1.25, 95% CI 1.10–1.42, $p < .001$) and those who were single (overall p -value = .003; referent married; partnered, OR 1.19, 95% CI 0.90–1.57; single OR 1.28, 95% CI 1.12–1.46; widowed OR 1.24, 95% CI 0.80–1.90) were more likely to have burnout. Being neutral or dissatisfied with WLI was also independently associated with higher odds of burnout (OR 2.96, 95% CI 2.62–3.34, $p < .001$). APNs were not more likely to have burnout than other US workers after adjusting for other factors.

Finally, in the pooled multivariable analysis to identify factors independently associated with satisfaction with WLI, greater work hours were associated with lower odds of being satisfied with WLI (for each additional hour OR 0.94, 95% CI 0.94–0.95, $p < .001$; **Table 4**). No difference in satisfaction with WLI was found between APNs and other US workers after adjusting for age, gender, relationship status, and work hours.

Discussion

In this national sample, APNs had high rates of personal accomplishment and a favorable occupational health profile. Despite these generally favorable results, 36.6% had symptoms of burnout and 39.3% were not satisfied with their WLI. Greater work hours were associated with higher odds of burnout and lower odds of satisfaction with WLI. APNs who worked in an outpatient setting were also at higher risk of burnout. APNs were not more likely to have burnout or be dissatisfied with their WLI than other US workers after adjusting for age, gender, relationship status, and hours worked per week.

As in this study, multiple studies of nurses, physician assistants, physicians, and other workers have reported a relationship between work hours and burnout (Dyrbye et al., 2017, 2020; Dyrbye, West, et al., 2019; Shanafelt et al., 2012, 2015, 2019; West et al., 2018). In addition to work hours, practice setting was independently associated with risk of burnout. In particular, APNs who worked in the outpatient setting had higher odds of burnout, even after controlling for personal and professional characteristics. In a recent study of more than 8,600 US nurses, no difference in the odds of burnout was found across practice settings (Dyrbye, West, et al., 2019). Further study is needed to explore and address why APNs who work in the outpatient setting had higher risk of burnout. In particular, researchers should consider exploring the role of indirect patient care (e.g., “non-face-to-face care” such as electronic communications with patients), different levels of clerical burden, and social isolation at work

Table 2. Factors associated with burnout and satisfaction with work–life integration on multivariable analysis^a

	Burnout			Satisfaction With Work–Life Integration		
	OR (95% CI)	p-Value	Overall p-Value	OR (95% CI)	p-Value	Overall p-Value
Age (for each year older)	0.99 (0.96–1.01)		.36	1.00 (0.97–1.03)		.98
Female (vs. male)	0.98 (0.56–1.72)		.94	0.86 (0.49–1.50)		.59
Relationship status (vs. married)			.32			.02
Partnered	1.30 (0.71–2.39)	.39		1.49 (0.78–2.85)	.23	
Single	1.41 (0.94–2.11)	.10		0.70 (0.46–1.05)	.09	
Widowed/widower	1.47 (0.57–3.80)	.43		3.37 (1.06–10.72)	.04	
Have children (yes vs. no)	0.81 (0.55–1.19)		.28	1.15 (0.77–1.72)		.50
Hours worked past 7 days (for each additional hour)	1.03 (1.02–1.04)		<.0001	0.94 (0.93–0.95)		<.0001
Years of experience working in nursing (for each additional year)	0.99 (0.96–1.01)		.38	1.00 (0.98–1.03)		.91
Highest earned academic degree (vs. masters)			.24			.48
Bachelor's degree	0.32 (0.07–1.49)	.15		0.64 (0.22–1.87)	.42	
PhD/doctorate	1.01 (0.62–1.65)	.97		1.41 (0.84–2.37)	.19	
Additional certifications (vs. nurse practitioner)			.24			.88
Nurse midwife	0.87 (0.53–1.44)	.60		0.87 (0.52–1.47)	.61	
Certified registered nurse anesthetist	0.57 (0.30–1.11)	.10		0.94 (0.49–1.82)	.86	
Current practice setting (vs. hospital)			.03			.07
Other/unknown	1.41 (0.90–2.22)	.13		0.75 (0.47–1.19)	.23	
Outpatient	1.80 (1.17–2.78)	.01		0.60 (0.38–0.93)	.02	
Nurse practitioner certification (vs. family medicine)			.80			.66
Pediatric	0.85 (0.48–1.50)	.57		0.70 (0.39–1.26)	.23	
Adult or geriatric	1.26 (0.76–2.09)	.38		0.70 (0.41–1.18)	.18	
Women's health care	1.18 (0.59–2.38)	.64		0.99 (0.48–2.06)	.98	
Psychiatric/mental health	0.80 (0.43–1.50)	.49		1.05 (0.55–2.01)	.88	
Other/unknown	1.12 (0.69–1.81)	.65		0.81 (0.49–1.33)	.40	

Note: CI = confidence interval; OR = odds ratio.

^aOR > 1 indicate increased risk of burnout or satisfaction with work–life integration; OR < 1 indicate lower risk of burnout or satisfaction with work–life integration (i.e., greater struggles with work–life integration).

(National Academies of Sciences Engineering and Medicine, 2019).

The overall sense of accomplishment and occupational health of US APNs appears favorable relative to many other health care professionals. The prevalence of burnout

among APNs in this cohort was lower than the prevalence reported in national studies of nurses (38.4%), physician assistants (41.4%), and physicians (43.9%) using the same measure (Dyrbye et al., 2020; Dyrbye, West, et al., 2019; Shanafelt et al., 2012, 2015, 2019). In this study, APNs were not

Table 3. Comparison of advance practice nurses in the sample aged 29–65 years with a probability-based sample of the employed US population aged 29–65 years

	Advance Practice Nurses	US Working Population	p-Value
Gender			<.0001
Male	71 (8.0%)	2,704 (52.2%)	
Female	816 (92.0%)	2,475 (47.8%)	
Age			.70
Median	51.0	52.0	
29–34	78 (8.8%)	497 (9.6%)	.57
35–44	187 (21.1%)	998 (19.3%)	
45–54	248 (28.0%)	1,495 (28.9%)	
55–65	374 (42.2%)	2,189 (42.3%)	
Relationship status			<.0001
Single	155 (17.5%)	1,430 (27.6%)	
Married	666 (75.1%)	3,418 (66.0%)	
Partnered	48 (5.4%)	227 (4.4%)	
Widowed/widower	18 (2.0%)	104 (2.0%)	
Missing		0	
Hours worked/week			<.0001
Mean (SD)	42.5 (14.96)	40.2 (11.88)	
Median	40.0	40.0	
<40 hr	288 (33.3%)	1,359 (26.2%)	<.0001
40–49 hr	305 (35.3%)	2,806 (54.2%)	
50–59 hr	160 (18.5%)	692 (13.4%)	
60–69 hr	76 (8.8%)	236 (4.6%)	
70–79 hr	15 (1.7%)	53 (1.0%)	
≥80 hr	21 (2.4%)	33 (0.6%)	
Missing	22	0	
Highest level of education completed			
Less than high school graduate		114 (2.2%)	

Table 3. Comparison of advance practice nurses in the sample aged 29–65 years with a probability-based sample of the employed US population aged 29–65 years, continued

	Advance Practice Nurses	US Working Population	p-Value
High school graduate		1,156 (22.3%)	
Some college, no degree		1,025 (19.8%)	
Associate degree	6 (0.7%)	600 (11.6%)	
Bachelor's degree	15 (1.8%)	1,280 (24.7%)	
Master's degree	690 (80.8%)	717 (13.8%)	
Professional or doctorate degree (other than MD/DO)	79 (9.6%)	287 (5.5%)	
Other	64 (7.5%)	—	
Missing	33	0	
Occupation			
Professional ^a		2,217 (43.3%)	
Health care ^b		363 (7.1%)	
Service ^c		386 (7.5%)	
Sales ^d		331 (6.5%)	
Office and administrative support		469 (9.2%)	
Farming and forestry fishing		22 (0.4%)	
Precision production, craft, and repair ^e		339 (6.6%)	
Transportation and material moving		168 (3.3%)	
Armed services		26 (0.5%)	
Other		803 (15.7%)	
Missing		55	
Distress			
Burnout ^f			
Emotional exhaustion ^g			.002
Never	106 (12.2%)	724 (14.0%)	
A few times a year	280 (32.1%)	1,357 (26.3%)	

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Table 3. Comparison of advance practice nurses in the sample aged 29–65 years with a probability-based sample of the employed US population aged 29–65 years, continued

	Advance Practice Nurses	US Working Population	p-Value
Once a month or less	135 (15.5%)	844 (16.3%)	
A few times a month	131 (15.0%)	968 (18.7%)	
Once a week	82 (9.4%)	409 (7.9%)	
A few times a week	96 (11.0%)	555 (10.7%)	
Every day	42 (4.8%)	310 (6.0%)	
Missing	15	12	
% High score ^f	220 (25.2%)	1,274 (24.7%)	.72
Depersonalization ^h			.01
Never	368 (42.3%)	2,274 (44.2%)	
A few times a year	210 (24.1%)	1,110 (21.6%)	
Once a month or less	78 (9.0%)	547 (10.6%)	
A few times a month	84 (9.6%)	520 (10.1%)	
Once a week	54 (6.2%)	231 (4.5%)	
A few times a week	55 (6.3%)	245 (4.8%)	
Every day	22 (2.5%)	219 (4.3%)	
Missing	16	33	
% High score ^f	131 (15.0%)	695 (13.5%)	.22
Burned out ⁱ	263 (30.2%)	1,441 (28.0%)	.18
Work–life integration			
Work schedule leaves enough time for personal/family life			
Strongly agree	201 (22.7%)	1,204 (23.3%)	.01
Agree	327 (37.0%)	1,948 (37.8%)	
Neutral	132 (14.9%)	947 (18.4%)	
Disagree	163 (18.4%)	775 (15.0%)	

Table 3. Comparison of advance practice nurses in the sample aged 29–65 years with a probability-based sample of the employed US population aged 29–65 years, continued

	Advance Practice Nurses	US Working Population	p-Value
Strongly disagree	61 (6.9%)	286 (5.5%)	
Missing	3	19	

Note: DO = Doctor of Osteopathic Medicine; MD = Doctor of Medicine.

^aBusiness/financial, management, computer/mathematical, architecture/engineering, lawyer/judge, life/physical/social sciences, community/social services, teacher nonuniversity, teacher college/university, and other.

^bNurse, pharmacist, paramedic, laboratory technician, nursing aide, orderly, and dental assistant.

^cProtective service, food preparation/service, building cleaning/maintenance, and personal care/service.

^dSales representative, retail sales, and other sales.

^eConstruction and extraction, installation/maintenance/repair, and precision production (machinist, welder, baker, printer, and tailor).

^fAs assessed using the single-item measures for emotional exhaustion and depersonalization adapted from the full Maslach Burnout Inventory.

^gIndividuals indicating emotional exhaustion symptoms at least weekly have a median domain score of >30 and >75% of having high emotional exhaustion domain score as defined by the full Maslach Burnout Inventory.

^hIndividuals with high depersonalization score on the single-item measure have a median domain score of >13 and >85% of having high depersonalization domain score as defined by the full Maslach Burnout Inventory (≥ 10).

ⁱHigh score (weekly or more often) on Emotional Exhaustion and/or Depersonalization scale.

more likely to have burnout or struggle with their WLI than other US workers. In a recent study, the prevalence of burnout among 8,638 nurses was similar to that of other US workers, but the nurses were less likely to be satisfied with their WLI than other US workers (Dyrbye, West, et al., 2019). A national study of 600 physician assistants found that physician assistants were more likely to have burnout than other US workers, but did not have greater struggles with WLI (Dyrbye et al., 2020). Several large studies of US physicians have reported both the prevalence of burnout and satisfaction with WLI are worse among physicians than other US workers (Shanafelt et al., 2012, 2015, 2019). In aggregate, these findings suggest that challenges, stressors, and experiences vary to a degree by profession, and as such, the solutions are not likely to be the same for all members of the health care team. They also indicate high levels of professional accomplishment among APN relative to many other health care disciplines. Each discipline needs to take steps to mitigate the unique as well as common work-related stressors that are contributing to high rates of burnout among health care professionals and leading to suboptimal patient care and costly turnover.

This study has several limitations. First, the response rate was 47%. Although this is a high participation rate for

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Table 4. Pooled multivariable analysis of advance practice nurses and other workers exploring factors associated with burnout and satisfaction with work-life integration

Variable	OR (95% CI)	p-Value	Overall p-Value
Burnout			
Age (for each year older)	0.99 (0.98–0.99)		<.001
Female (vs. male)	1.25 (1.10–1.42)		.001
Relationship status (vs. married)			<.01
Partnered	1.19 (0.90–1.57)	.21	
Single	1.28 (1.12–1.46)	<.001	
Widowed/widower	1.24 (0.80–1.90)	.33	
Hours worked past 7 days (for each additional hour)	1.01 (1.01–1.02)	<.001	<.001
Neutral/dissatisfied with work-life integration (vs. satisfied)	2.96 (2.62–3.34)	<.001	<.001
Advance practice nurse (vs. other worker)	0.99 (0.83–1.18)	.93	.93
Satisfaction with work-life integration^a			
Age (for each year older)	1.003 (0.997–1.008)	.35	.35
Female (vs. male)	0.92 (0.82–1.04)	.19	.19
Relationship status (vs. married)			.05
Partnered	0.97 (0.74–1.26)	.80	
Single	0.86 (0.76–0.98)	.02	
Widowed/widower	1.33 (0.87–2.03)	.18	
Hours worked past 7 days (for each additional hour)	0.94 (0.94–0.95)	<.001	<.001
Advance practice nurse (vs. other worker)	1.11 (0.94–1.32)	.22	.22

Note: CI = confidence interval; OR = odds ratio.

^aAgreed or strongly agreed with the item "My work schedule leaves enough time for my personal/family life" was used to measure satisfaction with work-life balance.

national surveys of health care professionals (Shanafelt et al., 2019), we do not know whether APNs who took the time to respond to our survey were more or less likely to have burnout and struggles with their WLI than those who chose to not respond. Our cohort of nurse practitioners, nurse midwives, and nurse anesthetists were similar to APNs nationally with respect to proportion having a graduate degree and working in a hospital setting, but may be slightly older than APNs nationally (National Board of Certification and Recertification for Nurse Anesthetists, 2017; Health Resources and Services Administration, 2012; Sipe et al., 2009). Second, we included a limited number of personal and work-related factors related to burnout and WLI. Third, as this was a cross-sectional study, we are unable to determine cause and effect among the observed relationships. Fourth, although there is robust validity evidence for use of the two items from the MBI in health care workers, similar evidence does not exist for the general US working population. Strengths of our study include the

large sample of APN from multiple specialties and practice settings, inclusion of the full 22-item MBI, and a large probability sample of US workers, allowing for a comparison between responding APNs relative to other US workers.

Conclusion

Advance practice nurses have a high sense of accomplishment and a favorable occupational health profile relative to other many other health care professionals. Advance practice nurses in this cohort were not more likely to have burnout or struggle with their WLI than other US workers. Nonetheless, symptoms of burnout remain prevalent among APNs, particularly those in outpatient practice settings. Additional research is needed to inform additional efforts to improve well-being for APNs, particularly those in outpatient settings.

Authors' contributions: L. N. Dyrbye, C. P. West, and T. Shanafelt conceived of the study, developed the research

project, and contributed to the implementation of the research and analysis of the results. D. Satele performed the analysis. L. N. Dyrbye wrote the initial draft of the manuscript. All authors interpreted the data and revised the manuscript for final submission and approved it to be published.

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