

CHARTING THE COURSE FOR NURSES' ACHIEVEMENT OF HIGHER EDUCATION LEVELS

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To improve patient outcomes and meet the challenges of the U.S. health care system, the Institute of Medicine recommends higher educational attainment for the nursing workforce. Characteristics of registered nurses (RNs) who pursue additional education are poorly understood, and this information is critical to planning long-term strategies for U.S. nursing education. To identify factors predicting enrollment and completion of an additional degree among those with an associate or bachelor's as their pre-RN licensure degree, we performed logistic regression analysis on data from an ongoing nationally representative panel study following the career trajectories of newly licensed RNs. For associate degree RNs, predictors of obtaining a bachelor's degree are the following: being Black, living in a rural area, nonnursing work experience, higher positive affectivity, higher work motivation, working in the intensive care unit, and working the day shift. For bachelor's RNs, predictors of completing a master's degree are the following: being Black, nonnursing work experience, holding more than one job, working the day shift, working voluntary overtime, lower intent to stay at current employer, and higher work motivation. Mobilizing the nurse workforce toward higher education requires integrated efforts from policy makers, philanthropists, employers, and educators to mitigate the barriers to continuing education. (Index words: Continuing education; Bachelor's; Degree; Master's; Nurses; Nursing) *J Prof Nurs* 28:333–343, 2012. © 2012 Elsevier Inc. All rights reserved.

THE GROWING COMPLEXITIES in health care highlight the critical need for nursing educators, policy makers, and employers to ensure that registered nurses (RNs) are equipped to meet the challenges of 21st century health care. Higher educational attainment among RNs has the potential to enhance RNs' ability to improve health care in the United States. For example, bachelor's (BS) degree nursing education is linked to more positive patient health outcomes (Aiken, Clarke, Cheung, Sloane, & Silber, 2003) and lower mortality rates (Aiken et al., 2003; Estabrooks, Midodzi, Cum-

mings, Ricker, & Giovannetti, 2005; Friese, Lake, Aiken, Silber, & Sochalski, 2008) than associate degree (AD) nursing education. Therefore, the Institute of Medicine's (IOM's) committee, Future of Nursing: Leading Change, Advancing Health, has set a goal that 80% of the nursing workforce be composed of BS-prepared RNs by 2020 (IOM, 2011). Similarly, the New York State Nurses Association and the New Jersey State Nurses Association (NJSNA) are longtime advocates of the "BSN-in-10," an initiative for AD- and diploma (DIP)-prepared RNs to obtain their BS within 10 years of initial licensure as an RN and have made policy efforts to change licensure laws in their respective states (Ballard, 2011; NJSNA, 2010).

After their initial RN education, through one of three principal pathways in the United States—(a) BS, (b) AD, and (c) DIP (American Nurses Association, 2011)—many RNs pursue additional degrees. Over the past two decades, there has been a shifting trend toward higher educational attainment among the nurse workforce. For example, from 1988 to 2008, there has been a dramatic decrease in new DIP-prepared RNs and an increase in the number of AD-prepared RNs (U.S. Department of Health,

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Services, & Resources [HRSA], 2010a). In 1988, 49% of all U.S. RNs reported having a DIP, 28.5% an AD, and 22.5% a BS or higher as their basic nursing degree. In comparison, in 2008, about 20.4% of all U.S. RNs reported having a DIP, 45.5% an AD, and 34.2% a BS or higher as their first professional degree (HRSA, 2010a). Similarly, the number of RNs with a BS or higher is growing. In 2008, half of all RNs had a BS or a higher degree in nursing or a nursing-related field as their highest degree (HRSA, 2010b). Likewise, from 1988 to 2008, the number of RNs reporting a graduate degree as their highest level of nursing education has doubled (from 6.5% to 13.2%; HRSA, 2010a). In terms of educational attainment by race and ethnicity in the United States, Asians had the highest percentage of RNs with a BS; and Black RNs more frequently earned BS and graduate degrees compared with White RNs (HRSA, 2010b).

Despite evidence that higher education among RNs is growing, very little is known about the characteristics of RNs who are likely to enroll in and complete additional degrees. Information about RNs who pursue additional education will be useful for education and health workforce policy makers in charting long-term strategies to achieve the IOM's Future of Nursing goal of an 80% BS-prepared nurse workforce by 2020 (IOM, 2011).

The purpose of this study is to address this gap in the literature. The aims of this study are to identify (a) the characteristics of RNs with an AD as their first professional degree that predict completion of a BS degree or higher and (b) the characteristics of RNs with a BS as their first professional degree that predict completion of a master's degree or higher. Data were collected and analyzed from an ongoing longitudinal survey investigating the career trajectories of newly licensed RNs (NLRNs; Kovner et al., 2007).

Review of Literature

We searched nursing and nonnursing databases (CINAHL, Web of Science, PubMed, PsychInfo, and ERIC) using various combinations of the following keywords: nursing, education, baccalaureate, bachelor's, graduate, degree, masters, motivation, psychology, recruitment, and second degree. We limited the search to the period 1990–2011.

Factors Related to Pursuing Additional Education Across Professions

Enrollment in graduate school is more likely among students who are younger, are single, and have high undergraduate academic achievement (Nevill & Chen, 2007). Higher graduate school completion rates are associated with a shorter gap in time (<5 years) between completing an undergraduate degree and enrolling in graduate school, full-time enrollment, and receiving financial aid in the form of grants, employer assistance, or tuition remission (Nevill & Chen, 2007). Parents' education levels are also associated with higher degree attainment. Students who have a parent with a BS degree

are more likely to enroll in a postsecondary program (Choy, 2001; Hahs-Vaughn, 2004). Similarly, there is greater likelihood of enrolling and earning a master's degree among those whose parents have higher education levels (Nevill & Chen, 2007).

Numerous extrinsic and intrinsic motivators drive those in various professions to seek out advanced degrees. For example, engineers (Chen, 2002; Grzyb, Graham, & Donaldson, 1998), social workers, business administrators (Perna, 2005), physical therapists (Stoecker, 1991), and pharmacists (Smith, 1992) are motivated to engage in graduate education for skill enhancement (Buchanan, Kim, & Basham, 2007; Stoecker, 1991), higher earnings (Buchanan et al., 2007; Smith, 1992), career advancement, (Chen, 2002; Grzyb et al., 1998), and meeting licensure and professional recertification requirements (Chen, 2002).

RNs' Motivations to Obtain an Additional Degree

Like those in other professions, AD RNs also report a combination of intrinsic and extrinsic motivating factors that influence their decision to obtain a BS in nursing. Extrinsic motivators include career and professional advancement (Krawczyk, 1997; Lethbridge, 1989; Thompson, 1992; Zuzelo, 2001); intrinsic motivators include gaining new knowledge (Delaney & Piscopo, 2004; Iava, 1994; Kalman, Wells, & Gavan, 2009; Krawczyk, 1997; Lethbridge, 1989; Thompson, 1992; Zuzelo, 2001), improving social welfare skills (Lethbridge, 1989), and being a positive role model for one's children (Zuzelo, 2001). In the United Kingdom, experienced RNs with a DIP in nursing reported seeking higher education in response to a "loss of status" (Bahn, 2007, p.719), as more educated RNs entered their workplace, prompting concerns about employability and fears of dismissal.

Factors that motivate RNs to pursue graduate degrees are related to personal and professional goals. RNs are motivated to return to school by a desire to achieve personal and job satisfaction (Pelletier, Donoghue, Duffield, Adams, & Brown, 1998) and "professional achievement" (defined as professional advancement, improving professional practice, and higher job status; Iava, 1994, p. 319). Comparisons among RNs according to their highest degree, but unadjusted for other differences, indicate that those with graduate degrees report greater rates of being extremely satisfied with their jobs (39.2%), whereas those with ADs more frequently report moderate to extreme dissatisfaction with their jobs (13.1%) compared with those with a BS (HRSA, 2010b). Not surprisingly, earnings are higher for those RNs with graduate-level education compared with those without graduate education (HRSA, 2010b).

RNs who are closer to completing their master's degrees are more likely to pursue graduate studies for pragmatic reasons such as keeping up with the competition, compared with those RNs with fewer completed academic requirements (Iava, 1994). Younger RNs (31–35 years old) are more likely to return to school for

reasons related to self-improvement (Iava, 1994), as are those with higher incomes ($\geq \$25,000$) prior to becoming an RN (Delaney & Piscopo, 2004). The willingness to return to school for an additional nursing degree is predicted by lower career satisfaction (Kalman et al., 2009; Warren & Mills, 2009), higher professional commitment, organizational incentives, and the perception that higher education offers greater promotional opportunities (Warren & Mills, 2009). RNs in Germany and Britain reported personal development, improving credibility, becoming prepared for specialized practice, and improving knowledge and skills as motivating factors in pursuing a master's degree (Watkins, 2011). For BS RN students in Canada, the strongest independent predictors of intent to pursue graduate studies are self-efficacy in graduate education, a high valuation of a master's degree in one's career, and self-efficacy in the graduate school application process (Plunkett, Iwasiw, & Kerr, 2010).

RNs' Decision to Return to School

The decision to return to school is marked by an evaluation of the benefits and barriers to obtaining advanced education. In selecting a BS program, RNs ascribe greater value to tuition costs, accreditation, and flexibility over factors such as location, program quality, program duration, and progression to a master's degree (Iava, 1994; Krawczyk, 1997). They mention personal and professional growth as a benefit of BS degree completion (Delaney & Piscopo, 2004; Iava, 1994; Kalman et al., 2009; Lethbridge, 1989; Warren & Mills, 2009), while acknowledging that maintaining a balance between one's work and personal life is a significant challenge (Kalman et al., 2009; Thompson, 1992). The evidence on barriers to returning to school is mixed. Some of those deciding to go back to school report that family, finances, and older age are the main barriers to BS degree completion (Delaney & Piscopo, 2004). However, others (Warren & Mills, 2009) report that work–family conflicts, older age, and money are not significant barriers to returning to graduate school and argue that demographic factors do not predict enrollment in nursing degree programs.

RNs report that support from employers and educational institutions influence the decision to return to school. Those RNs who are undecided about continued nursing education express a preference for organizational incentives and rewards such as tuition reimbursement, matched work and class hours, paid sabbaticals, forgivable loans for service, pay for attending class, and Web-based and worksite classes (Warren & Mills, 2009). Likewise, RNs indicate that academia can better facilitate a return to school by simplifying the application process (Delaney & Piscopo, 2004); improving access through flexible, work-centered class schedules; and providing financial aid (Delaney & Piscopo, 2004; Warren & Mills, 2009).

In summary, the current evidence on RNs pursuing higher education is represented by both quantitative (Iava, 1994; Krawczyk, 1997; Lethbridge, 1989; Pelletier et al., 1998; Plunkett et al., 2010; Warren & Mills, 2009) and

qualitative studies (Bahn, 2007; Delaney & Piscopo, 2004; Kalman et al., 2009; Thompson, 1992; Watkins, 2011; Zuzelo, 2001) conducted in the United States, Canada, Britain, Germany, and Australia. Most of these studies are based on single-site, cross-sectional designs (Delaney & Piscopo, 2004; Iava, 1994; Krawczyk, 1997; Plunkett et al., 2010; Warren & Mills, 2009) with small sample sizes (Plunkett et al., 2010; Watkins, 2011). In our study, we extend the available evidence on the factors predicting a return to school for additional education using a nationally representative U.S. sample and longitudinal study design.

Method

Design

Our analysis uses data from 1,648 RNs who responded to three waves of an ongoing panel survey following the career trajectories of NLRNs. The sample was restricted to RNs who received their first license to practice between August 1, 2004, and July 31, 2005 (Kovner et al., 2007). Data were collected in 2006 (Wave 1), 2007 (Wave 2), and 2009 (Wave 3). For the Wave 1 survey, we used a mailed survey to a random sample of RNs who were nested in 51 randomly selected metropolitan statistical areas, defined by the U.S. Census bureau, and 9 rural counties in 34 states and the District of Columbia. The 16-page survey was distributed following the Dillman Tailored Design method (Dillman, 2007). We sent an alert letter, a survey with a \$5 incentive, a reminder postcard, and two follow-up surveys to nonresponders (one by U.S. Postal Service's next day-mail service). For Wave 2, we followed the same procedure and sent surveys to those RNs who responded to the Wave 1 survey. For Wave 3, those participants who previously provided their e-mail addresses were contacted by e-mail to complete the survey via the Internet; we contacted them the same number of times as those receiving mailed surveys. For those who did not provide an e-mail address, we used the same method as that used for the Wave 1 and 2 surveys.

Sample

Lists of names and addresses were obtained from State Boards of Nursing. Of the 14,512 surveys mailed in 2006, a total of 3,370 NLRNs comprised the final analytic sample of Wave 1 of our study. In most cases, the states could not provide information about whether the RNs were licensed for the first time ever or for the first time in the state. Thus, our initial mailing included many RNs who did not meet our inclusion criteria. For those meeting our criteria, we estimate a 59% response rate (American Association for Public Opinion Research, 2004; Kovner et al., 2007). Subsequently, for Waves 2 and 3, the survey instrument was distributed to those who responded to the previous survey, with 2,368 respondents for Wave 2 and 2,007 respondents for Wave 3. For this analysis, we used the 1,648 RNs who replied to all three waves. Because we were focused on characteristics that predict higher educational attainment among RNs with an AD or with a BS as their pre-RN licensure degree, we excluded 88 cases that did not

meet our sampling criteria because they reported having a DIP-, a master's-, or a doctorate-level degree as their pre-RN licensure education, bringing our final analytic sample to 1,560.

We were interested in examining what personal characteristics, work attributes, and work attitudes at Wave 1 and Wave 2, outlined in Tables 3 and 4, predict the likelihood that RNs with an AD or BS as their pre-RN licensure degree would enroll in or complete higher education degrees in nursing by Wave 3. The survey was developed by the research team using questions from the 2004 National Sample Survey of Registered Nurses (HRSA, 2010b). We also used scales that had been used in previously published research (see Kovner et al., 2007, for detailed information about all scales). Scales had reported validity, and for our Wave 1 sample, a confirmatory factor analysis indicated good validity. All of the incremental and nonincremental fit indices revealed that the 22-factor model fit the data reasonably well (Comparative Fit Index = 0.92, Tucker-Lewis Index = 0.92, Root Mean Square Error of Approximation = 0.03). The 86 factor loadings also showed that the items loaded highly on their respective latent variables. The average factor loading for each of the 22 latent variables ranged from 0.66 to 0.90, with an overall average loading across all latent variables of 0.78. For our Wave 1 sample, Cronbach's alpha reliabilities ranged from .699 (variety) to .893 (intent to stay). The draft survey was reviewed by six outside nursing workforce experts and pilot tested by AD- and BS-educated RNs and first semester master's students. We made minor changes following these reviews.

To identify RN characteristics that predict completion of a BS or graduate degree in nursing, we performed logistic regression analyses on four groups: (a) AD RNs who earned an additional nursing degree versus those who did not by Wave 3; (b) AD RNs who earned an additional nursing degree or were currently enrolled in a nursing degree program, versus those who did not earn a higher degree or enroll in a program by Wave 3; (c) BS RNs who earned a nursing graduate degree versus those who did not by Wave 3; and (d) BS RNs who earned a graduate nursing degree or were enrolled in a graduate nursing degree program, versus those who did not earn a higher degree or enroll in a program by Wave 3.

Results

We present descriptive data for some variables not included in the regression because for those variables, cell sizes were too small for successful analyses. As shown in Table 1, most respondents were White (87% [AD] and 85.1% [BS]). More than half of the AD graduates were married (67.9%) and had children at home (57.8%). Fewer than half of BS graduates were married with children at home. As shown in Table 2, AD graduates were older ($M = 35.37$, $SD = 9.08$) than BS graduates ($M = 28.96$, $SD = 7.2$). From data not shown in Tables 1 and 2, based on Wave 3 data, for combined AD and BS degree holders, more than 75% of the NLRNs lived in metropolitan areas, with most (86.4%) working in

hospitals and in direct care positions (92.6%). More than half of the NLRNs (59%) had an AD, and 31% completed a BS as their pre-RN licensure nursing degree. Approximately 41% of all RNs intended to continue with formal nursing education in the future.

We did *t* tests for differences between those who were enrolled or completed an additional degree and those who did not for 22 scales (autonomy, RN-MD relations, distributive justice, workgroup cohesion, intent to stay at job, job satisfaction, local job opportunities, nonlocal job opportunities, mentor support, organizational commitment, organizational constraints, procedural justice, promotional opportunities, quantitative workload, supervisor support, variety, work motivation, family-work conflict, work-family conflict, search behavior, positive affectivity, and negative affectivity). There were significant differences between the groups for intent to stay (four-item scale with $\alpha = .893$), variety (three-item scale with $\alpha = .699$), work motivation (three-item scale with $\alpha = .791$), and positive affectivity (five-item scale with $\alpha = .852$). Those scales were included in the logistic regression models.

RNs With ADs

For AD graduates, we tested predictors of completing a BS, and in a separate analysis, we tested predictors of completing or being enrolled in a BS program. Table 3 shows predictors of completing a BS degree (Model A) and predictors of either obtaining a BS or being enrolled in such a program (Model B) by 3.5 to 4.5 years following graduation from an AD pre-RN licensure program. Having an AD and completing a BS degree or higher are more likely among those who are Black ($P = .007$, odds ratio [OR] = 3.66, 95% confidence interval [95% CI] = 1.42–9.45), not married ($P = .025$, OR = 2.06, 95% CI = 1.09–3.87), have more positive affectivity ($P = .012$, OR = 1.66, 95% CI = 1.12–2.45), reside in rural areas ($P = .002$, OR = 2.46, 95% CI = 1.37–4.39), have previous experience in non-health care settings ($P = .050$, OR = 1.71, 95% CI = 1.00–2.93), work in the ICU or step-down unit ($P = .085$, OR = 1.74, 95% CI = 0.93–3.27), and work during the day shift ($P = .007$, OR = 2.04, 95% CI = 1.21–3.43).

Predictors of either obtaining a BS degree or being enrolled in such a program by Wave 3 were age (younger more likely; $P = .053$, OR = 0.84, 95% CI = 0.70–1.00), being Black ($P = .006$, OR = 3.00, 95% CI = 1.37–6.61), having more positive affectivity ($P = .070$, OR = 1.31, 95% CI = 0.98–1.74), previous work experience in non-health care settings ($P = .048$, OR = 1.50, 95% CI = 1.00–2.24), working on the day shift ($P = .001$, OR = 1.94, 95% CI = 1.31–2.85), and higher work motivation ($P = .026$, OR = 1.38, 95% CI = 1.04–1.84) at Wave 1.

RNs With BS Degrees

For NLRNs whose pre-RN licensure degree was a BS, we used a logistic regression to identify predictors of those who completed a master's degree or higher in nursing (Table 4, Model A) and those who obtained a master's degree or were currently enrolled in such a program

Table 1. Demographic Characteristics of NLRNs With AD or BS Degree as Basic Prelicensure Education (N = 1,560)

Categorical variable	Response options	AD NLRNs (n = 917)		BS NLRNs (n = 643)	
		n	Valid %	n	Valid %
Race	White	782	87.0	543	85.1
	Black	49	5.5	32	5.0
	Asian or Other	68	7.6	63	9.9
Marital status	Married	623	67.9	293	45.6
	Not married	294	32.1	349	54.4
Children at home	Children at home	530	57.8	157	24.5
	No children at home	385	42.0	485	75.5
Geographic census designation	Metropolitan	715	78.0	566	88.0
	Rural	202	22.0	77	12.0
Overall health	Good/very good/excellent	872	95.1	617	96.1
	Poor/fair	45	4.9	25	3.9
BS degree in nursing-related field	Yes	20	2.2	13	2.0
	No	897	97.8	630	98.0
BS degree in nonnursing-related field	Yes	495	54.0	381	59.3
	No	422	46.0	262	40.7
Mother's highest education level (Wave 3)	BS or higher	161	18.3	195	31.7
	Some college	267	30.4	206	33.4
Father's highest education level (Wave 3)	BS or higher	207	24.0	258	42.2
	Some college	224	25.9	151	24.7
Current employment	In RN job requiring RN license	864	94.3	621	96.7
	Other	52	5.7	21	3.3
Currently holding more than one job for pay	Yes	129	14.5	62	9.8
	No	761	85.5	571	90.2
Work setting	Hospital	734	82.8	577	91.6
	All else	153	17.2	53	8.4
Work position	Direct care	804	90.3	605	95.7
	Nondirect care	86	9.7	27	4.3
Unit spent most of working time	ICU/step-down unit	191	21.6	205	32.4
	General unit	334	37.7	233	36.8
	Other	361	40.7	195	30.8
Typical work schedule	Day shift	398	45.1	208	33.1
	All other	485	54.9	421	66.9
Previous work experience in health care	Yes	224	24.3	315	49.0
	No	694	75.7	328	51.0
Previous work experience not in health care	Yes	322	35.1	197	30.6
	No	595	64.9	446	69.4
Formal education tuition reimbursement	Yes	757	85.7	553	87.5
	No	126	14.3	79	12.5
Formal education tuition reimbursement (Wave 2)	Yes	699	79.8	524	84.9
	No	177	20.2	93	15.1
Formal education tuition reimbursement (Wave 3)	Yes	670	78.7	465	79.6
	No	181	21.3	119	20.4
Dependent variables					
AD NLRNs who have completed a BS degree or higher from Wave 1 to 3	Yes	155	9.4		
	No	1,493	90.6		
AD NLRNs who have completed a BS degree or higher or are enrolled in a BS program in nursing from Wave 1 to 3	Yes	357	21.7		
	No	1,291	78.3		
BS NLRNs who have completed a master's degree or higher from Wave 1 to 3	Yes			53	3.2
	No			1,595	96.8
BS NLRNs who have completed a master's degree or higher or are enrolled in a master's program in nursing from Wave 1 to 3	Yes			276	16.7
	No			1,372	83.3

Note. All data are from Wave 1 unless noted otherwise.

(Table 4, Model B) by 3.5 to 4.5 years following graduation from a BS pre-RN licensure program. As shown in Table 4 (Model A), predictors of obtaining a

master's degree or higher were being Black ($P = .096$, $OR = 4.05$, $95\% CI = 0.78-20.98$), previous non-health care work experience ($P = .053$, $OR = 2.60$, $95\% CI =$

Table 2. Demographic Characteristics of NLRNs With AD or BS Degree as Basic Prelicensure Education ($N = 1,560$)

Continuous variables	AD NLRNs ($n = 917$)				BS NLRNs ($n = 643$)			
	<i>M</i> (<i>SD</i>)	Min	Max	Range	<i>M</i> (<i>SD</i>)	Min	Max	Range
Personal characteristics								
Age in 2006	35.37 (9.08)	21.00	69.00	48.00	28.96 (7.2)	22.00	56.00	34.00
Hours of voluntary overtime	3.45 (4.75)	0.00	36.00	36.00	3.40 (4.75)	0.00	30.00	30.00
Work attitudes								
Positive affectivity	3.57 (0.68)	1.00	5.00	4.00	3.63 (0.66)	1.20	5.00	3.80
Intent to stay	3.49 (0.92)	1.00	5.00	4.00	3.37 (0.98)	1.00	5.00	4.00
Variety	3.33 (0.72)	1.33	5.00	3.67	3.41 (0.69)	1.00	4.67	3.67
Work motivation	2.05 (0.68)	1.00	4.67	3.67	2.04 (0.71)	1.00	4.33	3.33
Income								
Total yearly income (Primary job)	\$ 43,790 (\$16,685)	0.00	\$150,659	\$150,659	\$ 45,815 (\$12,914)	0.00	\$107,000	\$107,000
Total yearly income (primary job; Wave 2)	\$49,279 (\$17,366)	0.00	\$133,000	\$133,000	\$50,715 (\$15,529)	0.00	\$120,000	\$120,000
Total yearly income (secondary job and others)	\$1,971 (\$8,212)	0.00	\$100,000	\$100,000	\$1,424 (\$6,884)	0.00	\$90,000	\$90,000
Total yearly income (secondary job and others; Wave 2)	\$2,330 (\$9,060)	0.00	\$120,000	\$120,000	\$2,314 (\$9,273)	0.00	\$90,000	\$90,000
Total yearly income (spouse)	\$32,825 (\$34,049)	0.00	\$250,000	\$250,000	\$25,657 (\$84,538)	0.00	\$2,000,000	\$2,000,000
Total yearly income (spouse; Wave 2)	\$35,397 (\$36,095)	0.00	\$320,000	\$320,000	\$29,532 (\$52,032)	0.00	\$900,000	\$900,000

Note. All data are from Wave 1 unless noted otherwise.

0.99–6.83), holding more than one job for pay ($P = .069$, $OR = 3.98$, $95\% CI = 0.90$ – 17.70), having a higher total yearly income from secondary and other jobs ($P = .097$, $OR = 0.99$, $95\% CI = 0.97$ – 1.00), having lower intent to stay at the current job ($P = .019$, $OR = 0.59$, $95\% CI = 0.37$ – 0.92), and higher variety in one's job ($P = .060$, $OR = 1.96$, $95\% CI = 0.97$ – 3.96).

RNs were more likely to complete a nursing master's degree or higher or were currently enrolled in school (Model B) if they lived in a nonrural area ($P = .052$, $OR = .40$, $95\% CI = 0.16$ – 1.01), worked on the dayshift ($P = .024$, $OR = 1.80$, $95\% CI = 1.08$ – 2.99), worked more voluntary overtime ($P = .004$, $OR = 1.07$, $95\% CI = 1.02$ – 1.12), and reported more variety in their jobs ($P = .042$, $OR = 1.50$, $95\% CI = 1.02$ – 2.20).

In addition to the quantitative findings, we asked responders an open-ended question, "What are the barriers to you going back to school and getting an additional nursing degree?" If responders included more than one barrier, we counted only the first barrier noted. Most responders (74.7%) answered the question. The two most common responses were "cost" (25.5%) and "family/children" (19.5%). Other responses in order of frequency were "lack of time" (16.6%), "not interested in getting a degree" (7.5%), and "age—too old" (4.7%). Other reasons included "higher degree not a good value/few financial or employer incentives" and "like current job." Only 0.6% identified "no or few local programs." Of those reporting cost and time as significant barriers, many noted that their

work schedule, particularly getting the same day off each week, made scheduling classes very difficult. The rank order of responses did not differ between AD and BS groups.

Discussion

Achieving the IOM goal that 80% of U.S. RNs have a BS degree in nursing by 2020 (IOM, 2011) will require substantial investment in human capital. In 2008, of the 2,596,599 RNs employed in nursing, about 50% had a BS degree (HRSA, 2010b). Fully 30% of working RNs (778,879) will need to obtain a BS degree to meet the IOM goal. In 2010, 55,414 U.S. BS-prepared RNs took the National Council of State Boards of Nursing (NCSBN) examination—a proxy for the number of BS degree graduates (NCSBN, 2010). It is unlikely that BS programs will double the number of students they graduate over the next decade, and even if they do, the United States still will not meet the IOM goal. Thus, achieving this goal will require transitioning AD graduates to BS programs.

In 2008, about 11% of working RNs had a master's degree or higher (HRSA, 2010b). Similarly, the IOM has set a goal to double the current number of RNs with doctorates by 2020 (IOM, 2011). In 2008, there were about 21,304 (<1.0%) doctoral-prepared RNs with active licenses (HRSA, 2010b). Thus, we will need to add at least 21,000 doctoral-prepared RNs to the nursing workforce in the next 8 years. These numbers do not consider the educational achievement of those obtaining their basic RN education between now and 2020.

Table 3. Factors Predicting Those AD Nurses Who Obtain BS or Higher Degrees or Are Enrolled in Those Nursing Programs (*n* = 917)

Variable (reference category)	Model A (Completed BS or higher degree in nursing)			Model B (Completed BS or higher or are enrolled in BS program in nursing)		
	OR	95% CI		OR	95% CI	
		LL-UL	P		LL-UL	P
Personal characteristics						
Age	0.85	0.66–1.09	.195	0.84	0.70–1.00	.053*
Age in 2006	1.00	1.00–1.01	.369	1.00	1.00–1.00	.193
Race (White)						
Black	3.66	1.42–9.45	.007 [†]	3.00	1.37–6.61	.006 [†]
Asian or other	1.19	0.45–3.13	.731	0.96	0.47–1.95	.909
Not married (Married)	2.06	1.09–3.87	.025 [†]	1.41	0.87–2.27	.163
Children at home (No children at home)	0.72	0.40–1.29	.271	0.84	0.55–1.29	.420
Positive affectivity	1.66	1.12–2.45	.012 [†]	1.31	0.98–1.74	.070*
Rural geographic area (metropolitan)	2.46	1.37–4.39	.002 [†]	1.19	0.75–1.89	.462
Previous work experience in health care (no)	0.87	0.48–1.56	.630	0.79	0.51–1.25	.315
Previous work experience in non-health care setting (no)	1.71	1.00–2.93	.050*	1.50	1.00–2.24	.048 [†]
Hold more than one job for pay (no)	1.43	0.67–3.05	.350	1.39	0.77–2.50	.270
No other nonnursing degrees (no)	1.45	0.84–2.48	.181	1.01	0.68–1.50	.964
Mother's degree: some college (no; Wave 3)	1.38	0.74–2.56	.314	1.00	0.63–1.58	.983
Mother's degree: BS or higher (no; Wave 3)	1.83	0.87–3.86	1.83	1.47	0.84–2.58	.181
Father's degree: some college (no; Wave 3)	0.82	0.43–1.56	.550	0.90	0.56–1.44	.645
Father's degree: BS or higher (no; Wave 3)	0.96	0.46–1.97	.900	0.76	0.44–1.32	.334
Total yearly income	1.00	1.00–1.00	.726	1.00	1.00–1.00	.263
Total yearly income (Wave 2)	1.00	1.00–1.00	.117	1.00	1.00–1.00	.360
Total yearly income: secondary and other jobs	1.00	1.00–1.00	.856	1.00	1.00–1.00	.641
Total yearly income: secondary and other jobs (Wave 2)	1.00	1.00–1.0	.700	1.00	0.99–1.00	.189
Total yearly income: spouse	1.00	1.00–1.00	.581	1.00	1.00–1.00	.426
Total yearly income: spouse (Wave 2)	1.00	1.00–1.00	.240	1.00	1.00–1.00	.349
Work attributes						
Unit spent most of time working						
ICU or step-down (all other units)	1.74	0.93–3.27	.085*	1.15	0.71–1.86	.573
General work unit (all other units)	1.20	0.66–2.19	.548	0.92	0.60–1.43	.719
Day shift (all other shifts)	2.04	1.21–3.43	.007 [†]	1.94	1.31–2.85	.001 [†]
Voluntary overtime	0.98	0.93–1.04	.498	0.98	0.94–1.02	.289
Work attitudes						
Intent to stay	0.86	0.65–1.14	.291	1.01	0.82–1.26	.862
Variety	0.99	0.69–1.42	.956	1.11	0.85–1.45	.457
Work motivation	1.02	0.70–1.49	.911	1.38	1.04–1.84	.026 [†]

Note. All data are from Wave 1 unless noted otherwise. LL = lower limit; UL = upper limit.

* $P < .10$.

[†] $P < .05$.

Although RNs are unevenly distributed across the United States, and the ratio of RNs to population varies from state to state with 1,173 per 100,000 population in South Dakota to slightly more than half that number (622 per 100,000 population) in Texas, the variation in the percentage of RNs with a graduate-level education by state is not as dramatic. For example, 16.4% of California RNs have graduate degrees compared with 11.1% in Kansas (authors' calculation from National Sample Survey of Registered Nurses [NSSRN] 2008 data). Among recent graduates, 38.7% of Californians compared with 49% of Texans have a BS as their highest degree (authors' calculation from NSSRN 2008 data). Despite this, analysis of NSSRN data indicates that there is a

geographic variation in education levels among hospital RNs (Blustein, 2011). For hospitals in more educated counties (those with a percentage of college graduates >29.3%), there is a higher percentage of BS-educated RNs, compared with hospitals in less-educated counties. This is consistent across rural, micropolitan, and metropolitan areas (Blustein, 2011). Regional and state analyses show that rural areas tend to have a smaller percentage of highly educated RNs (Brewer & Watkins, 2011; HRSA, 2010b). This geographic variation may require different geographical approaches to encourage additional education for RNs.

The Robert Wood Johnson Foundation and other philanthropies have committed to achieving the IOM

Table 4. Factors Predicting Those BS-prepared Nurses Who Obtain Master's or Higher Degrees or Are Enrolled in Those Nursing Programs (*n* = 643)

Variable (reference category)	Model A (completed nursing master's or higher)			Model B (completed nursing master's or higher or enrolled in program)		
	95% CI			95% CI		
	OR	LL-UL	P	OR	LL-UL	P
Personal characteristics						
Age	1.03	0.56–1.89	.932	0.92	0.65–1.30	.639
Age in 2006	1.00	0.99–1.01	.860	1.00	1.00–1.01	.763
Race (White)						
Black	4.05	0.78–20.98	.096*	1.32	0.43–4.07	.627
Asian or other	0.79	0.16–3.82	.768	1.40	0.68–2.88	.364
Not married (married)	0.47	0.14–1.62	.234	1.04	0.55–1.97	.901
Children at home (no children at home)	0.63	0.18–2.23	.478	0.95	0.48–1.86	.873
Positive affectivity	1.10	0.53–2.28	.793	1.00	0.70–1.45	.984
Rural geographic area † (metropolitan)	–	–	–	0.40	0.16–1.01	.052*
Previous work experience in health care (no)	0.52	0.19–1.42	.201	1.04	0.62–1.75	.875
Previous work experience in non-health care setting (no)	2.60	0.99–6.83	.053*	0.96	0.56–1.66	.889
Hold more than one job for pay (no)	3.98	0.90–17.70	.069*	1.24	0.48–3.19	.651
No other nonnursing degrees (no)	0.57	0.19–1.70	.316	0.87	0.48–1.56	.630
Mother's degree: some college (no; Wave 3)	0.65	0.19–2.18	.483	0.63	0.35–1.13	.118
Mother's degree: baccalaureate or higher (no; Wave 3)	1.33	0.38–4.64	.650	0.83	0.44–1.56	.557
Father's degree: some college (no)	1.59	0.44–5.73	.477	1.33	0.71–2.50	.379
Father's degree: baccalaureate or higher (no)	1.30	0.35–4.80	.691	1.06	0.56–2.00	.856
Total yearly income	1.00	1.00–1.01	.455	1.00	1.00–1.00	.235
Total yearly income (Wave 2)	1.00	0.99–1.00	.100	1.00	1.00–1.00	.819
Total yearly income: secondary and other jobs	1.00	0.99–1.01	.983	1.00	1.00–1.00	.829
Total yearly income: secondary and other jobs (Wave 2)	0.99	0.97–1.00	.097*	1.00	0.99–1.00	.228
Total yearly income: spouse	1.00	1.00–1.00	.461	1.00	1.00–1.00	.533
Total yearly income: spouse (Wave 2)	1.00	1.00–1.00	.544	1.00	1.00–1.00	.843
Work attributes						
Unit spent most of time working						
ICU or step-down (all other units)	0.58	0.19–1.77	.339	1.15	0.63–2.09	.651
General work unit (all other units)	0.58	0.19–1.70	.317	0.92	0.52–1.66	.791
Day shift (all other shifts)	1.53	0.56–4.17	.403	1.80	1.08–2.99	.024†
Voluntary overtime	1.04	0.95–1.13	.410	1.07	1.02–1.12	.004†
Work attitudes						
Intent to stay	0.59	0.37–0.92	.019*	0.82	0.64–1.06	.127
Variety	1.96	0.97–3.96	.060*	1.50	1.02–2.20	.042†
Work motivation	1.19	0.60–2.33	.624	1.06	0.76–1.50	.721

Note. All data are from Wave 1 unless noted otherwise. LL = lower limit; UL = upper limit.

* $P < .10$.

† $P < .05$.

‡ Cell size too small to successfully complete analysis.

goals, and the Health Resources and Services Administration has funding to promote nursing education. About 40% of RNs report using loans to pay for basic nursing education, but this group includes RNs who attended school over the last 50 years (at least; HRSA, 2010b). Approximately 70% of more recent graduates report using loans to pay for basic education (authors' calculation from unpublished raw data). In addition to the substantial costs of tuition and fees, those who attend school full time defer wages that could otherwise be earned. As policy makers, philanthropists, and government decide how to invest limited resources to achieve these education goals, information regarding which characteristics predict

enrollment and successful completion of education programs is invaluable.

Some of our findings include RN characteristics such as age, race, marital status, and parents' education levels. These cannot be affected by government policies or philanthropic interventions, but they predict attainment of higher education. Similar to the findings of others who found that personal characteristics such as age (Delaney & Piscopo, 2004; Iava, 1994; Nevill & Chen, 2007), race (HRSA, 2010b), and self-efficacy (Plunkett et al., 2010) predict obtaining higher education, we found that younger (Iava, 1994), unmarried nurses with higher positive affectivity and work motivation and previous non-health care work experience are more likely to return

to school for a BS degree. In addition, although it is encouraging that Black RNs are more likely to return to school for a BS degree than nurses from other racial groups, Hispanic RNs continue to be underrepresented among RNs with advanced degrees (HRSA, 2010b). Regarding parents' education, our findings are contrary to the findings for nonnursing professionals for whom this factor was positively associated with pursuit of additional education (Choy, 2001; Hahs-Vaughn, 2004; Nevill & Chen, 2007). Researchers conducting these contradictory studies may not have controlled for other factors associated with pursuing additional education, as we did. Further research is needed to explore this finding that parents' education levels are not associated with RNs' educational achievement.

Our findings also highlight the significance of geographic location. Specifically, we found that AD-prepared RNs who lived in rural areas at the time of graduation are more likely to obtain a BS than those from urban areas 3.5 to 4.5 years after graduation from AD programs. This was somewhat surprising because there is generally less access to BS programs in rural areas. In a post hoc analysis, we found that at Wave 1 about 40% of those RNs who reported living in rural areas had, by Wave 3, moved to nonrural areas and also reported obtaining or being enrolled in a BS or higher degree program. The mechanism that drives RNs who live in rural areas following their pre-RN licensure education to obtain higher education requires further research. Some have found that increasing employability is a driver for obtaining additional education (Bahn, 2007). It might be that these RNs move to nonrural areas and must obtain additional education to increase their employability or that RNs move to urban areas to obtain easier access to degree programs.

In terms of work attributes that may contribute to RNs pursuing higher education, working in an intensive care unit (ICU) or in a step-down unit and on a day shift, as well as reporting having more variety in one's job, predicted RNs' completion of additional education. Future studies should explore in more detail how these attributes facilitate RNs' completion of higher education. It might be that more stimulating and complex work environments motivate RNs to return to school. It is also possible that some types of units and shifts offer more scheduling flexibility than others. Factors that uniquely predicted obtaining a master's degree for the RNs with a BS degree included holding more than one job for pay, working more voluntary overtime, and earning higher income. It might be that these RNs have more financial resources to pursue additional education; cost was identified as a major barrier to returning to school from our open-ended question, and this is consistent with previous literature (Delaney & Piscopo, 2004; Iava, 1994; Krawczyk, 1997; Thompson, 1992; Zuzelo, 2001). Prior research also identified higher earnings as a motivating factor for pursuing graduate education (Buchanan et al., 1992; Smith, 1992). Further, lower intent to stay in one's job, which is often related to lower levels of job

satisfaction, was related to obtaining a master's degree in this and other studies (Kalman et al., 2009; Pelletier et al., 1998; Warren & Mills, 2009).

There is a group of RNs who are not interested in returning to school. As one responder said, "I like my current job. I feel no need to go back to school to prepare myself for a different kind of job that I am not interested in obtaining." However, if the existing evidence that having a BS makes a difference in patient outcomes (Aiken et al., 2003; Estabrooks et al., 2005; Friese et al., 2008) is accurate, these nurses should pursue additional education. Getting them to do so will be a formidable challenge. Funders should focus on those RNs who are interested in returning to school to either improve their direct patient care skills or train for different positions and who cite barriers that government and philanthropy can address.

We were surprised at the number of responders who said "age" was a barrier. The average age of AD responders was 41 years (35 in 2006) with a standard deviation of 9, indicating that many are in their 50s. The cost-benefit ratio of returning to school and its potential return on the investment in the time left before retirement may be inadequate, particularly when many RNs attend school part-time. BS responders were 34 years old (29 in 2006) with a standard deviation of 7. Similarly, BS graduates may view themselves as "old" and not want to return to school and further delay their career. Developing accelerated programs that minimize the time spent in school may also help. For example, academic bridge programs that shorten the time between completing pre-RN licensure nursing education and completing an additional nursing degree may encourage NLRNs to maximize their educational investment by returning to school sooner.

Recommendations

Meeting the IOM goals will require a substantial investment by RNs of time and money, as well as government and philanthropic investment. The cost of returning to school was identified as a major barrier, although a modifiable one. Increasing scholarships and other financial incentives for returning to school should be the highest priority for funders. Developing educational policy that makes returning to school easier and more efficient in terms of program articulation and accepting prior credits may also minimize barriers, as well as costs, by reducing repetition of credits and courses.

It is likely that those who return to school will need to continue to work. Both BS and graduate programs must schedule courses at times and in places that are convenient for RNs. Similarly, employers must be flexible with scheduling so that RNs can have consistent days off to attend school. As one RN said, "They [employer] now state they will not be flexible with using a part-time schedule and that nurses will need to arrange for the degree seeking education around their present work schedules." Employers may be more accommodating toward coordinating work and study schedules if

institutional funding incentives are offered for advancing the education of its RNs. Increasing the accessibility of education for working RNs may be achieved through academic–clinical partnerships that employ a mentorship model as described by Warren and Mills (2009). Such a model would identify RNs interested in obtaining advanced education and support them in enrolling and completing a nursing degree program with tuition reimbursement and scholarship funds. Similarly, Internet-based and worksite classes may help in easing scheduling conflicts. Although Internet-based programs clearly offer great flexibility for students, some responders voiced indecision about whether such programs would provide them with the quality of education that they want.

Four to five years following graduation, many responders said they planned to return to school within the next 12 months (32.9%) or within the next 5 years (28.5%) when asked, “Do you plan to continue your education in a formal nursing program in the future?” In response to the open-ended question about barriers, many responders wrote, “Plan to return to school.” Further research is needed to identify ways to facilitate returning to school soon after RNs graduate from their pre-RN licensure degree program.

Limitations

As with all self-report surveys, it is possible that responders did not provide accurate responses. Questions were benign, and it seems unlikely. Although the response rate was 59%, response bias is possible. We view our first (2006) panel as the “gold standard” in representing the U.S. population because of our sampling strategy. Responders to the Wave 3 survey reported here are similar to new graduate responders to the 2008 National Sample Survey of Registered Nurses (HRSA, 2010b). Hispanic RNs (<5%) were slightly less likely to respond to our Wave 3 survey, which included questions regarding additional degrees, compared with those who initially responded in 2006.

Conclusion

By 4 to 5 years following graduation, more than 16% of the NLRNs licensed in 2004–2005 are in school or have graduated from a nursing program in addition to their pre-RN licensure degree. A substantial number indicate that they plan to return to school. Meeting the IOM goal of 80% BS RNs by 2020 is likely achievable with government and philanthropic support to overcome the barriers identified by AD graduates. Further, many BS graduates plan to return to school; they also need support to overcome the barriers that they identified.

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