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A cross-sectional study of drinking patterns, prelicensure nursing education, and professional identity formation

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Summary

PURPOSE: The purpose of this cross-sectional, descriptive study was to describe drinking behaviors and professional identity formation among student nurses. **METHOD:** Survey data were collected from 333 students enrolled in a traditional BSN program on three campuses of a large Midwestern university using the *Nurse Self-Concept Questionnaire* and the *Student Alcohol Questionnaire*. ANOVA and Pearson *r* statistical tests were used to analyze data.

RESULTS: Self-perceptions related to leadership were found to be the weakest aspect of the students' self-concepts, and the only dimensions of professional self-concept that differed significantly among students enrolled at varying program levels were knowledge and communication. A negative relationship was found between increased alcohol use and general self-concept and communication, but the associations were very weak. **CONCLUSIONS:** More research is needed to understand how best to facilitate the acquisition of an identity consistent

with the profession's values and how to recruit candidates that will contribute to nursing's preferred future.

Background

Professional identity may be defined as “one’s professional self-concept based on attributes, beliefs, values, motives, and experiences” (Slay & Smith, 2011, p. 86). Professional identity has been theorized to be a key factor in providing high quality care to improve patient outcomes (Benner, Sutphen, Leonard, & Day, 2010; Cronenwett et al., 2007), and is thought to mediate the negative effects of a high stress workplace (Arthur & Randle, 2007; Hensel, 2011; & Siebens et al., 2006), improve clinical performance (Jahanbin, Badiyepeyma, Ghodsbin, Sharif, & Keshavarzi, 2012), and improve job retention (Cowin & Hengstberger-Sims, 2006; Cowin, Johnson, Craven, & Marsh, 2008). Professional identity formation is so important that the National League for Nursing ([NLN], 2010) has declared that it should be a universal outcome of all curricula from vocational nursing to research doctorate programs. Thus, understanding how this identity is acquired is important.

Professional identity is intertwined with and arises from professional self-concept, defined as how nurses think and feel about their abilities (Johnson, Cowin, Wilson, & Young, 2012). Both professional identity and self-concept formation are thought to be developmental processes that begin before pre-licensure education and continue throughout a career, often becoming more stable with time (Cowin, 2001; Cowin, Craven, Johnson, & Marsh, 2006; Hensel & Stoelting Gettlefinger, 2011; Johnson et al., 2012; Cronenwett et al., 2007; Ware, 2008). Through the process of internalizing professional values, one’s professional identity becomes self-evident in the nurse’s lived experience and creates the foundation for promoting the ideals of the profession (NLN, 2010).

One such professional value identified in the *International Code for Nurses* (International Council of Nurses [ICN], 2000) is that nurses maintain a personal health status does not compromise their ability to provide safe patient care. The American Nurses Association (ANA) *Code of Ethics* (2001) further specifies that nurses have an ethical responsibility to practice unimpaired and safely. However, substance abuse is a significant problem within the profession that impairs nurses' ability to perform essential job functions and threatens both self-concept and safe practice (Lillibridge, Cox, & Cross, 2002; Kenward, 2009; Monroe & Pearson, 2009). It is estimated in the United States that perhaps 6% of nurses have a problem severe enough to impair practice (Dunn, 2005). Although the prevalence of nurses identified with substance abuse problems approximates or may be lower than the general population, the percentage of such nurses who receive treatment for their substance abuse remains lower than the general population, placing patients at risk (Monroe, Kenaga, Dietrich, Carter, & Cowan, 2013).

Meeting the public's health and social needs is one of nursing shared professional responsibilities (ICN, 2000), and personal lifestyles have been linked to nurses' perceptions of professional adequacy (Hensel, 2011; Riley & Yearwood, 2012). Yet, unhealthy lifestyle patterns that may start during pre-licensure education may have serious consequences for professional careers and health in later life (Watson, Whyte, Schartau, & Jamieson, 2006). Specifically, alcohol and other drug abuse often begins during undergraduate education (Baldwin, Barteck, Scott, Davis-Hall, & DeSimone, 2009; Chaname, Cunningham, Brands, Strike, & Miotto Wright, 2009). Though alcohol use among nursing students has been found to be comparable to other undergraduate college students, it is of concern that perhaps four percent of nursing students engage in patient care while under the influence (Baldwin et al., 2006; 2009).

Some pre-licensure educational programs have been found to increase knowledge and the confidence to address substance abuse, but nursing students frequently perceive their education on this topic as being inadequate (Baldwin et al., 2009; Rassool, & Rawaf, 2008). Students' understanding of substance abuse is often simplistic, and educational efforts frequently fail to adequately address how to drink responsibly or deal with impaired colleagues (Cadiz, O'Neill, Butell, Epeneter, & Basin, 2012; Gill & Fiona, 2011; Murphy-Parker, & Martinez, 2005).

If the profession of nursing exists to promote health and has a professional value to practice unimpaired, one question that arises is about how do students' personal substance use/abuse patterns factor into their professional identity formation? Framed within Cowin's (2001) model of nurse self-concept, the purpose of this study was to describe patterns of substance abuse in the form of drinking behaviors and professional identity among BSN nursing students. The specific aims of this study were to describe patterns of drinking and associated problems among BSN students at the study university and to explore relationships between professional identity in terms of nurse self-concept and alcohol use.

Method

Institutional Review Board approval was obtained to conduct this cross-sectional, descriptive study on three campuses of a large university in the Midwestern University. The convenience sample of 333 students was drawn from approximately 420 eligible students enrolled in the fall semesters of the 2nd, 3rd, and 4th years of a traditional 4-year, undergraduate BSN program that admitted students in the second year of study. Inclusion criteria were (a) being a traditional undergraduate BSN student, (b) enrollment at the study institution, and (c) willingness to participate.

Participants were recruited through a class visit from the investigators. Students were advised of their rights and assured that participation was voluntary, confidential, and would not affect their grade. Survey data were collected in the fall semester of 2011 using the *Nurse Self-Concept Questionnaire* (NSCQ) and the *Student Alcohol Questionnaire* (SAQ). Created in Australia, the NSCQ has 36 items on 8-point ordinal response scales that measure the six dimensions of a nurse's professional self-concept described by Cowin (2001). The NSCQ has theoretical and construct validity. In the current study, the tool had good internal consistency with Cronbach's alpha scores for the subscales as follows: Nurse General Self-Concept .90; Caring .82; Staff Relations .88; Knowledge .79; Communication.82; and Leadership .89.

The SAQ was designed to assess college students' knowledge, behaviors, and drinking patterns (Engs, 1977). For this study, only subscales related to drinking patterns (quantity/frequency) and problems resulting from drinking were utilized. The 6-item drinking pattern scale has evidence of face validity and good reliability, with a reported Spearman-Brown reliability coefficient of .84 and a Cronbach's alpha of .86 (Engs & Hanson, 1994). Cronbach's alpha was also .86 in the current study. Mean weekly alcohol consumption was calculated using the method described by Engs (1977), which involved recoding of quantity in drinks per session (*over 6 drinks =7.50; 5-6 =5.50; 3-4 =3.50; 1-2 =1.5; <1=.50; 0=0*) and frequency (*every day=7.0; at least once a week, but not every day=3.5; at least once a month but less than once a week=.5; at least once a year but less than once a month =.12; once a year or less=.02; none=0*).

The SAQ 18-item scale measuring problems resulting from drinking has a reported Spearman-Brown reliability coefficient of .89 and Cronbach alpha of .92 (Engs & Hanson, 1994). In the current study, Cronbach's alpha for the scale was .87. A mean problem score was

calculated by assigning one point for each of the 19 drinking-related problems experienced at least once during the previous year (Engs, 1977).

Results

Data analysis was done using SPSS statistical software version 20. Initially, 347 questionnaires were returned. Fourteen were excluded because of missing data, leaving a total of 333 questionnaires for analysis. Mean age was 22.9 years ($SD=5.97$) and mean GPA was 3.65 ($SD= .50$). Class level was reported as 2nd year nursing ($n=113$, 34%), 3rd year ($n= 72$, 22%), or 4th year ($n= 148$, 44%). There were 28 male (8%) and 305 female (92%) participants. Racial background was reported as white or Caucasian (294, 88 %); black or African- American (13, 4%); Hispanic Latino (10, 3%); Asian Pacific Islander (8, 2%); Native- American (0%), other (7, 2%), and not specified (1, <1%).

Table 1 displays drinking patterns by year of study in the nursing program. Dietary guidelines define moderate alcohol consumption as up to one drink per day for women and up to two drinks per day for men (United States Department of Agriculture, [USDA], 2010). Heavy or high-risk drinking is defined as exceeding seven drinks per week for a woman, or 14 drinks per week for men. Based on those definitions, students were classified as abstainers, moderate drinkers, or heavy drinkers. Final analysis revealed that the sample was: abstainers, 26 (7.8%); moderate drinkers, 197(59.1%); and heavy drinkers, 110 (33%).

Mean drinks per week were 8.5 ($SD=11.4$). Liquor consumption averaged 4.3 ($SD=7.3$) drinks per week, followed by beer ($M=2.6$ drinks, $SD=5.14$) and wine ($M=1.5$, $SD=3.5$). The large standard deviations reflected the wide range of alcohol consumption. Mean alcohol consumption was significantly different between students at the different levels [$F(2,331) = 6.41$,

$p=.001$]. Post-hoc analysis using the Bonferroni correction showed the difference was due to a significant decrease in alcohol use between the 2nd and 4th year students ($p=.001$).

Table 2 shows the types of problems students had encountered related to drinking during the previous year. The number of different problems ranged from 0 to 11 ($M=2.4$, $SD=2.01$). The mean values for the NSCQ scales are displayed in Table 3. A one-way between-subjects ANOVA was conducted to compare the relationship of years of pre-licensure nursing education to the six dimensions of self-concept. For all groups, nurse general self-concept, defined as a sense of self-esteem or positive self-regard with the profession (Cowin, n.d.) was the strongest facet of their professional self-concept ($M=44.3$; $SD=4.15$) and leadership was weakest ($M=36.1$; $SD=6.98$). Years of nursing education was significantly related to self-reported knowledge [$F(2,330) = 5.647$, $p=.004$] and communication [$F(2,330) = 3.016$, $p=.05$], but to no other dimension of nurse self-concept. Post-hoc comparisons using the Bonferroni correction showed that knowledge in the 4th year students ($M=42.7$, $SD=6.12$) was significantly higher than 2rd year ($M=40.9$, $SD=4.48$, $p = .010$) and 3rd year ($M=40.8$, $SD=3.7$, $p = .029$) students. There was no significant difference in knowledge between sophomore and junior students. A significant difference in self-reported communication skills was also seen between the senior ($M=41.7$, $SD=5.18$) and junior students ($M=39.8$, $SD 4.7$, $p=0.49$) but not between the senior and sophomore students.

A matrix using Pearson product-moment correlations was generated to find relationships among self-concept, alcohol weekly consumption, problems from drinking, age, and GPA. The only significant findings at the $p<.01$ level were negative relationships between nurse general self-concept and total weekly alcohol ($r=-.194$), beer ($r=-.151$), and liquor consumption ($r=-.169$). Negative relations at the $p<.05$ level were found between communication and total weekly

alcohol($r=-.131$) and beer ($r= -.126$) consumption. Burns and Grove (2009), however, suggested that relationships of $r < .3$ could only be described as weak.

Discussion

Leaders in nursing posit that nurses' professional identity manifests not only in their work, but in their daily lives (NLN, 2010). Healthy lifestyle practices are a major focus of nursing education, and nurses who live such lifestyles have also been found to have a stronger sense of professional adequacy (Hensel, 2011). One study found that efforts to improve self-care also improved student nurses' intent to provide care consistent with national quality and safety standards (Riley, & Yearwood, 2012). Yet, we found that unhealthy drinking behaviors were only weakly related to decreases in professional adequacy in terms of general self-concept and communication.

In this study, general self-concept was defined as sense of fit with the profession and communication was defined as confidently sharing information and utilizing feedback, which forms the foundation for patient teaching (Cowin, n.d.). The United States health agenda, *Healthy People 2020*, calls for nurses, in their role as health promoters, to teach their clients the dangers of heavy and binge drinking (United States Department of Health and Human Services, 2012). Although personal engagement in such drinking was negatively related to students' sense of fit within a profession that teaches others the dangers of such behaviors, the relationship was much weaker than we anticipated. The high percentage of heavy and binge drinking patterns found among the participants in this study suggests disconnection between the personal and professional self.

Further evidence of this disconnect was evidenced in the students' self-reported problems related to drinking. Though the most common problem was having a hangover (77%), engaging

in drinking and driving was reported by approximately 30% of all students. This is similar to the findings of Hingson, Zha, and Weitzman (2009), who found that 28.9% of college students reported driving under the influence. Still, understanding one's role in error prevention in the clinical setting is an important professional attitude (Cronenwett et al., 2007). The prevalence of drinking and driving suggests that future nurses do not fully appreciate their responsibility to protect public safety beyond the workplace.

Alcohol use was found to be significantly higher in the 2nd year students than the 4nd year students. What is unknown is if the decreases in alcohol consumption over the course of the program were primarily due to alcohol and professional value education within the curriculum or to normal maturational events.

A serendipitous finding of this study was how little professional self-concept differed among students beginning and those nearing the end of the program. Knowledge and communication were the only dimensions of self-concept that showed a significant difference among students of the varying levels the curriculum. Knowledge was defined as the ability to confidently learn and use new skills and theories (Cowin, n.d.). Therefore, we expected to see progressive increases in knowledge with each year in the program. The curriculum at the study institution included a communication course in the second year. We were surprised to see perceived adequacy with communication only increased between 3rd year and 4th year of the program. However, this may be partly explained by the limited exposure to patients early in the program.

In this study, the dimensions of professional self-concept related to leadership, staff relations, caring, and general self-concept did not vary significantly among students at different program levels. This finding was troubling. Although Ware (2008) found that students enter into

a nursing program with a beginning professional self-concept, experts suggest that pre-licensure education should be a transformative experience that supports professional identity formation (Benner et al., 2010; Johnson et al., 2012; NLN, 2010). Students at the study institution have frequently described how the senior Capstone experience of working directly with an experienced RN preceptor helped them integrate the knowledge, skills, and attitudes previously learned. This study did not capture transformations in professional identity that would be expected to have come from that experience. Still, this study challenges the notion that formation of a professional identity is a gradual process during pre-licensure education and suggests that the values and beliefs students arrive with may be more engrained into students' professional identity than educators assumed.

Though more research is needed to understand how best to facilitate the acquisition of an identity consistent with the profession's values, the greater problem may be understanding the role of pre-held attitudes in professional identity formation. This is particularly important to the future of nursing as the profession has been called on the profession to lead change in advancing health policy (Institute of Medicine, 2011). Yet, this study found that leadership was the weakest aspect of the students' professional self-concept, mirroring findings from studies of practicing nurses (Cowin, 2001; Cowin, & Hengstberger-Sims, 2006; Hensel, 2011). If this is true perhaps the greatest challenge for the profession is not how to teach professional values, but how to recruit pre-licensure candidates who will best contribute to nursing's preferred future.

Conclusions

There were several limitations to this study. First, we used a convenience sample of students based on three campuses of one large Midwestern university system in the United States, and therefore the results of the study may not be generalizable elsewhere. Approximately

420 students were enrolled in the classes from which data were obtained, and the participation rate was approximately 79%. However, attendance was not verified the day of data collection. It is possible that the students missing class were missing due to drinking-related problems, but their data were not captured. Furthermore, the alcohol use data were self-reported, and the reliability and validity of self-reported data are dependent upon the willingness of the participants to report. Those who participated might have differed in important ways from those who did not participate. These facts, however, make it likely that alcohol use was actually underestimated in the study. Finally, the study was cross-sectional and compared cohorts, so we could not follow the development of professional identity across time, and we could not identify causal effects.

Despite its limitations, this study provides direction for research in quality and safety education, substance abuse education, and professional identity formation. More research is needed to understand how best to facilitate the acquisition of behaviors and professional identities consistent with the profession's values and how to recruit candidates that embody nursing's preferred future.

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Table 1.

Drinking Patterns by Class (N=333)

Class	Type of Drinker *			Total	Drinks per Week		
	Abstainer	<u>M</u> 15/ <u>F</u> 182 n(%)	<u>M</u> 11/ <u>F</u> 99 n(%)		Beer	Liquor	Wine
All n=333	<u>M</u> 2/ <u>F</u> 24 26 (7.8%)	<u>M</u> 15/ <u>F</u> 182 197(59.1%)	<u>M</u> 11/ <u>F</u> 99 110(33%)	8.5(11.4)	2.6 (5.1)	4.3 (7.3)	1.5 (3.5)
2 nd year n=113	<u>M</u> 0/ <u>F</u> 4 4(3.5%)	<u>M</u> 5/ <u>F</u> 54 59(52.2%)	<u>M</u> 5/ <u>F</u> 45 50 (44%)	11.3(12.6)	3.8 (5.9)	5.3 (7.7)	2.1(4.0)
3 rd year n=72	<u>M</u> 1/ <u>F</u> 3 4(5.5%)	<u>M</u> 2/ <u>F</u> 41 43(59.7%)	<u>M</u> 2/ <u>F</u> 23 25(34.7%)	8.5(10.5)	2.7(4.6)	4.5(7.5)	1.3(2.5)
4 th year n=148	<u>M</u> 1/ <u>F</u> 17 18(12%)	<u>M</u> 8/ <u>F</u> 87 95(64%)	<u>M</u> 6/ <u>F</u> 31 37(25%)	6.5(8.6)	1.6(4.5)	3.6(6.8)	1.1(3.5)

* Note: Abstainers reported no alcohol use, moderate drinkers were defined as 1 to14 drinks/week for men and 1 to7 drinks/week female; heavy drinkers were defined as >14 drinks/week for men and >7 drinks/week female

Table 2.

Percentages of Students Reporting Drinking Related Problems (N=333)

Type of Trouble*	$\geq 1/2m$ + ≥ 1 year	$\geq 1/$ 2m	In past year	In life	Never
Had a hangover	39.9	7.2	15.3	14.1	23.4
Had nausea & vomited	19.5	7.2	24	24.3	24.9
Driven a car after having several drinks	2.7	1.2	6.3	19.5	70.3
Driven knowing you had too much to drink	2.7	1.2	6.3	19.5	70.3
Driven a car while drinking	1.2	.9	3.6	18.3	76
Come to class after having several drinks	1.5	.9	4.2	9.9	83.5
Cut a class after having several drinks	1.2	.9	4.2	7.8	85.9
Missed a class because of a hangover	1.5	2.4	6.0	12	78.2
Arrested for Driving while Intoxicated	.3	0	0	.9	98.8
Been criticized by date for drinking	2.1	1.8	3	7.8	75.3
Had legal trouble because of drinking	.3	.3	.6	8.4	90.4
Lost a job because of drinking	0	0	.3	.6	99.1
Got a lower grade because of drinking	.6	.9	1.2	5.1	92.2
Trouble with school administration	0	0	0	2.4	97.6
Got into a fight after drinking	2.4	.9	3.9	10.5	82.3
Thought you might have a problem	.3	0	1.2	2.4	95.1
Damaged property after drinking.	.3	.3	.6	4.2	94.6
Participated in a drinking game	2.7	1.5	2.7	2.7	90.4

*Note: $\geq 1/2m+1$ year=trouble at least 1 time in last 2 months and at least once in last year;
 $\geq 1/2m$ r=trouble at least 1 time in last 2 months; past year= not during the past two months but at least once during the past year; Life= has happened at least once in my life but not during the past year. Never=Never in life

Table 3

Nurse Self-Concept by Year of Study (N=333)

	General <i>M (SD)</i>	Caring <i>M (SD)</i>	Staff Relations <i>M (SD)</i>	Knowledge <i>M (SD)</i>	Leadership <i>M (SD)</i>	Communication <i>M (SD)</i>
Total (N=333)	44.3(4.15)	41.14(5.18)	41.6(4.57)	41.7(5.21)	36.1(6.96)	41.0(5.28)
2 nd year (N=113)	44.1(4.38)	41.9(4.69)	41.5(4.54)	40.9 (4.48)	36.5(7.17)	40.8 (5.62)
3 rd year (N=72)	43.9(3.76)	40.7 (4.40)	41.1(4.22)	40.8(3.70)	34.6(6.08)	39.8(4.70)
4 th year (N=148)	44.7(4.15)	40.6(5.81)	42.0(4.74)	42.7(6.12)	36.5(7.16)	41.7(5.18)

*Note maximum possible range for each scale = 8 - 48.