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DNPs' labor participation, activities, and reports of degree contributions

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ABSTRACT

Background: There is limited information about the careers, roles and views of doctor of nursing practice (DNP) graduates.

Method: This study describes the labor participation, post-graduation work activities, and perceptions of 1,308 DNP members of three professional nursing organizations who completed a 2017 survey (32% response rate).

Findings: More than 70% of respondents reported substantial improvements in quality improvement, evidenced based practice and leadership abilities. Twenty-two percent of respondents noted the degree was required by their employer and most of these held educational positions. Postgraduate participation in activities associated with DNP education, assessment of personal impact and degree necessity varied by position title and organization membership.

Discussion: These differences have implications for nursing associations and professional solidarity.

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Introduction

The number of nurses obtaining the Doctor of Nursing Practice (DNP) degree continues to grow, and recommendations have been made to make the degree required for advanced practice by 2,025 (American Association of Colleges of Nursing, 2015; National Organization of Nurse Practitioner Faculties, 2017; Rosseter, 2017). Questions about where and how DNP graduates function after graduation, outcomes of their practice and graduates' views about the degree have been raised in educational, practice, and policy settings (Alexander, 2016; Broome, Riner, & Allam, 2013; Mancuso, Udlis, & Anbari, 2017; Newland, 2016; Udlis & Mancuso, 2015). Answering these types of questions could help guide the continued development of DNP educational programs, program funding, and public policies regarding the DNP as a requirement for advanced practice registered nursing (APRN) licensure.

To date, efforts to secure data about the DNP have been hampered by study design conditions such as nonrandomization, restricted subject pools (e.g., one school's graduates or self-selected reporting to a web site), restricted time since graduation and sponsorship (Carter & Jones, 2017). Self-reports of competency have also been explored (Christiansen &

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Champion, 2018). No design can answer all of the many questions about the DNP but because there have been 20,582 DNP graduates from 2006 to 2016 according to the American Association of Colleges of Nursing (Rosseter, 2017), it was possible for us to design a study of aspects of postgraduation activities from a large pool of graduates with varied years of postdegree experience by using professional membership lists to contact graduates.

Purpose. The aims of this report are to (1) describe the labor participation and employment of DNP graduates who are members of at least one of three professional nursing organizations (2) describe these DNPs' reports of work activities since graduation and (3) describe their reports of the personal contribution of degree attainment and belief about the need for every APRN to obtain the degree.

Methods

Design and Method

We used a descriptive survey design methodology. In 2017, a paper survey with an option to complete the survey at a secure REDCap website (Harris et al., 2009) was sent to 5,830 nurses. Two reminders, which included an additional copy of the survey, were sent at approximately 4-week intervals. The method was chosen because e-mail addresses are not provided by most organizations or, if they are, many are incomplete because of opt out provisions thereby potentially biasing the sample. In addition, numerous studies in which e-mail and mail options were used found a four or five to one return advantage for the mail option for this type of subject (A. F. Minnick, Norman, & Donaghey, 2013; A. F. Minnick, Norman, Donaghey, Fisher, & McKirgan, 2010).

Subjects

Subjects were identified through the use of mailing lists from three organizations which together have a broad spectrum of DNP prepared members: the American Organization of Nurse Executives (AONE), the American Association of Nurse Practitioners (AANP) and the American Association of Nurse Anesthetists (AANA). The AONE was unable to provide a random selection of only DNP holders thus oversampling (n = 2,606) was employed in an effort to recruit at least 500 potential AONE DNP subjects. The AANP provided a randomly selected list of 2,000 members who indicated they held a DNP. The AANA provided a list of 1,283 members, the known universe of DNP holders in this organization. Postal returns from the first mailing indicated "address unknown" status for 1.3% of AONE, 1.0% of AANP and 0.4% of AANA members.

The study was approved as "exempt" by the Institutional Review Board. The invitation letter stated that the study was to provide a national description of scholarship and outcomes related to the DNP and that participation was voluntary. Completion of the survey served as consent and no personal identifying links were collected.

Instrument

The 26-item instrument included items about the respondent's DNP project experience, scholarship before and after earning a DNP, employment since earning the DNP and views about the contribution and necessity of the degree. (Items concerning the DNP project experience are contained in a second paper under development). The instrument's employment and scholarship questions were adopted from the authors' previous work and those used in national surveys such the National Sample Survey of Registered Nurses series (A. Minnick, 1993; A. Minnick, Roberts, Curran, & Ginzberg, 1989; Roberts, Minnick, Ginzberg, & Curran, 1989; U.S. Department of Health Resources and Services Administration, 2010).

The eight role experience items were based on a review of the DNP Essentials and literature that suggested the potential contributions of DNP attainment to the role readiness of advance practice nurses (American Association of Colleges of Nursing, 2006). Subjects were asked to indicate if they had been a participant or leader in each of these activities: starting an APRN clinic; designing and implementing a quality improvement project; facilitating change in an organization; changing local policy; changing state policy; changing federal or international policy; obtaining an externally funded research grant or an educational training grant.

The five ability items (organizational change, quality improvement, evidence-based practice, leadership, and policy setting) were based on the sources cited above as well as an earlier curricular review (A. F. Minnick, et al., 2013). Participants were asked to rate the impact of DNP education on his/her ability using a scale of one to five (1 = none/no impact, 5 = profound impact). The item about the respondent's view of the necessity for every APRN to obtain a DNP included a scale of one to ten (1 = not a necessity, 10 = a necessity). The respondent was asked to consider the costs and benefits of degree attainment. One open-ended question asked, "What, if any, is the greatest contribution obtaining the DNP has made to you?" Subjects were asked to respond to current employment questions based on the job in which most time was spent.

The survey was tested with 8 DNP holders to determine completion time (15 minutes on average), language currency, readability, and face validity using approaches modified from Dillman (Dillman, Smyth, & Christian, 2014). These approaches included timing, respondent marking of ambiguous words, phrases and answer options during testing, and postadministration item debriefing.

Analytic Methods

Statistical analyses were performed using IBM SPSS software (version 24) (IBM SPSS Statistics, 2016). Frequency distributions of item responses for the entire sample and by membership type were generated. Cross-tabulations and chi-square tests of independence were used to test for difference by membership type. Post hoc comparisons of statistically significant overall tests were Bonferroni-corrected for the number of comparisons made.

The coding schema for the open-ended question about greatest contribution was developed based on two researchers' independent reading of 100 randomly drawn answers. This approach resulted in eight category codes. A third researcher then coded all answers independently. One hundred subjects' responses to the open-ended question were then coded by another researcher with a finding of 92% inter-rater agreement.

During coding, it was noted that 44.5% of respondents included more than one contribution in the answer. These additional answers were then summed into an overall distribution. No large distribution differences were noted in the overall frequency of these summed answers with the exception that it distorted the frequency with which respondents indicated the degree had not contributed in any way/had a negative effect. These respondents did not indicate any secondary contribution thus to preserve accurate representation of this sector, the first contribution listed by all respondents was used to calculate the distribution statistics reported here.

All data submitted by mail were subjected to a 20% double entry accuracy examination; less than 0.01% of data were found to have been entered inaccurately and there was no pattern of inaccuracy. The next step was to check all data for outliers and/or inconsistencies. The rate was less than 0.01%. Corrections were made by re-examining these surveys and, if resolution was not possible, the data element was left blank.

Findings

Survey Response Rates

After three mailings, the overall return rate was 32% (n = 1,846). The AONE response rate was 26%, the AANP response rate was 37% and the AANA response rate was 35% based on the organization to which respondents indicated they belonged. Fifteen respondents indicated they belonged to AANA and AONE and 18 belonged to both AANA and AANP. Nineteen belonged to AANP and AONE. One respondent belonged to all three organizations. Given this low but almost equal rate of dual membership, statistics were generated based on membership in each organization.

Respondents Represented All Areas of the Country

The response rate was almost equal across all standard American Hospital Association geographic divisions with the East North Central area (Ohio, Indiana, Illinois, Michigan, and Wisconsin) achieving the highest response rate (33.4%) and the West South Central (Arkansas, Louisiana, Oklahoma, and Texas) the lowest 27.3%. The other eight regions attained response rates in the 31% to 32% range. The response by geographic division was also representative of the country in proportion to the mailing list base: 4.8% New England, 11.1% Mid-Atlantic, 21.3% South Atlantic, 15.7% East North Central, 7.6% East South Central, 9.3 West North Central, 12.7% West South Central, 7.4% Mountain, and 10.3% Pacific.

Out of all the 1,846 respondents, 1,308 (70.8%) indicated holding a DNP. These DNP subjects' data were used in the analyses that follow.

Description of Respondents

There was broad representation of personal characteristics (Table 1). Differences in these characteristics by organizational membership were consistent with what is known about the organizations' members (e.g., AANA is known to have a larger proportion of male members than AONE or AANA). These organizational differences in personal characteristics such as age and years since degree attainment led to our decision to present all results in terms of organizational membership as well as for the whole. Variation in members' positions by organization led to a decision to present results by position.

Aim 1: Labor participation and employment of DNP graduates

Almost every respondent (98%) reported being employed. Reasons for not being employed included: retirement (0.8%), health/dependent responsibilities (0.3%), inability to find a job (0.4%), and not working by choice (0.2%). (Numbers do not sum to 2% due to rounding.) No one reported being unemployed because of school attendance. Almost every participant (98.5%) indicated the position(s) held currently required nursing expertise. Respondents indicated the following reasons for holding employment in positions that do not require nursing expertise: salary, more rewarding professionally, and personal reasons/interests. None reported that hours or difficulty in finding a suitable nursing position were reasons for holding a nonnursing position. Of those who reported holding employment positions not requiring nursing expertise, almost all worked in positions in health-related organizations.

The extent of labor participation was concentrated in two categories: full-time employment in a single job (59.5%) and full-time employment in one job and other part-time employment (31.5%; Table 2). Smaller percentages reported holding a single part-time job (3.7%) or more than one part-time job (3.5%) or some other

Table 1 – Characteristics of the DNP Subjects by Organizational Membership (n = 1,308)

Characteristic	Membership % (n)			
	AONE (n = 253)	AANP (n = 642)	AANA (n = 427)	All (n = 1,308)*
Gender				
Male	14.7 (37)	10.6 (67)	33.9 (143)	19.1 (246)
Female	84.5 (212)	89.2 (563)	65.9 (278)	80.6 (1,041))
Don't wish to identify	0.8 (2)	0.2 (1)	0.2 (1)	0.3 (4)
Ethnic background				
Hispanic or Latino/a	2.5 (6)	5.0 (31)	4.9 (20)	4.5 (57)
Racial background				
American Indian or Alaska native	0.8 (2)	1.2 (8)	2.1 (9)	1.4 (18)
Asian	3.2 (8)	3.7 (24)	3.5 (15)	3.7 (48)
Black or African American	2.0 (5)	4.5 (29)	3.3 (14)	3.7 (48)
Native Hawaiian or other Pacific Islander	0.0	0.3 (2)	0.7 (3)	0.5 (6)
White	90.5 (229)	87.4 (561)	88.5 (378)	88.0 (1,151)

	Mean years (SD; range)			
	AONE	AANP	AANA	All
Age	55.5 (7.4; 28–75)	49.0 (11.1; 25–77)	46.5 (10.6; 26–69)	49.3 (10.7; 25–77)
Age at DNP graduation	51.9 (7.4; 28–74)	45.0 (10.5; 24–74)	42.6 (10.2; 24–63)	45.4 (10.3; 24–74)
Years since DNP attained	3.6 (2.5; ≤1–15)	4.0 (3.0; ≤1–25)	3.9 (2.4; 1–18)	3.9 (2.8; ≤1–25)

* The number of subjects varied slightly because all subjects did not answer every item. Racial background sums to more than 100% because subjects were instructed to indicate all that apply. The total (all) is 1,308 because a few subjects indicated membership in more than one organization. *Note.* AANA, American Association of Nurse Anesthetists; AANP, American Association of Nurse Practitioners; AONE, American Organization of Nurse Executives.

arrangement such as "only work on demand" (1.8%). AONE members were more likely to hold a single full time job than AANP or AANA members.

Twenty-eight percent of respondents noted they worked in a setting in an area designated as underserved by at least one governmental agency; 65.6% indicated the setting was not so designated and 6.8% did not know the setting designation.

The position title of most respondents was either CRNA (26.9%) or nurse practitioner (34.9%; Table 2). Educational titles (faculty, dean/director or associate/assistant/director of nursing education, and continuing education coordinator/instructor) accounted for 17% of respondents. Eighteen percent of titles were administrator or assistant administrator of nursing or health agencies and services. No respondent reported working as a case manager and very few (<1%) reported working as a clinical nurse specialist, outcomes/quality improvement manager, researcher, or unit/assistant unit manager. Examples of titles held by slightly more of than 1% of all respondents are; school nurse, staff nurse, and nurse midwife. There were large differences in title by organizational membership consistent with the purpose of the organizations.

The estimated percent of time spent in direct patient care not involving staff supervision during a usual workweek was associated with position title. Very large medians and interquartile ranges in the overall responses as well as by organizational membership were noted (Table 2). To further explore responsibilities of respondents who indicated their title was CRNA or nurse practitioner, an additional analysis was performed. Of those who indicated the title CRNA, 15% indicated they spent ≤50% of their time in direct patient care not involving staff supervision during a usual workweek; 72% reported spending ≥90% of their time in such care. The corresponding percent of time in direct care for nurse practitioners were 8% (≤50% of their time) and 65% (≥90% of their time.)

Almost half (45.9%) of respondents held the same position at the time of survey completion as they had at the time they began their DNP program. Forty-seven percent had changed employment setting (Table 3). Over a third (36.7%) changed employment setting and position. In recognition of the potential effects of time since graduation, additional analyses based on those reporting ≤2 years since graduation, 2 to 4 years and 5 years or more since graduation were performed. Overall, time since graduation was associated with some small nonstatistically significant changes in employment at the ≥5 year period. Over one-third (34%) of respondents in this group indicated working in the same setting and position as when they completed the DNP degree. Approximately 14% indicated they were in the same position but had a different employer. These statistics are similar to those noted for all respondents (35.2% and 10.7%, respectively). Thirty-three percent had a different employer and

Table 2 – DNP Labor Participation by Organizational Membership (*n* = 1,252)

	% Membership			
Work participation	AONE (*n* = 240)	AANP (*n* = 614)	AANA (*n* = 413)	All (*n* = 1,252)*
Full time—1 job	75.4	52.9	60.5	59.5
Part time—1 job	1.3	4.6	3.6	3.7
Full time—1 job + part time other	20.8	36.2	30.0	31.5
>1 part time	2.1	3.9	3.9	3.5
Other	0.4	2.4	1.9	1.8
Setting	AONE (*n* = 235)	AANP (*n* = 601)	AANA (*n* = 404)	All (*n* = 1,225)*
Hospital	68.1	20.6	69.1	45.3
Nursing home/extended car	0.4	3.2	–	1.6
Nursing education	12.3	21.3	15.1	17.5
Public or community health	0.9	5.8	0.2	3.0
School health	–	1.0	–	0.5
Occupational/employee health	0.4	1.7	0.5	0.9
Ambulatory care	6.4	36.4	10.4	22.4
Insurance or private industry	–	0.8	–	0.4
Federal agency	1.3	4.2	2.2	3.1
State agency	–	0.7	0.2	0.4
Nursing or health professions association	2.1	0.2	1.7	0.7
Nonfederal health planning Agency/Association	–	–	–	–
Other	8.1	4.2	1.5	4.1
Position title				
Administrator/Assistant administrator of organization/facility/agency	35.6	2.5	2.9	8.8
Administrator/Assistant administrator of nursing	43.9	1.3	1.5	9.4
CRNA	0.4	1.2	78.0	26.9
Clinical nurse specialist	0.8	0.2	0	0.2
Continuing education coordinator or instructor	0.8	0.5	0.5	0.6
Dean/Director or associate/assistant dean/director of nursing education	3.3	4.9	5.6	4.7
Faculty	9.2	17.1	5.8	12.0
Nurse practitioner	1.7	70.0	4.1	34.9
Outcomes/QI manager	0.4	0.2	0.5	0.2
Researcher	0.4	0.3	0	0.3
Unit manager/assistant unit manager	1.3	0	1.0	0.6
Other	2.1	1.9	0.2	1.3
Median, IQR % time in patient care	0, 0–0	80, 25–99.7	90, 40–100	75, 10–100

* The number of subjects varied slightly because not all subjects answered both items. The total (all) is not the sum for the three organizations because a few subjects indicated membership in more than one organization and not every subject answered every question. *Note*. AANA, American Association of Nurse Anesthetists; AANP, American Association of Nurse Practitioners; AONE, American Organization of Nurse Executives.

different position. Eighteen percent worked in the same setting but in a different position.

Sixty-three percent of all respondents had the same employer since attaining the DNP. Twenty-eight percent had two employers and the remainder from 3 to 15. Fifty percent of those who had held a DNP for 5 years or more at the time of the survey had the same employer as that at DNP graduation.

The majority (59%) of respondents indicated the DNP degree was not required nor preferred by their current employers (Table 3). This percentage increased slightly when DNP graduates who did not have a master's degree prior to obtaining the DNP were removed from the analyses. AONE members were most likely to report the degree was not required but was preferred in obtaining/keeping their current position however, there was no statistically significant difference by organizational membership in percentage reporting the degree was required if members who were educators were retained in the analysis. Faculty was six times more likely than other positions to report the DNP was required for employment.

An additional analysis of answers of those respondents who had completed the degree 5 or more years prior to the study (*n* = 299) indicated a shift in the distribution of answers (52% reported the current employer neither required nor preferred the degree, 21.9% did not require but preferred the degree, and 26.2% required the degree). This shift to "required" was almost entirely driven by the fact that most persons in this category were faculty or educational administrators. More than two-thirds (68%) of these respondents indicated the degree was required unlike other 5 years or more since DNP completion respondents, e.g., 14.3% of CRNAs, 12.5% of

Table 3 – Employment Changes and Reported Degree Effect on Obtaining/Keeping Position by Organizational Membership and Position (*n* = 1,210)

	% Membership			
	AONE (*n* = 232)	AANP (*n* = 595)	AANA (*n* = 400)	All (*n* = 1,210)*
Position and employment changes between entering DNP and survey completion				
Same employment setting/same position	35.3	30.9	40.0	35.2
Different employment setting/same position	5.2	11.3	13.5	10.7
Different employment setting/different position	38.4	40.8	29.8	36.7
Same employment setting/different position	21.1	16.1	16.3	16.8
Did not work before DNP	–	0.8	0.5	0.6
DNP effect on ability to get/keep current position	*n* = 232	*n* = 606	*n* = 415	*n* = 1,244
None, not required nor preferred	48.9	59.9	65.8	59.6
Not required but preferred	35.0	21.1	14.9	21.9
Required	16.0	19.0	19.3	18.5

	Position			
	Faculty/Educational Administrator	Administrator	CRNA	Nurse Practitioner
Position and employment changes between entering DNP and survey completion	*n* = 209	*n* = 214	*n* = 321	*n* = 415
Same employment setting/same position	19.6	36.4	43.3	36.6
Different employment setting/same position	5.3	5.6	14.0	14.2
Different employment setting/different position	52.6	33.6	26.2	38.6
Same employment setting/different position	22.5	24.3	15.9	9.4
Did not work before DNP	–	–	0.6	1.2
DNP effect on ability to get/keep current position	*n* = 213	*n* = 221	*n* = 331	*n* = 425
None, not required nor preferred	12.7	51.1	76.4	76.5
Not required but preferred	24.9	37.1	13.0	17.9
Required	62.4	11.8	10.6	5.6

* The total (all) is slightly higher than the sum for the three organizations because a few subjects indicated membership in more than one organization. Position categories were combined such that "faculty/educational administrator" includes continuing education coordinator/instructor (*n* = 7), and dean/director or associate/assistant dean/director of nursing education (*n* = 53), and faculty (*n* = 129). "Administrator" includes administrator/assistant administrator of organization/facility/agency (*n* = 81) and administrator/assistant administrator of nursing (*n* = 98). *Note.* AANA, American Association of Nurse Anesthetists; AANP, American Association of Nurse Practitioners; AONE, American Organization of Nurse Executives.

administrators, and 9.6% of NPs in this group indicated the DNP was required.

Setting varied by organizational membership in almost every category. "Other" settings included consulting firms and self-employment. Approximately 45% of respondents indicated they worked in a hospital (including hospital systems); however, this was in a large part due to reports of AONE and AANA members.

Aim 2: DNPs' reports of work activities since graduation. DNPs reported variation in their participation in scholarship and activities defined as those in which DNPs are prepared to engage.

Scholarship

Almost 60% of respondents (58.6%) reported they had not published anything that did not relate to their DNP projects since completing the degree. Seventeen percent had produced one publication and another 17% had produced two to four publications. Almost 7% (6.8%) had produced five or more.

Of those respondents who had not published prior to the DNP, 73% reported no publications unrelated to the DNP project postgraduation. Thirteen percent reported one post degree publication. Position title rather than years since attainment of the DNP, organizational membership or predegree publication experience most strongly indicated publication activity post-DNP graduation. For example, 40.7% of those who reported five or more publications post degree were in educational positions in contrast with the finding that 16.6% of all respondents were in these types of positions. Another 23.8% of those who reported five or more publications were in administrative positions. Of the remaining approximate third, almost all were CRNAs or nurse practitioners. Fifty percent of these high publication producing CRNAs spent less than or equal to 50% of their time in direct patient care. Half of these NPs reported engaging in patient care less than 75% of the time.

Table 4 – Ratings of DNP Education Impact on Abilities by Organizational Membership and Position

Impact on Abilities	Rating (%)				
	Not at All	2	3	4	Profound Effect
Organizational change					
All (*n* = 1,268)*	9.3	8.8	20.7	32.7	28.5
AONE (*n* = 243)	1.2	1.2	10.7	43.6	43.2
AANP (*n* = 621)	10.0	8.2	23.7	29.6	28.5
AANA (*n* = 419)	12.2	13.6	22.4	32.0	19.8
Quality improvement					
All (*n* = 1,273)*	6.6	6.0	16.5	35.0	35.9
AONE (*n* = 243)	1.2	2.1	12.3	38.7	45.7
AANP (*n* = 624)	5.9	5.1	17.9	32.4	38.6
AANA (*n* = 420)	9.5	9.0	16.9	37.6	26.9
Evidence-based practice					
All (*n* = 1,277)*	4.3	3.6	11.6	28.5	52.0
AONE (*n* = 245)	0.4	2.0	8.2	26.9	62.4
AANP (*n* = 628)	5.1	2.9	11.8	26.1	54.1
AANA (*n* = 418)	4.3	5.5	13.4	34.7	42.1
Leadership					
All (*n* = 1,275)*	5.7	4.2	15.4	33.6	41.1
AONE (*n* = 244)	1.6	2.0	8.6	30.7	57.0
AANP (*n* = 628)	5.3	4.3	16.1	32.0	42.4
AANA (*n* = 417)	8.2	4.6	18.7	37.6	30.9
Policy setting					
All (*n* = 1,260)*	12.8	12.5	27.1	30.0	17.6
AONE (*n* = 243)	7.0	7.8	21.8	39.9	23.5
AANP (*n* = 619)	13.7	12.9	26.5	28.9	17.9
AANA (*n* = 413)	13.6	13.8	31.5	28.1	13.1
Organizational change					
All respondents (*n* = 1,268)†	9.3	8.8	20.7	32.7	28.5
Faculty/Educational administrator (*n* = 211)	4.7	5.7	16.6	38.4	34.6
Administrator (*n* = 221)	1.4	0.9	10.9	40.3	46.6
CRNA (*n* = 329)	14.3	15.8	23.1	30.1	16.7
Nurse practitioner (*n* = 424)	12.0	10.1	27.1	25.5	25.2
Quality improvement					
All respondents (*n* = 1,273)†	6.6	6.0	16.5	35.0	35.9
Faculty/Educational administrator (*n* = 213)	3.3	2.8	16.9	29.6	47.4
Administrator (*n* = 221)	1.8	2.3	9.5	38.9	47.5
CRNA (*n* = 331)	11.8	10.9	18.4	36.3	22.7
Nurse practitioner (*n* = 426)	7.5	6.8	18.5	33.8	33.3
Evidence-based practice					
All respondents (*n* = 1,277)†	4.3	3.6	11.6	28.5	52.0
Faculty/Educational administrator (*n* = 212)	3.3	0.5	9.4	25.9	60.8
Administrator (*n* = 222)	0.9	2.7	9.0	26.1	61.3
CRNA (*n* = 331)	5.7	6.3	15.1	35.6	37.2
Nurse practitioner (*n* = 429)	5.8	4.2	11.4	25.9	52.7
Leadership					
All respondents (*n* = 1,275)†	5.7	4.2	15.4	33.6	41.4
Faculty/Educational administrator (*n* = 213)	3.3	1.4	12.7	30.0	52.6
Administrator (*n* = 222)	1.4	2.3	7.2	31.1	58.1
CRNA (*n* = 328)	10.1	6.1	21.0	38.1	24.7
Nurse practitioner (*n* = 428)	6.3	5.4	18.2	32.9	37.1
Policy setting					
All respondents (*n* = 1,260)†	12.8	12.5	27.1	30.0	17.6
Faculty/Educational administrator (*n* = 211)	8.5	9.5	26.5	29.4	26.1
Administrator (*n* = 220)	8.6	6.4	23.6	37.3	24.1
CRNA (*n* = 324)	15.4	16.7	29.9	26.5	11.4
Nurse practitioner (*n* = 421)	15.7	14.0	27.3	27.3	15.7

*Rating scale ranged from one (not at all) to five (profound effect). The number of subjects varied slightly because not all subjects answered every item. The total (all) is not the sum for the three organizations because a few subjects indicated membership in more than one organization and not all answered every item. †"All" exceeds the total of titles shown because other subjects held a variety of titles. The first two rows represent combined position titles such that "faculty/educational administrator" includes continuing education coordinator/instructor (*n* = 7), and dean/director or associate/assistant dean/director of nursing education (*n* = 53), and faculty (*n* = 129). "Administrator" includes administrator/assistant administrator of organization/facility/agency (*n* = 81) and administrator/assistant administrator of nursing (*n* = 98). *Note.* AANA, American Association of Nurse Anesthetists; AANP, American Association of Nurse Practitioners; AONE, American Organization of Nurse Executives.

Impact on Abilities

Over 70% of all respondents indicated a substantial (a rating of four or five on a five-point scale) impact of the DNP program on quality improvement, evidence-based practice and leadership abilities (Table 4). Over 60% rated organizational change abilities to be substantially improved. Policy setting received the lowest impact rating (25% reported no or very low impact on abilities).

There were large differences of ability impact ratings by organizational membership. For example, 86% of AONE members vs. 58% of AANP and 52% of AANA rated the impact of the program on organizational change skills to be substantial. Similar differences were noted for quality improvement (84% AONE, 71% AANP, 64% AANA), leadership (88% AONE, 74% AANP, 69% AANA), and policy setting (63% AONE, 47% AANP, 41% AANA).

Aim 3: Participation in DNP-related roles.

Of the eight categories the DNP is designed to prepare graduates to assume roles as participants or leaders in, there was variability in reported roles based on DNP position (Table 5). Leadership of at least one organizational change project was reported by 38% of respondents and 33% indicated leadership of a QI design and implementation project. These percentages were driven by AONE members who almost exclusively reported their positions to be administrative. Time spent in direct patient care was inversely related to reports of leadership of these activities.

To determine if enactment of roles within the categories were related to time since graduation, an analysis of responses by subjects with 5 or more years of experience after DNP graduation compared with those who had two to four years' experience post DNP degree was conducted. After considering differences in position type (e.g., 25% of ≥5 years post DNP graduates held faculty or educational administrative positions vs. 16% of 2–4 years post DNP graduates), differences in leading the start of an APRN clinic (11.9% ≥5 years vs. 5.7% of 2–4 years graduates), leadership of an organizational change project (42.6% vs. 34.9%), and participation in externally funded research (14.8% vs. 2.9%) were noted.

Aim 3: DNPs' reports of the contribution of degree attainment personally and the need for every APRN to obtain the degree.

Greatest Contribution

Of the less than 500 participants who provided a response to the open-ended question on what the

Table 5 – Reported Roles in Selected Activities after DNP Graduation by Position

	Position %				
	Faculty/Educational Administrator (*n* = 216)	Administrator (*n* = 226)	CRNA (*n* = 335)	Nurse Practitioner (*n* = 435)	All (*n* = 1,308)
Roles					
Starting an APRN clinic					
Participant	8.8	3.1	1.2	6.4	4.8
Leader	11.6	4.4	0.3	12.0	7.6
QI design and Implementation project					
Participant	28.2	19.0	19.7	22.3	21.9
Leader	30.1	74.8	17.6	23.0	33.0
Organization change Project					
Participant	23.6	10.2	23.3	25.1	21.5
Leader	35.6	88.5	19.7	25.3	37.8
Local policy change					
Participant	25.0	29.2	14.9	16.3	19.4
Leader	12.5	25.2	9.0	7.1	12.0
State policy change					
Participant	26.4	28.3	11.0	16.3	18.7
Leader	7.9	8.8	6.3	3.9	6.1
Externally funded research grant					
Participant	21.8	19.9	3.9	6.2	11.2
Leader	12.0	8.0	2.4	2.5	5.3
Federal or international policy change					
Participant	13.4	10.2	5.4	6.4	7.7
Leader	2.8	3.5	0.9	1.4	1.8
Educational/Training grant					
Participant	25.0	18.1	4.8	7.6	12.1
Leader	16.2	7.1	2.1	3.7	6.1

The first two columns represent combined position titles such that "faculty/educational administrator" includes continuing education coordinator/instructor (*n* = 7), and dean/director or associate/assistant dean/director of nursing education (*n* = 53), and faculty (*n* = 129). "Administrator" includes administrator/assistant administrator of organization/facility/agency (*n* = 81) and administrator/assistant administrator of nursing (*n* = 98). The total (all) is not the sum for the four selected positions.

Table 6 – Greatest Personal Contribution of DNP Degree by Position (*n* = 1,052)

	% Indicating Contribution							
	Personal	Job Options	Prestige	Do Job Better	Do Research	Specific Skill	Nothing/ Detrimental	Other
Title								
Faculty/Educational administrator (*n* = 189)	7.9	30.2	10.6	0.5	1.6	48.1	0.5	0.5
Administrator (*n* = 179)	8.9	17.4	21.2	0.6	0.6	49.7	0.0	1.7
CRNA (*n* = 263)	11.4	22.8	12.6	1.5	0.4	40.7	8.7	1.9
Nurse practitioner (*n* = 345)	17.1	13.3	14.2	1.2	1.7	45.3	6.3	0.9
All (*n* = 1,052)	12.7	19.8	14.8	1.0	1.1	44.7	4.7	1.3

"All" exceeds the total of titles shown because other subjects held a variety of titles. The first two rows represent combined position titles such that "faculty/educational administrator" includes continuing education coordinator/instructor (*n* = 7), and dean/director or associate/assistant dean/director of nursing education (*n* = 53), and faculty (*n* = 129). "Administrator" includes administrator/assistant administrator of organization/facility/agency (*n* = 81) and administrator/assistant administrator of nursing (*n* = 98).

greatest contribution obtaining the DNP degree was to them, no single contribution category exceeded 20% with the exception of answers that cited a "specific skill." These skills included diverse abilities such as data manipulation, familiarization with various computer programs, negotiation, and awareness of interprofessional issues (Table 6).

Of the 45% of respondents who indicated a specific skill, leadership (9.1%) and evidence-based practice (8.2%) were the most frequently indicated. The emphasis of 19.8% of respondents on job related issues included not only job retention (2.6%) but also job promotion (7.8%), and future flexibility in career choice (8.7%). In terms of the latter statement, respondents most commonly indicated that earning the DNP made it possible to obtain a faculty job in the future should they want it. Other perceived benefits included statements related to achievement of a lifelong goal, personal satisfaction, and sense of pride. "Prestige" (including having the title of "doctor") was cited by almost 15% of subjects as the biggest contribution. These subjects wrote about parity with others at the table, recognition of peers and credibility. Among the 4.7% who responded that obtaining the degree made no contribution, answers included "nothing" and comments indicating it had added to personal debt or did nothing to increase pay or respect. The variation by position title on perceptions of personal contributions of obtaining the DNP was marked.

Approximately 20% of respondents did not answer the open-ended item about the greatest personal contribution of the degree's attainment. A comparison of responders and nonresponders was undertaken because other survey items were answered by 95% to 99% of respondents. Placement of the item was an unlikely factor. It was placed midsurvey to avoid reluctance to answer an open-ended item at the end of a survey. There were no differences between responders and nonresponders by education or experience. Two significant differences were age (nonresponders were 2 years younger on average than responders) and position (faculty were more likely to respond than any other group).

The Necessity of a DNP for All APRNs

On a scale of one to ten (1 = not a necessity at all and 10 = a necessity for every APRN), 48% of respondents rated necessity at or above an 8 on the scale. The mean rating was 6.7 (SD 2.7). There were differences by organizational membership. AONE respondents indicated the greatest support ($\bar{x}$ = 7.8, SD 2.0) vs. AANP ($\bar{x}$ = 6.7, SD 2.7) and AANA ($\bar{x}$ = 6.2, SD 2.8).

Ten percent of AANA members reported it was not at all necessary vs. 7.3% of AANP and 2.5% of AONE members. Considering position, almost 12% of CRNAs and 9% of NPs indicated the DNP was not a necessity for all vs. 3% of administrators and 1.9% of faculty. There were no differences in ratings by years since graduation nor by type of entry into the DNP program (i.e., after earning a baccalaureate degree vs. after earning a nursing master's degree).

Discussion

The results of the study indicate that most respondents identified marked program impact on the abilities the DNP curricula is designed to improve: organizational change, quality improvement, leadership, and evidence-based practice. There were large differences in ability impact ratings, participation in publication, employment and position change, ratings of the need for every APRN to obtain a DNP, and the major contribution of DNP attainment by organizational membership and position regardless of year since degree attainment. These findings have implications for the nursing profession as well as DNP programs.

The AACN Position Statement on the Practice Doctorate in Nursing changed the course of nursing education by identifying that advanced practice education be moved to the doctoral level (American Association of Colleges of Nursing, 2004). In the current study, however there was variation in the degree to which DNP

respondents reported the need for every APRN to obtain a DNP with the overall mean rating at 6.7 on the 10-point scale where one was "not at all" to 10 was "a necessity." Of interest, AONE members who were least likely to be APRNs were most likely to agree every APRN should obtain a DNP. All of these findings suggest multiple actions need to be considered in terms of the vision for the DNP and its execution.

Implications and Recommendations

Curriculum

One of the purposes of any degree program is to prepare graduates to do work important to society through a relevant and robust curriculum. Participants in the study reported increases in abilities related to the competencies outlined in the DNP Essentials, including organizational change, quality improvement, evidence-based practice, and leadership. Almost half indicated enhanced ability in policy setting. The findings of relatively low rates of publication as well as low rates in which graduates participate in or lead activities for which DNP education aims to prepare them suggest curricular implications.

There were clear delineations in leadership and participation by position. DNP holders involved in clinical practice (the majority of participants) had the lowest rates of participation and leadership. Counterbalancing the experiences of this majority, are those reported by DNP holders who are in faculty or administrative positions. Although they rated DNP education to have the same impact on their skills as the clinical practice respondents, faculty, and administrators reported higher rates of participation in activities that would require the use of skills which DNP programs aim to develop. They tended to participate in these activities at a higher rate regardless of years since program completion. One reason may be that these activities are a component of their current positions in contrast to the positions of clinicians.

The current DNP curriculum described in DNP Essentials is designed to provide all DNP graduates with a variety of skills. Acknowledgment that there are separate and complex functional skills needed by the clinicians, educators, and administrators can influence and individualize curriculum design so that the DNP prepares nurses to meet the needs of society and healthcare regardless of career trajectory. This approach could add depth to skill sets. If graduates make major position changes, additional functional specialization can occur after completion of the DNP program. This approach fully embraces the concepts of life-long learning for specialized roles.

Organizations

Findings of differences in responses to almost every question concerning post-DNP experiences and opinions by organizational membership can guide the organizations' leaders in their (1) responses to DNP curricular and policy issues, (2) interactions with leaders from other nursing organizations whose members may have divergent issues related to the DNP degree's effect and value, and (3) their responses to their own professional organization's membership. Nursing organizations endeavor to help the members meet their needs as well as those of society. Taking into account members' views about and experiences with a major educational initiative like the DNP program can help professional organizations meet these needs as they advocate for or against reforms.

Organizations that have a vocal but low number of members who are not functioning as APRNs might need to make special efforts to understand the majority's needs and desires. This may be challenging because often leaders of organizations are administrators or educators rather than advance practice clinicians but the effort must be made. This study included three of the largest organizations with relatively large numbers of DNP holders but other organizations need to ascertain their members' experiences and views. Avoiding a chasm between the organization's leadership and members on this or any other issue can only strengthen the organization.

Frank discussions across nursing professional organizations can help the nursing profession develop more effective educational programs. These discussions must also involve the same frankness in outreach efforts with educational organizations that have their own organizational imperatives (e.g., enrollment, educational costs) to address. Together the organizations can bring about meaningful improvements that recognize the realities of APRN position demands and the evolving vision of the DNP.

Research

Studies that include DNP graduates who are not members of organizations such as those included in this report are needed. Their views and experiences may differ. In addition, works that explore the types of project in which respondents indicated they were participants and/or leaders are needed. Another question to be resolved is the extent of participation and of leadership that is reported. Longitudinal cohort investigations will help identify long-term trends. If these types of studies can include non-DNP control groups with close attention to proper risk adjustment techniques, degree effect might also be clarified.

Limitations

The subjects were drawn from several professional organization membership lists. The results can only be generalized to the three to the extent that organizational membership represents the nurses who hold employment in roles consistent with the organization's specialty. In the case of AONE, approximately

9,700 nurse executives held membership in 2016 (American Organization of Nurse Executives, 2018). There is no accurate statistic regarding the total number of the US nurse executives. AANA membership includes 89.6% of all the US nurse anesthetists. The AANP includes almost 72,000 nurse practitioners who are concentrated in family (59%), adult (19%), and acute (9%) care areas; the AANP reports there are approximately 234,000 nurse practitioners in the US. If DNPs who are more involved in publication and the professional activities included in the survey are also more likely to join these organizations, the results may be overestimations of degree impact, degree necessity, publication, and the other activities studied.

The study aims and thus the design were not created to compare the achievements of DNP vs. non-DNP holders. No conclusions can be drawn as to whether the DNP holders would have had similar employment, activity, and scholarship trajectories without having completed the degree. Also, the survey did not identify if respondents completed a leadership focused or other specialty DNP program.

Conclusion

Professional organizations and educational institutions need to consider these findings in making curricular and policy advocacy decisions. One potential curricular direction is to address the lack of connection between DNP program goals and experiences and differences in the skills needed and activities undertaken in the positions DNP graduates fill. Functional specialization modules with common core content for all may be of some assistance in making this connection thereby increasing the impact of DNP education. Policy advocacy is dependent on the support of those affected. Nursing organizations need a clear understanding of their own membership's views as well as those of other nursing organizations.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.outlook.2018.10.008.

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