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MATERNAL/INFANT CHARACTERISTICS AND BIRTH LOCATION  
IMPACT ON BREASTFEEDING INITIATION AND DURATION

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## ABSTRACT

**Purpose:** Healthy People 2020 goals emphasize the importance of breast milk as the best source of nutrition for infants. Variability in breastfeeding outcomes (initiation and duration) is attributable to maternal/infant characteristics and healthcare practices. Studies in Australia and Sweden reported no significant differences in breastfeeding duration by location; however, no U.S. study has evaluated duration outcomes in relation to birth location.

**Objective:** This study investigates the influence of maternal/infant characteristics and birth location on breastfeeding outcomes.

**Design:** A descriptive, secondary analysis was conducted using the CDC's National Survey of Family Growth (NSFG) 2006-2010.

**Participants:** Data were obtained from in-person interviews. The sample ( $N=4,485$ ) consists of women between the ages of 15 and 44 who reported their first live birth.

**Data Analysis:** *ANOVA*, *Chi-Square*, *t-tests*, and *Pearson ( $r$ )* were used to evaluate differences in breastfeeding outcomes among birth location and maternal/infant characteristics.

**Results:** Mothers who delivered in a birth center breastfed significantly ( $p \leq .01$ ) longer ( $M=44.1$  weeks) than mothers who delivered in a hospital ( $M=17.2$  weeks). Full term infants were breastfed significantly ( $p < .001$ ) longer ( $M=19.2$  weeks) than preterm infants ( $M=14.7$  weeks). Maternal demographic factors that strongly influenced breastfeeding initiation and duration included race, education, marital status, smoking status, and poverty level.

**Conclusions:** The results support that birth centers consistently practice care associated with longer breastfeeding duration. Improving access to birth centers for care and integrating Baby Friendly care practices into hospitals may enhance efforts to meet the Healthy People 2020 goals for breastfeeding.

## INTRODUCTION

Breastfeeding is the best source of nutrition for infants, providing myriad short- and long-term benefits to both infants and to mothers who choose to breastfeed. In its Policy Statement, “Breastfeeding and the Use of Human Milk”, the American Academy of Pediatrics (AAP) affirmed its support of breastfeeding, recommending “exclusive breastfeeding for about 6 months, followed by continued breastfeeding as complementary foods are introduced, with continuation of breastfeeding for 1 year or longer as mutually desired by mother and infant” (2012, p. e827). While any duration of breastfeeding is beneficial to infants, the benefits of extended breastfeeding are extensive and include notably lower risks of otitis media, respiratory tract infections, asthma, RSV bronchiolitis, atopic dermatitis, Celiac disease, type I diabetes, acute lymphocytic and myeloid leukemia, and sudden infant death syndrome (SIDS) (AAP, 2012).

Even though breastfeeding offers extensive and well-documented benefits, breastfeeding in the U.S. continues below ideal rates. The Centers for Disease Control and Prevention (CDC, 2013a) reported that for children in the U.S. in 2006, 74% were breastfeeding early postpartum, 43.5% at six months, and 22.7% at twelve months. These rates slightly increased in 2012, with 76.9%, 47.2%, and 25.2% of children breastfeeding at birth, six, and twelve months, respectively (CDC, 2012). The U.S. consistently has focused on increasing both breastfeeding initiation and duration as a priority. Healthy People 2010, a national initiative from several federal agencies collaborating to develop “science-based, ten-year national objectives for improving the health of all individuals” (U.S. Department of Health and Human Services [DHHS], 2012), sought to increase the proportion of mothers who breastfed their infants in early postpartum to 75% and to increase the proportion of

mothers who continue to breastfeed for at least six months and twelve months to 50% and 25%, respectively (CDC, 2013b). While the U.S. achieved the 2010 goal for breastfeeding initiation in 2007 and 2009 (CDC, 2013a), and the 2010 goal for breastfeeding infants at twelve months in 2012 (CDC, 2012), breastfeeding rates at six months still remain below the 2010 goal. The Healthy People 2020 goals increase the breastfeeding initiation rate target to 81.9%, and the goals for six and twelve months to 60.6% and 34.1%, respectively (U.S. DHHS, 2013). This increase from the 2010 goals reflects a pattern of relatively high breastfeeding initiation but a national deficiency in the continuation of breastfeeding, despite AAP recommendations for breastfeeding durations for one year or longer.

Beyond these efforts, the CDC also has determined that mothers belonging to certain demographics have much lower breastfeeding initiation and duration rates (CDC, 2013c). Improving outcomes for all infants will require targeting and supporting these at-risk demographics.

Though both initiation and duration of breastfeeding are complex and multifactorial processes, Kruse, Denk, Feldman-Winter, and Rotondo (2005) determined that about 60% of the variation in exclusive breastfeeding at discharge from the hospital is predictable from variations in socio-demographic characteristics. This suggests that while socio-demographic factors play a large part in determining breastfeeding outcomes, practices within the health-care setting also can be influential, perhaps affecting up to 40% of the unexplained variation in breastfeeding rates.

The World Health Organization (WHO) and United Nations Children's Fund (UNICEF) developed the Baby Friendly Hospital Initiative in 1991 that includes ten steps to

successful breastfeeding (see Figure 1). These practices have been shown to promote both initiation and extended duration of breastfeeding. The extent to which a birthing facility adopts these practices can have a direct effect on patients' breastfeeding outcomes (DiGirolamo, Grummer-Strawn, & Fein, 2008).

Although great variation in practice exists between all types of birthing facilities, birth centers are unique in their approach to caring for women and newborns. The American Association of Birth Centers (AABC, 2010a) characterizes birth centers as providing "family-centered care for healthy women through pregnancy, labor and birth" (para. 1). While birth center care is collaborative, midwives attend most births (Stapleton, Osborne, & Illuzzi, 2013) and practice a holistic approach to pregnancy, birth, and women's health care (AABC, 2010b). According to Rooks' midwifery model of care (1999), midwives provide expertise in "protecting, supporting, and enhancing the normal physiology of labor, delivery, and breastfeeding" (p. 370). Birth Centers provide unique experiences that promote both the initiation and extended duration of breastfeeding. Nevertheless, little research has examined the extended breastfeeding outcomes of mothers giving birth in birth centers.

For the purposes of this study, a *birth center* is a homelike facility existing within a healthcare system delivering a program of care that is designed using a wellness model of pregnancy and birth (AABC, 2010a). According to the CDC's National Vital Statistics Reports, 0.34% of 2010 U.S. births took place in a birth center (Martin et al., 2012).

In light of the unique, individualized care provided at birth centers and the continued emphasis in the U.S. on the importance of both initiation and extended duration of

breastfeeding, the aims of this study are to investigate the influence of both maternal and infant characteristics and location of birth on initiation and duration of breastfeeding. This study used the CDC's National Survey of Family Growth (NSFG) data. To our knowledge, no national study has evaluated breastfeeding duration outcomes in relation to location of birth, specifically birth centers, within the U.S.

## **LITERATURE REVIEW**

Both demographic and situational factors influence breastfeeding outcomes. The CDC's 2004 National Immunization Survey found that breastfeeding outcomes varied by race, socioeconomic level, and other demographic factors (CDC, 2006). The CDC reported that 71.5% of non-Hispanic white children breastfed at least once compared to 50.1% of non-Hispanic black children. Of the breastfed infants in the study, 53.9% of non-Hispanic white children and 43.2% of non-Hispanic black children breastfed for at least six months. Several additional demographic factors positively influenced breastfeeding initiation: (a) children were not eligible for WIC, a food and nutrition service for low-income families; (b) children with mothers who were twenty years and older, married or had some college education; (c) children who lived in urban areas or in the Western U.S.; and (d) children who lived above the poverty level (CDC, 2006).

Although certain demographic factors have been associated with more positive breastfeeding initiation and duration outcomes, factors related to the birth setting played a significant role as well. In their 2008 study, DiGirolamo, Grummer-Strawn, and Fein evaluated the use of six Baby-Friendly practices (see Figure 1) in the hospital setting and determined if exposure to those steps influenced breastfeeding duration at six weeks for

mothers who intended to breastfeed for at least two months. Controlling for various demographic, attitudinal, and behavioral factors, the researchers found that breastfeeding initiation within one hour, only breast milk given, and no pacifiers given, were influencers of extended breastfeeding duration. In spite of its limited scope, this study reinforces the effectiveness of the Baby-Friendly practices.

Merewood and associates (2005) conducted a similar study that evaluated breastfeeding initiation and exclusivity in health facilities ( $n = 28$ ) with the “Baby-Friendly” designation (i.e., those that demonstrated that the ten Baby-Friendly steps had been implemented). Baby-Friendly facilities had a mean breastfeeding initiation rate of 83.8% and an exclusive breastfeeding rate of 78.4%, compared to the national mean (general population) rates, 69.5% and 46.3%, respectively. Additionally, Baby Friendly facilities had high breastfeeding initiation rates among populations that normally have low breastfeeding rates, reinforcing that healthcare facility practices can greatly impact breastfeeding initiation outcomes, despite demographic factors. Six of the health facilities with birth center status reported almost 14% higher initiation rates than the other facilities (Merewood et al., 2005).

Maternity Practices in Infant Nutrition and Care (mPINC), a CDC biennial national survey that evaluates the infant feeding maternity care practices of every U.S. facility that routinely provides maternity care, demonstrates that birth centers provide care that supports breastfeeding (CDC, 2013d). Of the responding facilities, birth centers, when compared to the all facility average, demonstrated the greatest percent compliance in practicing the Baby-Friendly steps determined to have the most effect on breastfeeding

duration (DiGirolamo et al., 2008): (a) breastfeeding initiation within one hour (92% compared to 51%), (b) only breast milk given (79% compared to 22%), and (c) no pacifiers given (94% compared to 30%) (CDC, 2013d). The 2007 mPINC results were similar, demonstrating that birth centers overall consistently practice infant feeding maternity care associated with positive outcomes in breastfeeding initiation and duration through higher mean total scores, compared with hospitals, on seven subscales regarding maternity practices known to enhance breastfeeding (CDC, 2008).

Midwives attend most births in birth centers (Stapleton et al., 2013), and care by midwives has been associated with higher rates of breastfeeding initiation. A Cochrane review of the midwife-led model of care reported that women under midwife-care were more likely to initiate breastfeeding (Hatem, Sandall, Devane, Soltani, & Gates, 2008). The Birthplace in England Collaborative Group (2011) reinforced positive breastfeeding initiation outcomes for births attended by midwives; they found that for planned births at home and freestanding midwifery units, babies were more likely to breastfeed at least once compared with obstetric unit births.

An American study comparing traditional physician-based perinatal care to a collaborative care model, (i.e., midwives and obstetricians practice together with midwives managing the prenatal and intrapartum care of women with low perinatal risk), found better breastfeeding initiation outcomes in birth center births. Upon discharge, 91.8% of mothers in the collaborative care model were breastfeeding, as opposed to 82.6% of mothers in traditional care (Jackson et al., 2003). While all of these studies report positive

breastfeeding initiation rates with birth center care, none evaluated the breastfeeding duration in association with birth center care.

Two studies evaluated breastfeeding duration in relation to location of birth, but both took place in foreign birth centers attended by midwives: Stockholm, Sweden (Waldenstrom & Nilsson, 1994) or Adelaide, Australia (Byrne, Crowther, & Moss, 2000). In contrast to the results found by Merewood et al. (2005) both Byrne and colleagues (2000) and Waldenstrom and Nilsson (1994) found that birth center care had no effect on breastfeeding duration. Byrne et al.'s (2000) randomized controlled trial of birth center versus conventional hospital delivery care in Australia did not find any statistically significant differences in breastfeeding rates at discharge (88% and 90%, respectively) and at 6-weeks post-partum (31% and 36%, respectively). The only statistically significant differences reported were that 58% of women in the birth center group felt breastfeeding was encouraged immediately after birth compared to 36% of women in conventional hospital delivery care (Byrne et al., 2000). Waldenstrom and Nilsson's (1994) randomized controlled trial of birth center care in Sweden reported that two months after their expected delivery date, 93% of women in both the birth center care group and the standard obstetric care group were exclusively breastfeeding. Furthermore, the birth center group and the standard obstetric care group breastfed their infants for an average of 8.6 and 8.5 months, respectively.

While these studies do not support differences in breastfeeding duration outcomes based on location of care, it is notable that midwives managed all normal births for both birth center and standard obstetric care groups in the studies in Sweden and Australia, a

practice common outside of the U.S. In contrast, midwives only attended 8.4% of births in the U.S. in 2010 (Martin et al., 2012). Consequently, while these studies found no differences in breastfeeding outcomes, major similarities between the locations of birth may not be applicable in the U.S.

## METHODS

### DESIGN

This study is a secondary analysis of data from the CDC's National Survey of Family Growth (NSFG) 2006-2010 Female Pregnancy Files. The NSFG gathers information for statistical analysis and planning health services and education programs regarding pregnancy; medical care associated with reproduction; marriage, cohabitation, and adoption; and women's attitudes about reproduction and marriage (U.S. DHHS, 2011). Because all data were de-identified the authors obtain IRB approval for non-human subject research from a Midwestern academic medical center prior to study initiation.

The aims of this study are to determine if there are differences in breastfeeding initiation and duration among location of birth and various maternal, infant, and demographic characteristics. The following research questions were explored: (a) Are there differences in breastfeeding initiation and duration based on location of birth (hospital, birth center, or other)?, and (b) Are there differences in breastfeeding initiation and duration for: prenatal information (i.e., *when prenatal care began*), delivery information (i.e., *infant birth weight, low birth weight, infant gender, and deliver method*); pregnancy outcomes (i.e., *duration of pregnancy and preterm delivery*); and demographic characteristics (i.e., *maternal age, race, marital status/family type, highest education, place*

*of residence, mother born outside of the U.S., religion, smoking status, maternity leave, method of payment for delivery, and poverty level)?*

## **SAMPLE AND SETTING**

The NSFG sample for this study consists of 4,485 pregnancies for women between the ages of 15 and 44 who reported one or more pregnancy. The sample was determined using multi-stage area stratified probability samples drawn from 110 primary sample units. Over-sampled populations included blacks and Hispanics, but sampling weights were used to adjust for the sampling rates, so the sample is nationally representative (Lepkowski, Mosher, Davis, Groves, & Van Hoewyk, 2010). This survey sample includes longitudinal data for mothers, with some reporting more than one birth; thus, included in the analysis is the reported first live birth for each mother. Additional exclusion criteria were: (a) live births resulting in a reported adoption, (b) pregnancies that have not delivered, and (c) pregnancies resulting in multiple births.

## **PROCEDURES**

Data were obtained from in-person interviews conducted in the respondents' homes between June 2006 through June 2010. Only one individual from each household was consented and interviewed. Following training, female interviewers conducted interviews using laptop computers. Respondents between the ages of 15 and 17 required signed consent from a parent before being asked for their signed assent (Lepkowski et al., 2010). The average interview length was 80 minutes, and all respondents were given \$40 as a token of appreciation (U.S. DHHS, 2011). Most of the interview was conducted through a computer-assisted personal interview (CAPI) with one section conducted using audio

computer-assisted self interview (ACASI) due to the sensitive nature of some of the items on the survey (Lepkowski et al., 2010).

## MEASURES

The NSFG Female Questionnaire containing nine sections was used to collect data regarding pregnancy and birth. Only questions from the first two sections of the questionnaire were included: (a) *background and demographic information*, and (b) *pregnancy and adoption-related information* (See U.S. DHHS, 2011, for information on the other sections). The Female Pregnancy File used for this analysis included the following variables: (a) *breastfeeding*, (b) *prenatal information*, (c) *delivery information*, (d) *pregnancy outcomes*, and (e) *demographic characteristics* (see Table 1 for variable operational definitions).

*Breastfeeding.* *Breastfeeding initiation* was coded as yes=1 and no=0. *Duration of breastfeeding*, the infant's age when the mother stopped breastfeeding, is the age of the infant in weeks. Never breastfed was coded as 0 and breastfed less than one week was coded as 0.5. *Duration of breastfeeding* ranged from 0 to 208 weeks.

*Birth Location.* *Birth location*, is operationalized as in a hospital=1, in a birthing center=2, or other=3.

*Prenatal Information.* *When prenatal care began* ranged from one to forty weeks or was categorized as no prenatal care (95).

*Delivery information.* *Infant birth weight* ranged from 1.0 to 16.0 pounds. *Low birth weight* (less than five and one-half pounds) was coded as yes=1 and no=0. *Infant gender*

was male=1 and female=2. *Delivery method* was live birth by vaginal delivery (1) or live birth by Cesarean section (2).

*Pregnancy outcomes.* Pregnancy outcomes provide data regarding the outcome of each pregnancy. *Duration of pregnancy*, the infant's gestational age when the pregnancy ended, ranged from 22 to 48 weeks. *Preterm delivery* was delivery that occurs at 36 weeks or earlier.

*Demographic characteristics.* Demographic variables were obtained through recodes or constructed variables from the Female Respondent File (U.S. DHHS, 2011). The selected variables were determined based on factors that have historically been associated with higher rates of breastfeeding: (a) *maternal age*, (b) *race*, (c) *marital status/family type*, (d) *highest education*, (e) *place of residence*, (f) *mother born outside of the U.S.*, (g) *religion*, (h) *smoking status*, (i) *maternity leave*, (j) *method of payment for delivery*, and (k) *poverty level*. (See Table 1 for operational definitions and citations).

## DATA ANALYSIS

SPSS 20.0 was used for the analysis. Frequencies and descriptive statistics were used to examine each of the variables for missing data and apply exclusion criteria. Chi-Square ( $\chi^2$ ) and One-way Analysis of Variance (ANOVA) tests were used to answer the first research question: Are there differences in breastfeeding initiation and duration based on location of birth (hospital, birth center, or other)? ANOVA, *t*-test, Chi-square ( $\chi^2$ ), and Pearson (*r*) tests were used to explore the second research question: Are there differences in breastfeeding initiation and duration for prenatal information, delivery information, pregnancy outcomes, and demographic characteristics?

## RESULTS

The final study sample consisted of 4,485 mothers reporting their first live birth; of these, 1,412 mothers reported birth location, of which 98 % occurred in the hospital setting. Table 2 depicts the means and frequencies for breastfeeding, birth location, prenatal information, delivery information, pregnancy outcomes, and demographic characteristics.

The first research question was to determine if differences exist in breastfeeding initiation and duration by birth location. Chi-square test results indicated no significant difference ( $p \geq .01$ ) in breastfeeding initiation by location of birth. ANOVA test results revealed significant differences in breastfeeding duration between births that took place in a hospital ( $M=17.2$  weeks;  $SD =25.2$ ) and births that took place in a birth center ( $M=44.1$  weeks;  $SD=39.6$ ). Moreover, only 27% of mothers who delivered in the hospital breastfed for six months or longer, and 7.3% breastfed for twelve months or longer. In contrast, 59.1% of mothers who delivered in a birth center breastfed for six months or longer and 36.4% breastfed for twelve months or longer. Differences in breastfeeding duration for births at other sites ( $M=77.1$  weeks,  $SD=74.9$ ) were non-significant.

The second research question was to identify breastfeeding outcome differences by prenatal and delivery information, pregnancy outcomes, and demographic characteristics. When prenatal care began did not significantly affect how long mothers breastfed. Additionally, there were no significant differences in breastfeeding initiation or duration by infant gender or delivery method. Though there were no differences in breastfeeding initiation rates for mothers of low birth and normal weight infants, mothers of low birth

weight infants breastfed for a significantly shorter duration ( $M=14$  weeks) than mothers of normal birth weight infants ( $M=19$  weeks). Mothers of preterm infants had lower breastfeeding initiation rates (58%) than mothers of full term infants (64%) and breastfed for a significantly shorter duration ( $M=15$  weeks) than mothers of full term infants ( $M=19$  weeks) (see Table 3).

Demographic characteristics significant for breastfeeding outcomes include: maternal age, race/ethnicity, mother's highest education level, smoking status, and poverty level (see Table 4). Older mothers had higher breastfeeding duration than younger mothers ( $r = .19$ ). Regarding race/ethnicity, Hispanic and non-Hispanic other mothers had significantly longer breastfeeding duration ( $M=25$  weeks and  $M=29$  weeks, respectively) than White ( $M=18$  weeks) or Black ( $M=10$  weeks) mothers. Mothers with some college or more had significantly higher breastfeeding initiation and duration (75% and  $M=23$  weeks, respectively) than mothers with a high school diploma or less (54% and  $M=15$  weeks, respectively). Mothers with incomes above the poverty level had significantly higher breastfeeding initiation and duration (69% and 20 weeks, respectively), than mothers with incomes at or below the poverty level (53% and 16 weeks, respectively). Mothers not smoking during pregnancy had higher breastfeeding initiation and duration (69% and  $M=19$  weeks, respectively) than mothers who smoked at all once they knew they were pregnant (53% and  $M=9$  weeks, respectively). Other demographic characteristics significant for breastfeeding outcomes include marital status, place of residence, mother born outside of the U.S., religion, maternity leave, and method of payment for delivery (see Table 4).

## DISCUSSION

This study was the first to investigate both initiation and duration of breastfeeding in relation to location of birth. Findings from this study were inconsistent with Merewood et al. (2005), the Birthplace in England Collaborative Group (2011), and Jackson et al. (2003), who found significant differences in breastfeeding initiation rates between hospitals and birth centers. However, our findings indicate that mothers who gave birth in a birth center breastfed two and a half times longer on average than mothers who gave birth in a hospital. This outcome supports that birth centers support infant feeding practices associated with extended breastfeeding. Although the other delivery location was not delineated, this category could include home delivery or delivery in route to the hospital as examples.

Prenatal and delivery factors identified as impacting breastfeeding outcomes include preterm delivery and infant birth weight. Consistent with Radtke's (2011) findings, this study found that preterm delivery was associated with both lower breastfeeding initiation and duration. Though there are many speculations regarding the impact of analgesia on breastfeeding outcomes, delivery method (vaginal vs. cesarean delivery) did not significantly influence breastfeeding outcomes in this study. These findings are consistent with the findings of both DiGirolamo et al. (2008) and Murray, Ricketts, and Dellaport (2006).

As supported in the literature, multiple maternal demographic factors impacted breastfeeding outcomes in this study. Maternal factors strongly associated with initiation and longer breastfeeding duration are: (a) Hispanic and non-Hispanic other race, (b) some college education or more, (c) mother married or cohabitating, (d) mother born outside of

the U.S., (e) mother not smoking, (f) payment by own income or insurance, and (g) income above the poverty level. While maternal age was identified in the literature to strongly impact both initiation and duration (CDC, 2006; Dubois & Girard, 2003; Kruse et al., 2005; Murray et al., 2006), the differences were significant but relatively small for this sample. Catholic mothers and mothers of other religions had higher initiation rates and longer breastfeeding duration than Protestant mothers and mothers claiming no religion. This is different from Burdette and Pilkauska's (2012) results that revealed higher breastfeeding rates for mothers that were Conservative Protestant, Muslim, other Christian, or other religious faiths. However, religious preference was operationalized differently in each study.

Unlike Mandal and colleagues' (2010) results that indicated full-time employment was negatively correlated with initiation and duration, this study found that mothers who took maternity leave from their job or did not take maternity leave because it was not needed or not offered had higher rates of breastfeeding initiation and longer duration than mothers who were not employed during the pregnancy. The differences could be due to the mother's inability to find work, and the impact her unemployment may have on her income, a factor established in this study and others (AAP, 2012; CDC, 2006) that greatly impact breastfeeding outcomes.

#### LIMITATIONS AND RECOMMENDATIONS

Limitations of the study are use of secondary analysis of the NSFG data that does not include some variables known to influence breastfeeding outcomes. These variables include use of analgesia during labor (DiGirolamo et al. 2008), prenatal attitudes toward

breastfeeding and anticipated length of breastfeeding (Forster, McLachlan, & Lumley, 2006; O'Campo, Raden, Gielen, & Wang, 1992; Waldenstrom & Nilsson, 1994), and social factors, including peers and family who support breastfeeding or the mother was breastfed herself (Forster et al., 2006).

This study supports that birth centers consistently practice infant feeding maternity care known to support extended breastfeeding duration. In an effort to achieve Healthy People 2020 goals of increasing the proportion of infants who breastfed at six months and twelve months to 60.6% and 34.1%, respectively, the authors recommend improving access to birth centers. This could be achieved through advocating for enhanced insurance coverage of birth center care and promoting the use of birth centers for deliveries across the U.S. Additionally, as most births take place in a hospital, nurses have an obligation to encourage hospital administration to integrate Baby Friendly practices into their standards of care, promote a unit culture supporting these practices, and focus efforts on black mothers and mothers with low education and income to improve breastfeeding outcomes.

Lastly, there are a limited number of studies examining birth location impact on breastfeeding outcomes, especially breastfeeding duration. Further research is needed in this area. Although there have been studies that investigated the impact of Baby Friendly practices on breastfeeding initiation, few studies have evaluated the impact of these practices on duration, especially beyond the six weeks after delivery. We recommend extending research of the impact of Baby Friendly practices on breastfeeding duration beyond six weeks after delivery.

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TABLE 1 OPERATIONAL DEFINITIONS AND REFERENCES FOR DEMOGRAPHIC AND BACKGROUND

VARIABLES

<b>Variable</b>	<b>Operational definition</b>	<b>Citation</b>
Maternal age at pregnancy outcome	Ranged from 12.8 to 42.4 years	CDC, 2006; Dubois & Girard, 2003; Kruse et al., 2005; Murray et al., 2007
Race	Hispanic=1, Non-Hispanic White=2, Non-Hispanic Black=3, Non-Hispanic Other=4	CDC, 2006; Kruse et al., 2005; Murray et al., 2007
Marital status/family type	Married/Cohabiting=1, Divorced/Separated/Widowed=2, Never married, not cohabitating=3	CDC, 2006; Dubois & Girard, 2003; DiGirolamo et al., 2008; Sparks, 2010
Highest Education	High school diploma or less=0, Some college or more=1	CDC, 2006; Kruse et al., 2005; Murray et al., 2007
Place of residence	Metropolitan Statistical Area (MSA), central city= 1; MSA, other= 2; Not MSA=3	CDC, 2006; Sparks, 2010
Mother born outside of the U.S.	Yes=1, No=5	Kruse et al., 2005; Sparks, 2010
Religion	No religion=1, Catholic=2, Protestant=3, Other religions=4	Burdette & Pilkauskas, 2012
Smoking status	No, mother did not smoke after she knew she was pregnant=0, Yes, mother smoked at all after she knew she was pregnant=1	DiGirolamo et al., 2008; Forster et al., 2006; Murray et al., 2007
Maternity leave	Not employed during this pregnancy=1, Took maternity leave from job held during this pregnancy=2, Did not take- not needed/other=3	DiGirolamo et al., 2008; Mandal et al., 2010; Sparks, 2010; O'Campo et al., 1992
Method of payment for delivery	Own income only=1, Insurance=2, Medicaid/ government assistance mentioned at all=3, All other combinations of payment methods=4	Weiner & Weiner, 2011
Income/Poverty Status	Above poverty level=0, Below or at poverty level (100%)=1	AAP, 2012; CDC, 2006; Dubois & Girard, 2003; Murray et al., 2007; Sparks, 2010; Weiner & Weiner, 2011

TABLE 2 MEANS AND FREQUENCIES FOR BREASTFEEDING, BIRTH LOCATION, PRENATAL INFORMATION, DELIVERY INFORMATION, PREGNANCY OUTCOMES, AND DEMOGRAPHIC CHARACTERISTICS.

<b>Variable</b>	<b>Statistic</b>	
	<b><i>n</i></b>	<b><i>%</i></b>
<b>Breastfeeding (N=4,485)</b>		
Initiation		
No (0)	1,652	36.8
Yes (1)	2,833	63.2
	<b><i>M</i></b>	<b><i>SD</i></b>
Duration (in weeks)	18.67	27.92
<b>Birth Location (n=1,412)</b>	<b><i>n</i></b>	<b><i>%</i></b>
In a hospital (1)	1,385	98.1
In a birthing center (2)	22	1.6
Other (3)	5	0.4
<b>Prenatal Information (n=1,390)</b>	<b><i>M</i></b>	<b><i>SD</i></b>
When prenatal care began (weeks gestation)	8.83	4.66
<b>Delivery Information</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Infant birth weight (in pounds) (n=4,405)	7.19	1.30
	<b><i>n</i></b>	<b><i>%</i></b>
Low birth weight (n=4,405)		
No, 5.5 pounds or greater (0)	4,051	92.0
Yes, less than 5.5 pounds (1)	354	8.0
Infant Gender (N=4,485)		
Male	2,281	50.9
Female	2,204	49.1
Delivery method (n=4,482)		
Live birth by vaginal delivery (1)	3,429	76.5
Live birth by Cesarean section (2)	1,053	23.5
<b>Pregnancy Outcomes (n=4,484)</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Duration of completed pregnancy (in weeks)	38.72	2.41
<b>Preterm delivery (N=4,485)</b>	<b><i>n</i></b>	<b><i>%</i></b>
Full term, ≥ 37 weeks (0)	3,929	87.6
Preterm, ≤ 36 weeks (1)	556	12.4
<b>Demographic Variables (N=4,485)</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Maternal age at pregnancy outcome (in years)	22.87	5.16
	<b><i>n</i></b>	<b><i>%</i></b>
Race		
Hispanic (1)	1,271	28.3
Non-Hispanic White (2)	1,997	44.5
Non-Hispanic Black (3)	1,003	22.4
Non-Hispanic Other (4)	214	4.8
Marital status/family type	3,081	68.7
Married/Cohabiting (1)	51	1.1
Divorced/Separated/Widowed (2)	1,353	30.2
Never married, not cohabiting (3)		
Highest education		
High school diploma or less (0)	2,442	54.5
Some college or more (2)	2,043	45.5

<b>Variable</b>	<b>Statistic</b>	
Place of residence		
Metropolitan Statistical Area, Central City (1)	1,814	40.4
Metropolitan Statistical Area, Other (2)	1,953	43.5
Not Metropolitan Statistical Area (3)	718	16
Mother born outside of the U.S.		
No (0)	3,457	77.1
Yes (1)	1,027	22.9
Religion		
No religion (1)	766	17.1
Catholic (2)	1,240	27.6
Protestant (3)	2,157	48.1
Other religions (4)	322	7.2
Smoking status ( <i>n</i> =1,412)		
No, mother did not smoke after she knew she was pregnant (0)	1,254	88.8
Yes, mother smoked at all after she knew she was pregnant (1)	158	11.2
Maternity leave ( <i>n</i> =1,412)		
Not employed during this pregnancy (1)	420	29.7
Took maternity leave from job held during this pregnancy (2)	612	43.3
Did not take- not needed/not offered/other (3)	380	26.9
Method of payment for delivery ( <i>n</i> =1,412)		
Own income only (1)	35	2.5
Insurance (2)	632	44.8
Medicaid/Government assistance mentioned at all (3)	712	50.4
All other combinations of payment methods (4)	33	2.3
Poverty Level		
Above poverty level (0)	2,978	66.4
Below or at poverty level (100%) (1)	1,507	33.6

TABLE 3 BREASTFEEDING INITIATION AND DURATION FOR MATERNAL/INFANT CHARACTERISTICS

	<b>BREASTFEEDING</b>				
	<b>Initiation</b> No (0)    Yes (1)		<b>Test</b> <b>Statistic</b> <i>p</i> ≤ .01	<b>Duration</b> <b>(weeks)</b>	<b>Test</b> <b>Statistic</b> <i>p</i> ≤ .01
<b>Prenatal Information (n =1,390)</b>					
When prenatal care began (weeks gestation)	<i>M(SD)</i> 9.6(5.4)	<i>M(SD)</i> 8.5(4.2)	$t_{(741)} = 3.875$	--	$r = -.04$ NS
<b>Delivery Information (N=4,485)</b>					
Infant birth weight (in pounds) (n=4,405)	<i>M(SD)</i> 7.1(1.3)	<i>M(SD)</i> 7.2(1.3)	$t_{(4,403)} = -3.41$	--	$r = .05$
Low birth weight (n=4,405) No, 5.5 pounds or greater (0) Yes, less than 5.5 pounds (1)	% 36.8 42.1	% 63.2 57.9	$\chi^2_{(1)} = 3.97$ NS	<i>M(SD)</i> 18.7(27.9) 14.2(23.4)	$t_{(446)} = 3.42$
Infant Gender Male (1) Female (2)	% 36.8 36.9	% 63.2 63.2	$\chi^2_{(1)} = 0.01$ NS	<i>M(SD)</i> 18.8(27.9) 18.6(28.0)	$t_{(4,483)} = .24$ NS
Delivery Method (n=4,482) Live birth by vaginal delivery (1) Live birth by Cesarean section (2)	% 36.3 38.5	% 63.7 61.5	$\chi^2_{(1)} = 1.56$ NS	<i>M(SD)</i> 19.1(28.5) 17.2(26.0)	$t_{(1,888)} = 2.06$ NS
<b>Pregnancy Outcomes (N=4,485)</b>					
Duration of completed pregnancy (in weeks) (n=4,484)	<i>M(SD)</i> 38.6(2.5)	<i>M(SD)</i> 38.8(2.4)	$t_{(3287)} = -3.66$	--	$r = .06$
Preterm delivery Full term, ≥ 37 weeks (0) Preterm, ≤ 36 weeks (1)	% 36.1 41.9	% 63.9 58.1	$\chi^2_{(1)} = 7.02$	<i>M(SD)</i> 19.2(28.6) 14.7 (22.5)	$t_{(831)} = 4.29$

Note: NS = non-significant

Table 4.

BREASTFEEDING INITIATION AND DURATION BY DEMOGRAPHIC CHARACTERISTICS

	BREASTFEEDING (N=4,485)				
	Initiation		Test Statistic	Duration	Test Statistic
	No (0)	Yes (1)	$p \leq .01$	(weeks)	$p \leq .01$
Maternal age at delivery (in years)	<i>M(SD)</i> 21.3(4.5)	<i>M(SD)</i> 23.8(5.3)	$t_{(3906)} = -17.1$	--	$r = .19$
Race	%	%	$\chi^2_{(3)} = 328.0$	<i>M(SD)</i>	$F_{(3,4481)} = 67.2$
Hispanic (1)	25.2	74.8		24.6(32.4)	1 vs 2; 1 vs 3
Non-Hispanic White (2)	34.2	65.8		18.3(25.9)	2 vs 3; 2 vs 4
Non-Hispanic Black (3)	59.9	40.1		9.6(19.8)	3 vs 4
Non-Hispanic Other (4)	22.9	77.1		29.2(36.7)	
Marital status/family type	%	%	$\chi^2_{(2)} = 298.4$	<i>M(SD)</i>	$F_{(2,4482)} = 65.4$
Married/Cohabiting (1)	28.5	71.5		21.8(28.9)	1 vs 3
Divorced/separated/widowed (2)	41.2	58.8		16.8(23.8)	
Never married, not cohabiting (3)	55.7	44.3		11.6(24.4)	
Highest education	%	%	$\chi^2_{(1)} = 207.1$	<i>M(SD)</i>	$t_{(4301)} = -8.5$
High school or less (0)	46.3	53.7		15.4(27.4)	
Some college or more (1)	25.5	74.5		22.5(28.1)	
Place of residence	%	%	$\chi^2_{(2)} = 59.1$	<i>M(SD)</i>	$F_{(2,4482)} = 29.8$
MSA, Central City (1)	37.9	62.1		18.6(28.8)	1 vs 3
MSA, Other (2)	31.8	68.2		21.2(28.8)	2 vs 3
Not MSA (3)	47.8	52.2		11.9(21.3)	
Mother born outside of the U.S.	%	%	$\chi^2_{(1)} = 224.5$	<i>M(SD)</i>	$t_{(1315)} = -14.8$
No (0)	42.7	57.3		14.7(23.9)	
Yes (1)	17.0	83.0		32.1(35.4)	
Religion	%	%	$\chi^2_{(3)} = 160.7$	<i>M(SD)</i>	$F_{(3,4481)} = 45.8$
No religion (1)	41.5	58.5		18.0(28.9)	1 vs 4
Catholic (2)	28.1	71.9		22.2(29.9)	2 vs 3
Protestant (3)	43.6	56.4		14.9(24.4)	2 vs 4
Other religions (4)	14.3	85.7		32.1(33.8)	3 vs 4
Smoking status (n=1,412)	%	%	$\chi^2_{(1)} = 16.3$	<i>M(SD)</i>	$t_{(230)} = 5.4$
No (0)	31.4	68.6		18.9(26.7)	
Yes (1)	47.5	52.5		9.3(20.5)	
Maternity leave (n=1,412)	%	%	$\chi^2_{(2)} = 29.9$	<i>M(SD)</i>	$F_{(2,1409)} = 3.3$
Not employed (1)	43.1	56.9		15.1(24.9)	NS
Maternity leave (2)	26.8	73.2		19.0(24.9)	
No maternity leave (3)	32.6	67.4		19.1(29.4)	
Method of payment for delivery (n=1,412)	%	%	$\chi^2_{(3)} = 105.6$	<i>M(SD)</i>	$F_{(3,1408)} = 21.7$
Own income only (1)	25.7	74.3		31.6(39.1)	2 vs 3
Insurance (2)	19.3	80.7		23.0(27.5)	

	<b>BREASTFEEDING (N=4,485)</b>				
	<b>Initiation</b>		<b>Test Statistic <i>p</i> ≤ .01</b>	<b>Duration (weeks)</b>	<b>Test Statistic <i>p</i> ≤ .01</b>
	<b>No (0)</b>	<b>Yes (1)</b>			
Medicaid/Gov't assistance (3)	45.4	54.6		12.7(22.8)	
All other payment types (4)	45.5	54.5		16.1(29.1)	
Poverty Level	%	%	$\chi^2_{(1)} = 107.1$	<i>M(SD)</i>	$t_{(4483)}=4.97$
Above poverty level (0)	31.5	68.5		20.1(27.6)	
Poverty level or below (1)	47.3	52.7		15.8(28.3)	

FIGURE 1 THE TEN STEPS TO SUCCESSFUL BREASTFEEDING\*

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in the skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within one hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation, even if they are separated from their infants.
6. Give infants no food or drink other than breast-milk, unless medically indicated.
7. Practice rooming in - allow mothers and infants to remain together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no pacifiers or artificial nipples to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or birth center.

\*World Health Organization (1989). *Protecting, promoting, and supporting breast-feeding: the special role of maternity services*. Switzerland: World Health Organization; Retrieved from <http://whqlibdoc.who.int/publications/9241561300.pdf?ua=1>.

RHETORICAL STRATEGIES IMPLEMENTED BY THE AMERICAN  
MEDICAL ASSOCIATION TO IDENTIFY ROLES WITHIN THE  
INTERPROFESSIONAL HEALTHCARE TEAM

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## ABSTRACT

**Purpose:** Healthcare reform is introducing new models of care to serve complex patient needs, including expanded roles for nursing. This has resulted in interested parties debating formal definitions of provider roles in healthcare teams. The purpose of this study is to conduct a rhetorical criticism of content produced by the American Medical Association (AMA) concerning the role of providers within the healthcare team.

**Theoretical/Conceptual Framework:** This study's framework uses rhetorical criticism, an analysis of an organization's "strategic use of symbols to generate meaning" (Hoffman & Ford, 2010). This analysis evaluates the rhetoric on its potential function both to influence the definition of provider roles and to critique how the organization's potential power may be implemented. By understanding what the organization displays in its public texts, one can potentially infer the intentions of the organization.

**Method:** Press releases and newsletter articles publicly available from the AMA website from 2010 to 2014 were selected based on their relevance to the discussion of healthcare team leadership. The texts were analyzed using a systematic approach to identify and describe rhetorical strategies. This is a systematic, rigorous method for deconstructing texts in order to draw conclusions about the choices a rhetor made in achieving a goal. The analysis was then further enhanced with relevant contextual and historical research, analyzing the development of health care professions as disciplines in the US, and the organization's history itself in its development as a trade association.

**Results:** Rhetorical strategies used by the AMA include: Appealing to the values of patient safety, teamwork, and competent leaders of teams; and making logical arguments based on contradictions in lay definitions of teamwork and independence. These are used to argue for maintaining legal and financial interests for physicians within healthcare systems. Limitations include analyzing select materials publicly available without an AMA membership.

**Conclusions:** Defining the role of members within the interprofessional team is of interest to healthcare providers and their representative organizations as new models of care attempt to increase quality, access, and value within the system. As nursing organizations attempt to expand nursing scope of practice at the state level, oppositional views of these bills should be understood to provide counterarguments and effectively engage stakeholders.

## INTRODUCTION

Healthcare teamwork has been a much-discussed subject in recent years as a way to improve the quality of care offered, particularly in primary care. Teamwork and collaboration among different professions within the healthcare setting are cited as practices contributing to positive patient outcomes in the clinical setting (IOM, April 2010). While these concepts are receiving renewed focus in contemporary discussions of health care policy, these concerns have been seen for years, with the World Health Organization calling for increased interprofessional education and teamwork as early as 1973 (Lapkin, Levett-Jones, & Gilligan, 2011). Amid shortages of primary care physicians dating back to the 1950s, the creation of the professions of nurse practitioner and physician assistant through formal educational programs began in 1965, offering increased quality and value for underserved populations (Cawley, Cawthorn, & Hooker, 2012).

In 2010, the passage of the Affordable Care Act (ACA) not only mandated increased health insurance coverage in the United States, but it also called for increased funds to train nurses and nurse practitioners (Kaiser Family Foundation, 2013). After the end of the first open enrollment period in 2014, approximately 9.5 million fewer adults were uninsured compared to the previous year (Commonwealth Fund, 2014). While some feel the current healthcare workforce can handle a steady short-term increase in outpatient visits from the newly insured (Commonwealth Fund, 2015), many are concerned about the system's long-term solvency. An aging healthcare workforce and aging population as a whole (National Governors Association, 2012), lead some to predict that the healthcare system will create up to 1.05 million new registered nurse positions by 2022 (BLS, 2013), and between 12,500 and 31,100 primary care physician positions to fill by 2025 to keep up with demand

(IHS, 2015). The Affordable Care Act also placed an increased emphasis on providing higher quality healthcare for a greater value through several means, including national strategies for patient outcomes and quality improvement, and value-based purchasing programs to hospitals accepting Medicare patients (Kaiser Family Foundation, 2013).

Recent rethinking of how to provide comprehensive primary care has also led to an increased interest in teamwork and leadership. The concept of the Patient Centered Medical Home (PCMH) is one model of primary care delivery emphasizing teamwork among different professions in order to provide more coordinated and comprehensive care. The concept was first introduced in the 1960s, yet gained the increased attention of medical organizations and insurance companies through the 1990s and 2000s as a way to revive and improve primary care (Robert Graham Center, 2007). In 2007, several medical organizations, including the American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians, and the American Osteopathic Association, introduced seven key principles for PCMHs to follow; one of these explicitly states that physicians lead the medical home (Patient Centered Primary Care Collaborative, 2007). Accrediting bodies were interested in certifying these organizations; the Joint Commission chose to start accrediting PCMHs that had nurse practitioner leaders in 2011 (Joint Commission, 2014).

In 2008, the Robert Wood Johnson Foundation (RWJF) approached the Institute of Medicine (IOM) to initiate a partnership exploring challenges to the nursing profession providing quality care in the 21<sup>st</sup> century, called the RWJF Initiative on the Future of Nursing. The site meetings culminated in *The Future of Nursing: Leading Change, Advancing*

*Health*, often referred to as the *Future of Nursing* report. This text provided recommendations on changes that may benefit nursing in the areas of education, practice, leadership, and data collection. One recommendation was for scope of practice laws to be changed allowing advanced practice registered nurses (APRNs) to practice to the full extent of their education and training.

Following the report's publication, the RWJF and AARP backed The Future of Nursing: Campaign for Action, a website ([championnursing.org](http://championnursing.org)) central to the campaign of implementing recommendations from the IOM (RWJF, 2015). Among many recommendations, activities included forming state coalitions to advocate for legislation allowing APRNs to practice to the full extent of their training; since 2010, several states have passed model legislation stemming from the APRN Consensus Model (National Council of State Boards of Nursing, 2015). Currently nurse practitioners working in 20 states and the District of Columbia have full scope of practice based on their education and training, with many states still debating this issue (American Association of Nurse Practitioners, 2015).

While the IOM (2011) stated that barriers exist to expanding scope-of-practice for APRNs, including from medical organizations, it did not go into specific detail about these groups' actions. After study of the aforementioned report from the IOM, the author became curious as to the reaction and opinions of other organizations that may be opposed to independent practice for APRNs in states currently requiring more collaborative or supervisory roles with physicians. Due to state, organizational, and professional differences involved, this quickly becomes a complex issue to tackle. For purposes of this study, one

organization was chosen as an exemplar for how healthcare team communication is communicated at the professional organization level. The American Medical Association (AMA), a trade organization dedicated “to promote the art and science of medicine and the betterment of public health” through providing information and advocacy to physicians and medical students (AMA, 2015), was chosen due to its size, history of physician advocacy, and availability of information concerning healthcare teams on its website.

The purpose of this study is to conduct a rhetorical criticism of select content produced by the AMA concerning the role of providers within the healthcare team. In addition, the study provides relevant historical and contextual background on why the AMA may have chosen this rhetoric at this particular time.

## METHODS

### **RESEARCH METHODOLOGY**

This study’s framework uses rhetorical criticism, an analysis of an organization’s “strategic use of symbols to generate meaning” (Hoffman & Ford, 2010, p. 2). This type of analysis dates back to Aristotelian judgment of public speeches based on ethos, pathos, and logos. Contemporary rhetorical criticism modifies this approach to incorporate rhetoric found in modern-day forms of communication on the Internet, newspapers, television, and radio. Both are ways to analyze messages, which is particularly useful when evaluating the rhetoric produced by organizations. An organization, as defined by Hoffman and Ford (2010), is a group of people with three characteristics: a common purpose, a willingness to cooperate, and communication. They are formed to help people reach goals they cannot accomplish alone. Businesses may be the first organizations that come to mind, but the

term may also include schools, faith-based groups, trade associations, and other groups meeting the criteria above. As “the largest producers of rhetoric in contemporary society” (p. 17), studying what an organization chooses to display in its public texts can help one infer the intentions of the particular organization in question, and may help one become a better consumer, employee, and/or member of society.

Rhetorical criticism is conducted using a multi-step, qualitative process (Ford, 1999). First, the critical problem is defined, either through defining interesting texts produced by an organization, or by studying a theory or method question. Next, texts are selected for research based on their relevance to the problem, representativeness, immediacy, and distinctiveness. Third, the texts are analyzed using an open-ended analysis (see Analysis Worksheet, Appendix C). Fourth, relevant contextual, historical, and theoretical research is conducted to give organizational context as to why this organization is using this rhetoric at this time. Finally, an explanation and evaluation of the rhetoric presented by the organization in question is developed (for more detail, see Appendix B).

This framework may be used to analyze groups for differing reasons, including how corporations’ views of work/life balance may reinforce views of traditional family structures (Hoffman & Cowen, 2008), or to see how public communication by trade associations affect national healthcare policy (Ford, 1999). The intention of using this framework for texts produced by the AMA is to analyze this group’s potential function to influence the definition of provider roles at the state and organizational level, and to critique how their potential power may be implemented through policy.

### *Sample Texts*

Texts were initially chosen by searching the AMA's website (ama-assn.org) for "physician led teams" or "team based healthcare" in September 2014. Results yielded information from two sources on the site: a web page with links to additional documents on the topic, and archived press releases from the AMA Wire section of the website. The AMA Wire texts could be obtained publicly; most linked texts from the Physician-Led Teams page required a free registration with an email address to obtain access. Three documents on the latter page were linked, yet stated they could only be accessed through logging in as an AMA Member. The titles of these documents were searched using Google; this yielded a link to a Physician Led Teams page on the site of the American Association of Clinical Urologists (aacuweb.org), which had PDF links to the texts in question. Texts were collected until about 25 pages of material were found, totally fifteen separate documents (for a full list, see Appendix A).

While all of these texts were accessible in September, it should be noted as of writing in April 2015 that many of these texts are no longer publicly available. Many texts that were formally available with an AMA public login now require login as a registered AMA member to access. In addition, press releases before August 21, 2013 have been cached and are no longer accessible from the AMA Wire.

## **ANALYSIS**

After the texts were chosen and read, an analysis worksheet adapted from Hoffman and Ford (2010) was used to deconstruct the texts (see Appendix C). The worksheet captures information on several aspects of the text, including goals, ethos, pathos, logos, and strategies.

The first heading, Goals, looks at themes present in the document, as well as the text's requested purpose or action. Next, Ethos, or the appeal to credibility and to community, is analyzed to see if the text displays the organization's competence to speak towards the theme presented and/or whether the text shows that the organization displays their credibility through community involvement.

The next worksheet heading involves Pathos, or the appeal to emotions. This may be achieved through a combination of addressing needs the organization has identified, stating or implying values that may be common between the organization and the reader, and identification with those individuals or groups that may be for or against the rhetoric presented. Logos, or the appeal to logic, is seen in the text through claims, quantitative or qualitative evidence supporting their requested actions, and logical arguments presented. Logical arguments may be either inductive or deductive in nature. Inductive reasoning uses a specific instance to reach a more general logical conclusion, while deductive reasoning uses a general idea to arrive at a conclusion in a specific instance.

Finally, strategies implemented in the text are documented, including the organization of information and appeals in the text. For web-based materials, this also includes their organization and navigability within the organization's website. In addition, language and visual choices, as well as organizational branding, are noted. Finally, strategies for delivering appeals, such as in what form of communication the rhetoric is presented, is noted for reference.

## **CONTEXTUAL AND HISTORICAL RESEARCH**

A number of historical research threads were perused, including: The history of the AMA in its development as a trade association, the growth of the nurse practitioner profession, and the relationship between the medical and nurse practitioner professions in the United States. In addition, contextual research pertained to: the ACA and its resulting potential client base, the numbers of healthcare providers available to provide needed and desired primary care, and examples of health care organizations that currently subscribe to the physician-led team model. Other contextual research was conducted surveying examples of states that have legislated team-based healthcare models in accordance with AMA recommendations, and other organizational views of team-based care, including The Institute of Medicine, to which the AMA may be responding.

## RESULTS

### **TEXT ANALYSIS**

Fifteen online documents published by the AMA were analyzed, ranging in published date from October 2010 through 2014 (Listed in Appendix A). The earliest document outlined the AMA's response to the recently published *Future of Nursing* report from the IOM (Patchin, 2010); the newest announced that the organization had voted on an official definition of physician-led team-based healthcare (AMA, 2014 June 9). Other texts covered diverse topics pertaining to healthcare leadership and teamwork, including the following: a model bill for physician led teams in healthcare to be implemented by state legislators (AMA, 2011); an outline of the AMA's principles and policy stance on this issue in general (AMA, 2012 November 13; AMA, 2012); on patient centered medical homes (AMA, 2013 April 17), recommended payment models for healthcare teams (AMA, 2013 November 13),

and letters to state lawmakers (Madara, 2014; Hoven & MacLeod, 2014). Most texts were less than one printed page in length; the longest text was a 12-page *Best Messages* document dividing 17 key messages into short points for different public target audiences (AMA, 2012),

Repetitive language was used across different texts, such as letters written to state legislatures or the Veterans Health Administration (VHA) using text verbatim from an *Issue Brief* (AMA, et. al, 2013 October 28; Hoven & MacLeod, 2014; Madara, 2014). This would be expected, as repetitive messages from an organization are key in order to ensure they are presenting consistent information to their stakeholders.

The focus of the documents was almost exclusively on the scope of practice of nurse practitioners, as opposed to other APRNs such as nurse anesthetists, clinical nurse specialists, or nurse midwives; APRNs as a whole are mentioned when addressing the VHA. One document consistently used the word “nurse” while referencing roles performed by APRNs (AMA, 2012).

Goals of the texts were straightforward: The AMA advocates for implementation of its concept called “physician-led team-based care”. This is defined as:

*The consistent use by a physician of the leadership knowledge, skills, and expertise necessary to identify, engage, and elicit from each team member the unique set of training, expertise, and qualifications needed to help patients achieve their goals, and to supervise the application of these skills (AMA, 2014 June 9)*

Themes stated that physician-led teams are working in selected organizations, including: Blue Cross Blue Shield of Michigan (AMA, 2013 September 18), Geisinger Health

Systems, the Mayo Clinic, Kaiser Permanente, and Intermountain Healthcare (AMA, 2013 October 28). In addition, they emphasize their view that independent APRN practice, particularly by nurse practitioners, is not compatible with healthcare teams. Requested actions involve advocating for physician-led team-based healthcare as defined by the AMA. All are written in an expert role, for an implied audience of AMA members interested in advocacy, as well as media and other interested members of the public.

Ethos of the AMA's texts focused on the AMA's competence to advocate for physician leaders of the healthcare team. The AMA texts state that physicians are the most competent leaders of the healthcare team; their education, training, and stature means they are best suited to judge other healthcare team member's competency and skill to perform collaborative tasks (AMA, 2013). Clinical competence of providers was heavily emphasized against length of education in multiple documents. The AMA states its competence to provide for advocacy in this area by the legal and financial resources available to support physician advocacy at the state and organizational level, and they are prepared to wield that power for the benefit of physicians and, ultimately, for patient safety. They refer to internally financed studies and opinion polls stating that the public shares their views (AMA, 2012), but study details are not publicly available.

Pathos, or appeals to emotions, was emphasized in the texts through appeals to public knowledge of what healthcare professionals do, that physicians have education and training that uniquely qualifies them to make healthcare decisions, and references to their high stature in society. Concepts of teamwork and the necessity of strong leadership in other areas of society, such as business and athletics, were cited, followed by statements

that physicians are in the best position to apply this role in healthcare (AMA, 2013). Differences in educational methods and possible public confusion are exploited in cited data, such as comparing hours of training between physicians and nurse practitioners by comparing hours for both medical school and residency training with the clinical hours a NP would experience only in a master's level program (AMA, 2012), excluding BSN clinical hours, work experience before graduate school, or additional hours obtained in post-master's or DNP courses. The texts appeal to patient safety through advocacy in the area of scope of practice laws, which have traditionally been in place to protect the public (Marquis & Huston, 2015). Well-known organizations, such as large healthcare organizations and other medical specialty groups, are praised for upholding similar values to the AMA, and for collaborating with the AMA to get this message across (AMA, 2013 October 28).

Analyzing logos, or the use of claims, evidence, and logic, yielded multiple examples of arguments made by the AMA to support their view. Two main logical claims were present throughout several documents. The first again referenced educational differences between nurse practitioners and physicians. It argues that the public generally views leaders as having a great deal of education and experience; meaning, as physicians are generally in school for a longer period of time, they are more qualified to be a leader (AMA, 2014). In addition, a reoccurring argument attempts to present nurse practitioner independence and healthcare teamwork as incompatible (Madara, 2014). By showing a contradiction between the colloquial definitions of the two terms, the organization ultimately tries to claim that independent practice by nurse practitioners cannot logically fall under the concept of teamwork, and is the antithesis of a healthcare system moving towards team-based models.

Other logical arguments cited by the AMA in its “Best Messages” text (2012) include that patients like physicians leading the healthcare team, therefore physicians should be the team leader. In addition, despite claims that savings from hiring a nurse practitioners may lead to decreased outcomes for patient safety, it is stated elsewhere that more nurses practicing independently leads to more liability insurance purchased, thereby increasing healthcare costs (AMA, 2012).

In addition, the AMA also argues that leadership and management are used interchangeably and cited as roles that are often placed upon the same person in an organization (AMA, 2012, November 13). Other claims include: nurses are “helpful” to the team and should “assist the physician” (AMA, 2012), and nurse practitioners provide care that is less safe than physicians due to having fewer years of training (AMA, 2013, April 17). A text also discussed recommendations for payment of the healthcare team, calling for the physician leader to receive the payment and “establish payment mechanisms that foster physician-led team-based care” (AMA, 2013 November 18).

Statistics from studies conducted by the AMA include stating that 75% of patients prefer their health team to be led by a physician as opposed to a nurse (AMA, 2012). They also cite savings of \$310 million over a five-year period within Blue Cross Blue Shield of Michigan when they started using patient centered medical homes, justifying a model of physician-led teamwork (AMA, 2013, September 18).

The texts ultimately point to a standardization of a state-level advocacy campaign that aims to legally define the definition and execution of team based healthcare according to physicians represented by the AMA. Repetition and standardization of terms helps to

create unifying symbols of physician-defined collaboration, tying the theme of increased quality in healthcare and patient safety together.

## **HISTORICAL BACKGROUND**

The AMA's mission statement is "To promote the art and science of medicine and the betterment of public health" (AMA, 2015). It has approximately 225,000 physician and medical student members (Stack, 2013), representing approximately 15% of American physicians, down from a high of 75% of the profession in the 1950s (Collier, 2011).

Founded in 1846 to advocate for increased quality of medical education and ethics, it grew throughout the early 20<sup>th</sup> century as a dominant representative of allopathic medicine (Ford, 1999). The organization has a history of advocacy for physicians and the health care system as a whole. It historically has taken conservative measures in healthcare reform to benefit physicians under the guise of patient safety and upholding the physician-patient relationship. Despite its history opposing governmental health care, the association did interestingly endorse passage of the Affordable Care Act (Collier, 2011). Other recent advocacy issues the AMA has been involved with include reforming Medicare payments to physicians through elimination of the SGR formula, and truth in advertising campaigns as more health professionals require or offer doctoral level degrees as entry into practice (AMA, 2015).

The AMA has a pattern of rhetorical strategies seen in past advocacy efforts that seem to carry into their current views of team leadership. They ran successful campaigns opposing national health insurance in the late 1940s-1950s based on an organizational resolution framing national health insurance as infringing on a patient's right to choose the

physician they wished, when the organization actually opposed governmental influence on physicians and competition from voluntary physician-run insurance plans (Ford, 1999). In 1965, as Medicare was being debated and interest in offering coverage for senior citizens was high, the AMA offered an alternative program called Eldercare, trying to influence governmental regulation by providing a voluntary insurance coverage option for seniors. Medicare's implementation, growing economic inflation, increased interest in socioeconomic inequities, and structural reform of Congressional committees' spreading influence over more subcommittees and chairs meant that the AMA began to lose influence as a dominant player in national healthcare policy at this time. Sympathetic Congressional committee members lost their influence in a new legislative structure, and public favor for physicians decreased due to their high income. The AMA continued to provide influence and counterstrategies in healthcare policy debates, ensuring they had a plan to counter any increase in governmental healthcare or increased oversight of healthcare costs.

Medical practice acts, when first enacted in the late 19<sup>th</sup> century, tended to include broad classifications of what kind of healthcare physicians could provide, giving the profession power to define healthcare policy and delivery. Since then, adjustments to healthcare professional practice acts have tended to "carve out" healthcare tasks that APRNs, optometrists, pharmacists, and physical therapists, among others, are qualified to do. This leads to conflict between these professions and what state medical societies consider to be the sole purview of physicians' work (Fairman, 2008).

Healthcare providers that are not physicians have been seen throughout history in areas with great need, from feldshers in Russia (Andrus & Fenley, 1975), to barefoot

doctors in China (Cawley et. al, 2012), to American military corpsmen serving their fellow soldiers (Rousselot, Beard, & Berrey, 1971). Concerns about healthcare professional shortages abounded in United States in the mid-20<sup>th</sup> century, with the per capita number of physicians dropping 149 per 100,000 Americans in 1909 to 133 per 100,000 in 1959 (American Medical Association, 1960). While the per capita number of nurses increased from 89 to 268, there was a consensus that there still were not enough nurses to meet healthcare demands. The growing post-war economy and expansion of health insurance benefits, increased physician specialization, and medical advances increased demand for healthcare, making it hard for generalist physicians to keep up (Fairman, 1999).

There was a tacit acknowledgement that nurses and other healthcare workers in areas with physician shortages were informally trained by physicians to perform tasks legally under the purview of medicine, potentially exposing them to prosecution by state medical boards (Andrus & Fenley, 1975). Interest in creating formal education programs and licensure for these “assistants” or “associates” of physicians was high (Cawley et. al, 2012). The first formal training programs for both nurse practitioners and physician assistants were started in 1965, at the University of Colorado and Duke University, respectively (Nuckolls, 1974); programs for both were quickly created after this at various universities throughout the 1960s and 1970s.

These new professions were immediately seen as beneficial for providing healthcare to underserved populations, yet control over their scope of practice and their relationships with other healthcare team members met with controversy from both organized medicine and organized nursing. Physician groups sought “assistants” well versed in the medical

model to receive delegated tasks. The AMA endorsed the profession of physician assistant in 1969, largely because of their training under the medical model and that physicians had more direct control over their practice (Cawley et. al, 2012).

Nursing as a profession had been evolving from a group of workers carrying out delegated tasks into professionals making decisions about patient care in their own right. The International Council of Nurses even took the step of removing any language defining the profession as being under physician supervision in the 1960s (Lynaugh, 2008). Nursing groups, particularly the American Nurses Association (ANA) and the National League of Nursing (NLN) at the time felt threatened that the medical profession was trying to co-opt their own; some leaders went so far as to disown nurse practitioners as members of the nursing profession (Rogers, 1972), and rebuffed attempts at consensus at the organizational level from even sympathetic physicians (Christman, 1998). These were not fears without context, as the AMA had a Committee on Nursing at the time offering advice on how the nursing profession could help physicians (AMA, 1970), and reportedly stated interest in converting 100,000 registered nurses into physicians' assistants (Nuckolls, 1974). While some organized nursing associations began to recognize that advanced practice nurses could bring both medical training and a nursing background to help care for patients in an expanded nursing function, the sentiment was not widespread in the infancy of the nurse practitioner profession (Andrus & Fenley, 1975).

## **CONTEXTUAL BACKGROUND**

In addition to the publication of the *Future of Nursing* report (IOM, 2011) and the passage of the Affordable Care act in 2010, other events in health policy occurred that were mentioned within the texts that the AMA chose to respond to.

As discussed earlier, Patient Centered Medical Homes (PCMHs) were designed by medical organizations to explicitly be physician-led (Patient Centered Primary Care Collaborative, 2007). As their prominence increased, accrediting bodies became interested in certifying PCMHs as well. In 2011, the Joint Commission decided to accredit PCMHs that are APRN-led, without collaborative or supervisory agreements, as state law allows (Joint Commission, 2014). They do require a physician to be a part of the patient care team, but their involvement may be “determined by the needs of the patient.”

The AMA cited several large health care organizations as examples of health systems that effectively subscribe to the physician-led team model. Finding publicly available information from these organizations to confirm their views produced mixed results. Geisinger, a health system in Pennsylvania, explicitly states on its website that “a physician-led approach to healthcare” is a value of the organization (Geisinger Health System, 2015). It is also lauded for its dedication to use nurse practitioners to the full extent of their education and training, even starting one of the country’s first NP-staffed urgent care clinics (IOM, 2011). Intermountain Healthcare, serving Utah and southeastern Idaho, does not explicitly state “physician-led teams” in its vision statement, but does emphasize engagement of physicians into teams and respect for physicians’ clinical skills (Intermountain Healthcare, 2015).

Blue Cross Blue Shield of Michigan publicly displays its data on the quality and value of its Patient Centered Medical Homes run by primary care physicians (BCBS of Michigan, 2014) that are subsequently cited by the AMA (AMA, 2013, September 18). A reason for the emphasis on physician leadership in the PCMH may be that Michigan's nursing scope of practice laws are considered restrictive by AANP (2015), and may not allow for NP led PCMHs in this state. Kaiser Permanente's site states that "physicians are responsible for medical decisions" (Kaiser Permanente, 2015), although it has also been reported that they have piloted NP-led teams in prenatal clinics in Colorado with success (National Governors Association, 2012). Mayo Clinic's website does not explicitly state its views on physician leadership in its mission statement, but a search of the site yielded the term on pages such as for medical student clerkships (Mayo Clinic, 2015).

In response to concerns from organized medicine on calls for APRN expansion listed in the *Future of Nursing* report, the RWJF convened a summit of several leaders of nursing and medical organizations in 2011. The goal was to produce a consensus report between the professions (RWJF, 2013). While a confidential draft report was created, it was leaked at an AMA meeting that fall; the AMA's reported displeasure at both the content of the draft and their lack of invitation to the meetings led to the summit's abolishment. Only summaries and highlights from the meetings have since been published.

The National Governors Association Report (2012) encouraged its members to consider APRN practice expansion to bring more health coverage to states. As part of their report, they conducted a literature review comparing NP and physician quality in primary care—they didn't find differences between the two types of practitioners, but stated that more

research is needed comparing health care quality in states with differing NP scope-of-practice laws.

## **SUMMARY OF RESULTS**

When reading one press release from the AMA, the reader can get a sense of their opposition to expansion of practice for APRNs. When analyzing several texts, the historical background of the AMA and these healthcare professions, and looking at the context of American health care policy in 2010, it appears that a much larger campaign is occurring. It seems that the American Medical Association is conducting a campaign to legally define their views of the physician as the leader and supervisor of the healthcare team, particularly the primary health care team. This would therefore ensure physicians are uniquely qualified to make the final decisions regarding collaboration, scope-of-practice, and financial compensation of the team members, including other professions, within their organization.

During this time period, not all states passed legislation in line with the IOM and RWJF recommendations. Some AMA sample texts cited Virginia and Texas as both passing legislation aligning with the AMA's advocacy goals (AMA, 2013, September 18). Virginia's bill incorporated language directly from the AMA model bill (*HB346: Nurse Practitioners*, 2012), thereby legally defining teamwork and collaboration within the AMA's interests. In 2013, Texas passed new legislation concerning the number of nurse practitioners one physician could enter into a practice agreement with (*SB406: An Act Relating to the Practice*, 2013). Interestingly, the legislation did not include language from the AMA model bill. Of note, however, is that both the old and new Texas practice acts emphasize the use of

“delegation” from physician to nurse practitioner, rather than “collaboration” between the two professions. Many of the analyzed texts used “collaboration” to describe work among healthcare team members, but the definition adopted by the AMA (2014, June 9) ultimately uses the word “supervision” to describe the interprofessional relationship. The American Association of Nurse Practitioners (2015) categorizes both Texas and Virginia as having “restrictive practice” for nurse practitioners.

## DISCUSSION

The AMA has produced a strategic counterargument for the expansion of nursing scope-of-practice laws. The IOM (2011) published a comprehensive report that led to strategic campaigns across the country aiming to change scope of practice laws for APRNs. As this research has shown, the AMA has organized a strategic campaign of their own that not only opposes bills for nurse practitioner independence, but also provides counter-legislation ensuring that views supported by the AMA are placed into state law. This legislative victory for the AMA has, at this point, occurred in Virginia.

However, the AMA’s rhetorical campaign does not appear to have gained much traction in passing model legislation at present. As of this writing, no other states besides Virginia have passed the AMA model legislation. In Nebraska, despite AMA advocacy against expansion of nursing scope of practice (Madara, 2014), legislation was passed in March 2015 allowing NPs in the state independent practice after serving 2,000 hours in a collaborative transition-to-practice agreement with a provider in the same specialty (*LB107: Eliminate Integrated Practice*, 2015). The American Association of Nurse Practitioners has its own advocacy center on its website, highlighting bills in 16 states for

the 2015 Legislative session concerning expansion of APRN practice, including in Texas (AANP, 2015).

Many of these bills attempt to lessen or abolish collaborative practice agreements between nurse practitioners and a physician (AANP, 2015). Collaboration is a politically charged word among healthcare providers; it is often used in a regulatory sense to describe roles between nurse practitioners and physicians in a supervisory manner (Anonymous, 2004). Among other healthcare professionals, and nursing in particular, collaboration is viewed in a less hierarchical manner. The sharing of information and working together to bring the best expertise for patient care is a fundamental part of nursing practice, and a trait that helps nurses and APRNs successfully care for patients when they are practicing in expanded roles, such as caring for chronically ill patients (Fairman, 2008). This makes the AMA's logical argument of nurse practitioner independence opposing collaboration nonsensical. As cited previously, organizations interested in healthcare policy such as the AARP, the National Governors Association, the Joint Commission, and the Robert Wood Johnson Foundation, among others, have all publicly stated support for at least considering expansion of APRN roles within the context of collaboration in a less hierarchical environment, in contrast to the views of organized medicine.

One of the guiding principles of the AMA is that "physician leadership is critical to the successful evolution of health care in a patient focused delivery system" (AMA, 2015); as with any trade organization, it would be assumed that the AMA would advocate for its constituents when their particular industry and livelihood is undergoing change. One must question, though, where the line is between a group advocating for its cause, in this case

patient care and safety, and when the group is advocating for its own interests, particularly if the group's interests are concealed as benefitting patients.

Leadership interestingly does not have a single definition, although leaders are often identified as, "those individuals who are out front, taking risks, attempting to achieve shared goals, and inspiring others to action." (Marquis & Huston, 2015, p. 34). In order for leadership to be effective, it also requires power from some kind of source for support; one particular form is expert power, that which is wielded by someone with critical knowledge that others in the group may not have (Marquis & Huston, 2015). Due to education in the basic sciences, scope of practice laws, and tradition, physicians have held expert power within the healthcare hierarchy. Throughout the rest of the twentieth century, and continuing to the present day, attempts to reform nurse practice acts to expand APRN scope of practice have been blocked by state medical societies steeped in a worldview viewing nursing as having inferior education, particularly in the basic sciences (Fairman, 1999). Due to the complexity of 21<sup>st</sup> century healthcare, there has been increasing acknowledgement among stakeholders within the healthcare system that, while some medical organizations wish to keep physicians' formal leadership as the status quo, everyday practice no longer adequately works with a "captain of the ship" model at all times (RWJF, 2013).

This project shows how important semantics is, and that new models of healthcare need standards and definitions to frame how that care is provided, since they may require changes in legal policy, organizational structure, or protocols. Laws may not be repealed easily, and the type of legislation advocated by the AMA may have consequences for

innovation of new and emerging models of care in order to satisfy demand from various patient populations.

As nursing organizations attempt to expand nursing scope of practice at the state level, oppositional views of these bills should be understood to address concerns, provide counterarguments and effectively engage stakeholders. One area this research has highlighted is that the diversity of educational degrees and requirements available for registered nurses and APRNs can lead to confusion, and subsequent exploitation of this confusion, by opposing parties in the debate over scope of practice changes. Media campaigns explaining nursing education, and continued work in standardizing nursing education and certification, may help to clarify this point for all registered nurses, including nurse practitioners. This counterargument is one with precedence; the IOM (2011) also addressed the need to standardize nursing education, and recommended requiring the baccalaureate degree as the minimum entry to practice and the DNP as entry to advanced practice. These recommendations, while having controversy of their own within the profession, would also help to more clearly articulate how nurses are trained for careers within an ever-evolving profession.

## **LIMITATIONS**

There are several limitations with this project due to the narrow scope of viewing a complex topic within current healthcare policy. First, even during the initial analysis of texts, there were a limited number of materials available on the AMA website without an AMA membership. The nature of this research method arrives at rhetorical conclusions in the role of an informed observer or consumer; another approach, such as a journalistic

investigation using first-hand accounts and internal documents, may give more insight into the AMA's values and intentions. In addition, this project has a narrow focus of a complex topic involving different professional organizations, state legislatures, and regulatory bodies; it may be so narrow as to be overly critical of the AMA's roles and responsibilities within a likely broader campaign of organized medicine, an example of "use of one case" (Ford, 1999).

Future research in this topic may look at specialty medical organizations, such as those involved in the Patient Centered Primary Care Collaborative (2007), and state medical societies, particularly in the states discussed with notable passage of legislation. In addition, other research may look at advocacy for scope-of-practice for other APRNs, or at responses to this form of advocacy from professional nursing organizations.

## CONCLUSION

The healthcare system is adapting to changing needs in order to provide care of higher quality, access, and value for underserved populations, including the newly insured and the elderly. Defining provider roles and leadership within these models is of interest to both healthcare providers and their respective organizations. The American Medical Association's views have been shown to favor placing primary care physicians in formal leadership and management roles through strategic advocacy of legislation at the state level. As expanded scope for practice for nurse practitioners continues to be endorsed by many stakeholders in healthcare policy, it remains to be seen how successful the AMA's rhetorical strategy will be.

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## APPENDIX B: CRITICAL RESEARCH PROCESS

MEMO

DATE: October 8, 2014

TO: Geri Neuberger, PhD, RN, & KU School of Nursing Research Committee

FROM: Debbie Ford, PhD

SUBJECT: Explanation of research methodology for Erin Ekholm's Honors Project  
Erin Ekholm is in the process of conducting her honors research project with me. She has submitted her abstract to be considered for presentation at the Mind & Heart Together research program and MNRS. She is conducting a rhetorical criticism of the strategies used by the American Medical Association to influence the outcome of the debate over who should be designated in legislation as the leader of the health care team. Although this methodology may be considered a very specific type of qualitative research, it is not commonly used in nursing. It is most commonly used in the disciplines of communication studies and English. Thus, I am writing this brief explanation of the critical research process in support of her application. If you have any questions about this process, I would be happy to talk with you.

The critical research process is outlined in the diagram included with this document. *Critical* in this approach refers to *critique*, rather than to the more commonly used *sense of urgency*. It is a systematic, rigorous method for deconstructing texts in order to draw conclusions about the choices a rhetor (speaker) made in achieving a goal. In this case, the rhetor is the AMA and its goal was to influence the legislative definition of health care team leader. We have not concluded yet what the AMA's specific goal was, as the analysis of the texts is still in process.

As noted in the diagram, the first step is to define a critical problem. Critical problems most often arise from an inherently interesting text (e.g., King's *I Have a Dream* speech), a problematic text (e.g., the various messages sent by BP following the explosion), a theory question (i.e., testing rhetorical theory), or a method question (i.e., testing a rhetorical-critical method, such as cluster analysis). Erin selected AMA and this debate after extensive discussions with me. It will provide important background for another study on health care team communication on which I am working. After submitting this article to the *BSN Honors Journal* as a single case study, our long-term plan is to use the results of Erin's analysis as important background work for the health care team study.

The second step is to select the texts for analysis. The four criteria upon which you choose the texts include: immediacy (the text is in front of you), distinctiveness (there is something striking about the text), representativeness (the text[s] represents a wider set of messages), and relevance. In Erin's case, we have selected the AMA's examples of texts from their website focused on this issue (health care team leadership). These are all statements to which the general public has access.

Third, the critic conducts a broad, open-ended analysis of each text (press release) individually, using multiple inconsistent categories. They are inconsistent inasmuch as

many phrases function in more than one way in a text; each of these uses would be noted in the analysis. In order to maintain consistency of analysis across texts, Erin will use the enclosed Worksheet for Identifying Rhetorical Strategies in Organizational Texts (Hoffman & Ford, 2010). She will complete one form for every text analyzed. Together we also will conduct a thematic analysis across all forms in order to identify themes and commonalities in strategies.

Fourth, Erin will conduct historical, contextual, and relevant theoretical research. In this case, she will need to conduct historical research about the development of health care professions as disciplines in the US. She will also review historical research about the organization itself in its development as a trade association. She will need to gather as much background as possible for us to understand the AMA as a rhetor who is making choices in regard to this particular issue. I will direct her to relevant theoretical research, as that will emerge based upon the sets of strategies she finds in the rhetoric. For example, if she finds a heavy reliance upon narratives (stories), she would need to develop an understanding of narrative theory. However, until the analysis of the texts is completed, it is not appropriate to conduct theoretical research in advance, as it may unnecessarily bias the critic in the analysis of the messages themselves.

Last, Erin will develop an explanation and evaluation of the AMA's strategies, developing an overarching form to answer the critical problem. This is where she explains how the rhetoric functioned, and whether the choices made were as effective as possible (to the extent a public audience can judge). Recommendations for future research, as well as recommendations to other organizations, including nursing organizations, undertaking such influence will be generated.

In summary, Erin will be following a systematic process for analyzing and drawing conclusions about the AMA's strategies. Below are several references, in case they might be helpful. If you have any questions, please do not hesitate to call or email me. Thank you for your consideration.

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Critical Research Process  
Robert C. Rowland

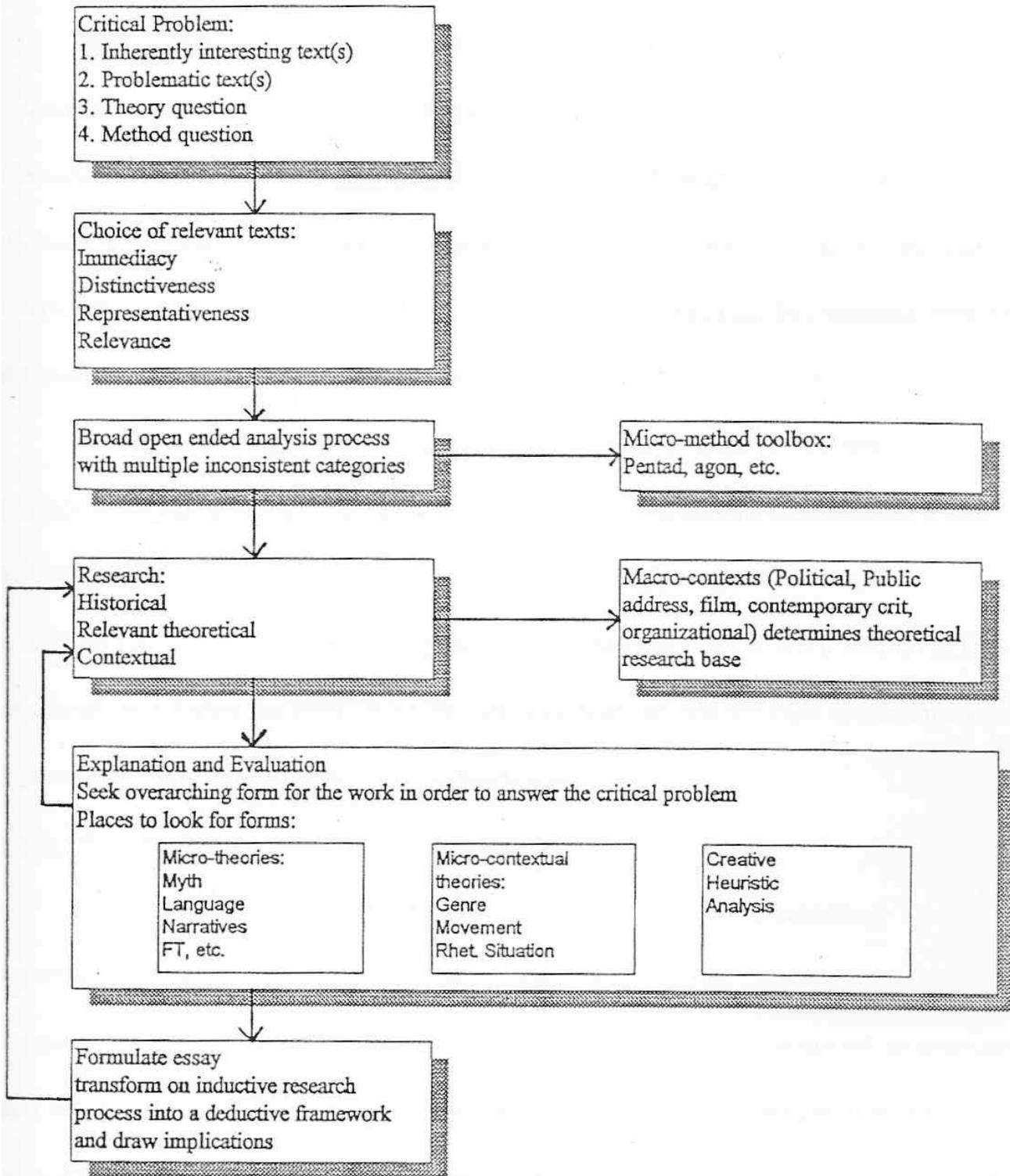


Figure 2

## APPENDIX C: ANALYSIS WORKSHEET

### **Worksheet for Identifying Rhetorical Strategies in Organizational Texts**

(From Hoffman & Ford, 2010, p. 238-239; adapted by Ford, 2013)

*Text:*

*Source Information:*

*Date published or retrieved (website):*

*Date you analyzed the text:*

*What do the goals of the text appear to be?*

*Themes:*

*Requested actions:*

*Linguistic tone:*

*Role:*

*Who are the implied audiences (your educated guesses):*

**Instructions:** In order to describe the rhetorical strategies in the artifact that you have selected, please identify and give examples of statements in the rhetoric that fall into the following areas.

#### **Ethos: Appeals to Organizational Credibility**

*Competence:*

*Community:*

#### **Pathos: Appeals to Emotion**

*Needs: Identify the need being created or appealed to*

*Values: Identify the value being appealed to*

*Explicit appeals to values:*

*Demonstration of how products or services uphold values:*

*Discussion of philanthropic activities consistent with values:*

*Praise of individuals who embody values:*

Identification (organizational)

*Common ground:*

*Assumed "we":*

*By antithesis:*

*Unifying symbols:*

#### **Logos: Use of Claims & Evidence**

*Claims:*

*Evidence*

*Statistics:*

*Testimony:*

*Examples:*

#### **Reasoning**

*Inductive Reasoning [specific instance -> more general conclusion]*

*By example:*

*By analogy:*

*Causal reasoning:*

*Deductive Reasoning [general, accepted idea -> conclusion about a specific instance]*

### **Strategies for Organizing Appeals**

*Introduction:*

*Main Body:*

*Conclusion:*

*Navigation (Web-based materials):*

### **Stylistic Strategies**

*Language choices:*

*Visual choices:*

*Branding:*

### **Strategies for Delivering Appeals**

*What form is the rhetoric presented in (press release, newsletter, Web site, blog, event, etc.)?*

Remember to consider whether the sample of rhetoric is similar to any of the types of rhetoric that occur with regularity in organizations (identity, issue, risk, crisis, or internal). If so, also consider the specific strategy questions posted at the end of the relevant chapters.

NURSE-REPORTED VS. PATIENT-REPORTED SYMPTOM  
OCCURRENCE, SEVERITY, AND AGREEMENT USING THE THERAPY-  
RELATED SYMPTOMS CHECKLIST (TRSC) IN CANCER PATIENTS

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Ashley Heiman, BA, BSN

Submitted to the School of Nursing in partial fulfillment of the  
requirements for the Nursing Honors Program

Faculty Mentor: Phoebe D. Williams, PhD, RN, FAAN, Professor

University of Kansas School of Nursing

## ABSTRACT

**Purpose:** Developments in cancer treatments have resulted in increased survival of patients, but side effects/symptoms continue to be a concern. The Therapy-Related Symptoms Checklist (TRSC) has been used with adults undergoing cancer treatments. Study purposes were to examine among patients who completed the TRSC: (a) patient-reported symptom occurrence and severity; (b) nurse-reported symptom occurrence and severity; and (c) inter-rater agreement between patient-reported and nurse-reported symptoms. No study on this last question has been reported.

**Theoretical Framework:** Orem's Self-Care Deficit Theory focuses on individuals unable to meet their own self-care requirements. The TRSC is a tool that assists nurses in identifying these deficits, better facilitates supportive interventions to alleviate the symptoms, and promotes the patient's/caregiver's ability to enhance self-care.

**Design:** This is a cross-sectional study using primary data collection and analysis.

**Setting:** The study was conducted on patients at a single outpatient cancer center in a rural community of the Midwestern United States.

**Participants:** A convenience sample (N=22) of adult outpatients undergoing cancer therapy.

**Methods:** All patients and their nurse completed the TRSC, a 25-item checklist, with response choices ranging from "0" (none) to "4" (very severe). Descriptive statistics were used to address Purposes A and B, and a Pearson product-moment correlation analysis for Purpose C.

**Results:** All symptoms on the TRSC were reported in varying degrees. Regarding Purpose A, 40% or more of the patients reported 14 symptoms. Regarding Purpose B, 40% or more of nurse respondents reported 8 symptoms. In addition to higher symptom occurrence, greater symptom severity also was reported by patients compared to nurses. Regarding Purpose C, the percentage agreement between patient-reported and nurse identified symptoms was 77%, and the Pearson product-moment correlation coefficient was  $r = .77$ , indicating moderate agreement.

**Conclusions:** Use of patient self-report of symptoms is a preferred approach. A standardized tool (the TRSC) can guide nurses in providing a more complete, symptom-focused care. This may then enhance treatment compliance and improved outcomes.

## INTRODUCTION

In the United States, the lifetime risk of developing cancer is 1 in 2 for men and 1 in 3 in women. However, the five-year relative survival rate for all cancers diagnosed from 2004 to 2010 was 68%, increased from a rate of 49% from 1975 to 1977 (American Cancer Society, 2015). This increased survival rate reflects improvements in both early detection and treatments; however, side effects/symptoms continue to be a concern. These symptoms may affect patients' functional status, psychological state, compliance with treatment, and quality of life.

The Therapy-Related Symptoms Checklist (TRSC) (Figure 1), a tool with good psychometric properties, has been used with adults undergoing cancer treatments in the United States, Europe, and Asia (Piamjariyakul et al., 2010; Williams, Williams, Ducey, Sears, & Tobin-Rommelhart, 1997; Williams et al., 2001). The TRSC allows a standardized, objective measurement of symptom occurrence and severity that can aid healthcare providers and nurses to individualize their care of these patients (Williams, Williams, Roling-Lafaver, Johnson, & Williams, 2011; Williams et al., 2013).

This study was guided by Orem's Self-Care Deficit Theory (Orem, 2001). This theory focuses on individuals unable to meet their own self-care requirements. Throughout cancer therapy, patients may feel their side effects are unmanageable, leading to lessened quality of life, functionality, and compliance with treatment. However, the TRSC is a tool that can assist nurses in identifying these deficits their patients are experiencing, better facilitate supportive interventions to alleviate the symptoms, and promote the patient's/caregiver's ability to enhance self-care.

Most commonly, assessments from both the patient's provider and nurse are completed and documented in the patient's medical record. However, previous studies support the use of patient self-reporting as a method of measuring each patient's experience with greater accuracy. Many clinicians believe cautious monitoring of patients through self-report may aid in the detection of early warning signs of adverse treatment effects (Williams et al., 1997). The literature is limited regarding inter-rater agreement between patient-reported and nurse-reported symptoms using a checklist; this study will explore this through using the TRSC.

## **REVIEW OF LITERATURE**

A computer-based search was completed utilizing the CINAHL and PubMed databases to locate research related to symptom measurement and patient self-report of symptoms. The research reports were then analyzed in order to investigate both use of the TRSC and the effectiveness of patient self-report of symptoms compared to clinician report.

Nurses play a crucial role throughout the process of cancer therapy, from coping with the diagnosis to managing side effects from treatments. Youngblood, Williams, Eyles, Waring, and Runyon (1994) recognized the need for a systematic tool to aid nurses and other clinicians in reliably assessing symptoms that arise during cancer therapy. Researchers developed the 37-item Oncology Treatment Toxicity Assessment Tool (OTTAT), an early precursor to the current TRSC. Data were also collected using the 14-item Quality of Life Index (QLI) to examine the relationship between self-reported symptoms using the OTTAT and quality of life score on the QLI. A convenience sample of 91 patients aged 19-84 were included in the study. Participants were receiving outpatient care

at either a radiation oncology clinic, a bone marrow transplant clinic, or an adult medical oncology clinic, all located in the southeastern United States. All participants self-reported using the OTTAT and QLI, then returned them to the nurse researcher. Self-reported OTTAT symptoms were then compared to the nurse's progress note (in the medical record) for that patient.

Results showed the mean number of symptoms self-reported by patients on the OTTAT were  $11 \pm 8.0$ , as compared to  $1.5 \pm 1.6$  symptoms documented in the nurses' notes (medical record). This indicated the "usual method of assessment" (i.e. How are you feeling today?) resulted in under-documentation of the patients' symptoms and the OTTAT provided "a more comprehensive identification and self-report of toxicity symptoms than did the open-ended method assessment" (Youngblood et al., 1994, p. 123). A paired t-test was used to compare the mean number of symptoms identified on the OTTAT with those documented on the progress note using the "usual method of assessment"; the t-value was 8.7, a highly significant difference ( $p = .001$ ). Furthermore, a Pearson product-moment coefficient analysis demonstrated a significant inverse correlation between OTTAT and QLI scores ( $r = -.67$ ,  $p = .0001$ ); and this finding is supported by past research as well.

A secondary purpose of that study was to explore the OTTAT symptoms reported with the highest frequency. The nine symptoms most frequently reported are consistent with previous research, and included the following: feeling sluggish, difficulty sleeping, dry mouth, taste changes, loss of appetite, depression, hair loss, skin changes, and nausea. Overall, the study concluded that the "usual method of assessment" of patients resulted in

the documentation of a significantly lower number of symptoms compared with patient self-report using a checklist, the OTTAT (Youngblood et al., 1994).

Williams et al. (1997; 2000) discussed the creation of the Therapy-Related Symptoms Checklist (TRSC). Using the Oncology Treatment Toxicity Assessment Tool (OTTAT), data were collected from 282 adult patients undergoing cancer treatments at a cancer center in the Midwestern USA. Using principal component analysis, the 37-item OTTAT was reduced to 25 items, accounting for 78.9% of the variance within the items. The TRSC and OTTAT were found to be correlated at .97. Cronbach alphas for all multiple-item subscales exceeded .70, indicating internal consistency reliability. Moreover, the TRSC and Karnofsky scores were inversely correlated, indicating construct validity. Using discriminant analysis, results also showed distinct findings between radiation therapy and chemotherapy patients, suggesting discriminant validity of the TRSC. That is, in radiation therapy patients, skin changes, constipation, bleeding, decreased interest in sex, and oropharyngeal problems were predominant. In contrast, among chemotherapy patients, hair loss, fever, bruising, nausea and vomiting, numbness of fingers and toes, and fatigue were predominant. The investigators concluded the TRSC is a clinically relevant self-report checklist for oncology patients (Williams et al., 1997; 2000).

Patient versus clinician symptom reporting was examined using the National Cancer Institute's Common Terminology Criteria for Adverse Events (CTCAE) in the study by Basch et al. (2006). Participants included 400 patients with a cancer diagnosis being treated in lung and genitourinary cancer clinics in the Memorial Sloan-Kettering Cancer Center in New York, New York. Each patient and their clinician (physicians or nurses) were

given a questionnaire with 11 common CTCAE symptoms, and results of the patients self-report were compared to the clinician reporting. In order to assess agreement of symptom reporting between clinician and patient, symptom severities were dichotomized into non-serious (grades 0–2) and serious (grades 3–4) categories. A shift in grade could make a clinically significant change in management of the patient’s care. Results using the McNemar’s exact test showed a significant difference in grading between patients and clinicians for only the symptom of fatigue. Almost all patient-clinician pairs agreed, with a higher proportion agreeing over more observable, objective symptoms rather than non-observable, subjective symptoms. Patients graded greater severity more often. In general, patients and their clinicians agreed on the symptom severity grades for 11 common CTCAE items. Differences in report were usually only one point. The researchers concluded that, in general, adverse events resulting in a change in the management of care were observable, suggesting that “patient self-reporting could improve the current procedure by notifying the clinician about objective symptoms, and alerting clinicians to patients’ perceptions of the severity of more subjective symptoms” (Basch et al., 2006, p. 907).

Fromme, Eilers, Mori, Hsieh, and Beer (2004) recognized that adverse events (AEs) in chemotherapy clinical trials have been assessed by clinicians, but the accuracy has been questioned. These researchers conducted a study which collected patient self-reporting of eight symptoms using the European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire (QLQ) C30. The study sample included 37 males with a diagnosis of prostate cancer that were enrolled onto a phase II trial of weekly calcitrol and docetaxel. Each participant completed the QLQ every four weeks throughout treatment for up to 28 weeks. Additionally, the medical oncologist providing care for the patient reported

symptoms in a designated adverse events log. A symptom was considered to be patient self-reported if there was at least a 10 point increase in a QLQ symptom score on the 0 to 100 scale, and the symptom was sustained for at least four weeks. Alternatively, a physician-reported symptom was defined as any symptom ever documented in the adverse events log. In total, 49 symptoms were detected by both the physician and the QLQ, 48 symptoms by the physician alone, and 55 symptoms by the QLQ alone. Using Cohen's kappa coefficient analysis, it was found that  $\kappa=0.15$ , indicating slight agreement. Overall, "The physician did not report approximately one half of the symptoms identified by the QLQ as AEs, and the QLQ did not detect approximately one half of the symptom AEs reported by the physician" (Fromme et al., 2004, p. 3488). The researchers concluded that both the patient and the physician identified important symptoms that the other did not, which suggests patient self-reporting should complement physician assessment of symptoms experienced during chemotherapy clinical trials and cancer therapy in general (Fromme et al., 2004).

In summary, the literature includes studies that describe the creation of the current TRSC as well as studies that have been conducted to investigate the value of having patients self-report their symptoms experienced during cancer therapy. The purposes of this study were to examine using the TRSC: the (a) patient-reported symptom occurrence and severity; (b) nurse-reported symptom occurrence and severity; and (c) inter-rater agreement between patient-reported and nurse-reported symptoms. These purposes will further analyze the symptoms reported by both the patient and the nurse, and will determine the inter-rater agreement among patient-reported and nurse-reported symptoms on the TRSC.

## METHODS

### DESIGN

This cross-sectional study used primary data from patients at a single site in a rural community of the Midwestern United States. Using convenience sampling, Subjects were included if they: (a) had a diagnosis of cancer; (b) received one or more rounds of treatment; (c) were over 18 years of age; and (d) were able to provide informed consent. Patients who received chemotherapy and/or radiation therapy were eligible.

### INSTRUMENTS

The Therapy-Related Symptoms Checklist (TRSC), a 25-item tool, was used to gather information on symptom occurrence and severity experience during cancer treatment (Williams et al., 1997; 2000). Symptom severity on the TRSC was measured on a 5-point scale, "0" (none), "1" (mild), "2" (moderate), "3" (severe), and "4" (very severe). There are also four spaces at the bottom of the checklist for patients to report additional symptoms (See Figure 1). Higher total scores on the checklist indicate greater occurrence and severity of symptoms. Based on the study by Williams et al. (1997; 2000) and shown in Table 1, it is noted that 14 TRSC subscales/components/clusters resulted from a principal component analysis; the remaining are single-item subscales. For example, the Fatigue subscale has a cluster of four symptoms, namely, feeling sluggish, depression, depression, difficulty concentrating, and difficulty sleeping. The Eating subscale includes 4 items, namely, taste change, loss of appetite, weight loss, and difficulty swallowing, and so forth. The development and psychometric properties of the TRSC have been described in the literature review section above.

Study participants also completed a demographics form. The nurse data collector completed a health form that included diagnosis and stage of disease, treatment modalities and doses, and comorbidities based on the medical record. Also, the Health Form included a Karnofsky Performance/Functional Status Scale that was completed, scored, and signed by the nurse.

For purposes of a future, separate study, patients also completed the Health-Related Quality of Life- Linear Analogue Self-Assessment (HRQOL-LASA) form, as well as the Symptom Alleviation: Self-Care Methods (SA:SCM) form based on items of the TRSC. It is noted that two data collectors gathered the data, both of whom were trained by the faculty mentor. One was a registered nurse and capstone graduate student at the University of Kansas School of Nursing who initiated, applied for and obtained approval of the use of the study site; that nurse gathered data on 20 patients. The second data collector was an honors student in the BSN program at the University of Kansas who gathered data on two patients.

IRB approval was obtained from the University of Kansas Medical Center (KUMC). Both students completed the Human Subjects tutorial and the Conflict of Interest clearance.

## **DATA COLLECTION PROCEDURES**

An informed consent form approved by the KUMC-HSC was signed by the patient prior to data collection. The nurse explained the study to the patient and answered their questions. The patient then completed the TRSC and the Demographics Form. The nurse completed the Health Form: that form included the Karnofsky Performance/Functional Status Scale, as described earlier. The patient also completed the Health-Related Quality of

Life -Linear Analogue Self-Assessment (HRQOL-LASA) form, and the Symptom Alleviation: Self-Care Methods (SA:SCM) form – these data were to be used in future, separate analyses for the study. The patient and the nurse completed the TRSC at separate locations.

**Data Analysis.** To address Purpose A, the TRSC self-reported by the patient was analyzed using descriptive statistics. To address Purpose B, the TRSC completed by the nurse was analyzed using descriptive statistics. To address Purpose C, the percentage agreement between the total scores on the patient-reported TRSC and the nurse-completed TRSC were analyzed; and, also a Pearson product-moment correlation analysis (Rebar, Gersch, Macnee, & McCabe, 2011).

## RESULTS

### **SAMPLE CHARACTERISTICS**

The sample of 22 adults was obtained from a single outpatient cancer clinic in a rural community of the Midwestern United States. The convenience sample included adults aged 31 to 84 years; 54.5% were female, and 45.5% were male. The mean age of participants was 56.73 years, and 86.4% were married. Cancer diagnoses included the following: 41% breast cancer, 18% colon cancer, 9% renal cell cancer, 9% esophageal cancer, and 23% other. The most prevalent cancer diagnoses in males were renal cell and colon, and in females breast cancer was the most common. In total, 54.5% of participants identified themselves as Caucasian, while 45.5% identified as Hispanic. Table 1 shows the sample characteristics.

### **ADDRESSING THE RESEARCH PURPOSES**

**Patient-Reported Symptoms.** Regarding Purpose A, the occurrence of symptoms as self-reported by patients on the TRSC (Table 2) indicated that 40% or more of patients reported 14 symptoms, overall. Symptoms reported with the highest occurrence included feeling sluggish (77.3%), hair loss (72.7%), difficulty sleeping (68.2%), and nausea (63.6%). Additional measures included depression (59.1%), taste change (54.6%), loss of appetite (54.6%), numbness in fingers and/or toes (54.6%), decreased interest in sexual activity (50.0%), difficulty concentrating (45.5%), shortness of breath (45.5%), bruising (40.9%), cough (40.9%), skin changes (40.9%), sore mouth (36.4%), pain (36.4%), constipation (36.4%), weight loss (27.3%), sore throat (27.3%), and soreness in vein (where chemotherapy was given) (27.3%). Symptoms reported with the lowest occurrence included difficulty swallowing (22.7%), bleeding (22.7%), fever (18.2%), vomiting (18.2%), and jaw pain (9.1%).

Regarding the severity of symptoms as self-reported by patients on the TRSC: Table 2 shows that symptoms with the highest mean severity included hair loss (3.19), decreased interest in sexual activity (3.09), vomiting (2.75), constipation (2.63), and taste change (2.58). Additional mean symptom severities included nausea (2.43), difficulty sleeping (2.4), loss of appetite (2.25), weight loss (2.17), feeling sluggish (2.12), bruising (2.11), difficulty concentrating (2.1), difficulty swallowing (2), sore throat (2), shortness of breath (2), and skin changes (2). Symptoms with the lowest mean severity included depression (1.92), numbness in fingers and or/ toes (1.88), soreness in vein where chemotherapy was given (1.83), sore mouth (1.75), pain (1.75), bleeding (1.8), cough (1.67), jaw pain (1.5), and fever (1.5).

A few symptoms were added by patients, including diarrhea by one patient and delayed urination by one patient. One individual patient listed achy muscles, headache, blurry vision, and body shaking as additional symptoms.

**Nurse-Identified Symptoms.** Regarding Purpose B, regarding the occurrence of symptoms as identified by nurses on the TRSC: Table 2 shows that 40% or more of nurses reported 8 symptoms, overall. Symptoms reported with the highest occurrence included feeling sluggish (95.5%), nausea (63.6%), hair loss (63.6%), and difficulty sleeping (50.0%). Additional measures included depression (45.5%), loss of appetite (45.5%), numbness in fingers and/or toes (45.5%), taste change (40.9%), difficulty concentrating (36.4%), shortness of breath (36.4%), pain (31.8%), decreased interest in sexual activity (27.3%), bruising (22.7%), skin changes (22.7%), constipation (22.7%), soreness in vein (where chemotherapy was given) (22.7%), weight loss (18.2%), and cough (18.2%). Symptoms reported with the lowest occurrence included sore mouth (13.6%), fever (13.6%), bleeding (13.6%), difficulty swallowing (9.1%), vomiting (9.1%), and sore throat (4.6%). Jaw pain was not reported by nurses.

Regarding the severity of symptoms as self-reported by the nurse on the TRSC: Table 2 shows that symptoms with the highest mean severity included hair loss (3.64), taste change (2.22), feeling sluggish (2.19), decreased interest in sexual activity (2.17), nausea (2.07), skin changes (2), constipation (2), and soreness in vein where chemotherapy was given (2). Additional mean symptom severities included loss of appetite (1.9), difficulty sleeping (1.82), weight loss (1.75), shortness of breath (1.75), bruising (1.6), difficulty concentrating (1.5), difficulty swallowing (1.5), cough (1.5), and bleeding (1.5). Symptoms

with the lowest mean severity included pain (1.43), sore mouth (1.33), depression (1.3), numbness in fingers and/or toes (1.3), vomiting (1.25), sore throat (1), and fever (1).

A few symptoms were added by nurses, including diarrhea in one patient, GERD in one patient, and periorbital edema in one patient.

### **Agreement/Correlation Between Patient-Reported and Nurse Identified**

**Symptoms on the TRSC.** The percentage agreement between patient-reported and nurse identified symptoms was 77%, and the Pearson correlation between the total scores on the TRSC (by patients, and by nurses) was  $r = .77$ . These findings indicate that the patients' total scores through self-report on the TRSC were moderately associated with that of the nurse report on the TRSC for each participant (Rebar et al., 2011). However, note above the differences found between patient reports and nurse reports on the TRSC specific symptom occurrence and symptom severity. These differences have implications for care provided to patients, discussed below.

## **DISCUSSION**

Findings from this study support that adult patients experience many symptoms as a result of cancer treatment. Findings related to Purpose (A) are consistent with previous research. Williams et al. (1997; 2000) found that patient self-report on the OTTAT (a precursor of the TRSC) showed chemotherapy participants most frequently reported hair loss, fever, bruising, nausea and vomiting, numbness of fingers and toes, and fatigue. Moreover, another study by Williams et al. (2001) reported symptoms of patients receiving radiation therapy versus those receiving chemotherapy. That is, chemotherapy patients reported that feeling sluggish (79.6%), hair loss (60.4%), taste change (59.8%), loss of

appetite (57%), and nausea (54.2%) predominated. In comparison, radiation therapy patients reported that feeling sluggish (75.3%), depression (53.1%), cough (50%), pain (49%), weight loss (48.7%), and loss of appetite (48.4%) predominated (Williams et al., 2001).

In a study conducted *outside the USA* focused on symptoms reported on the TRSC by treatment type, Piamjariyakul et al. (2010) found that in adult patients receiving *combined chemotherapy and radiation therapy*, symptoms reported with the greatest occurrence were taste change (73%), loss of appetite (71%), weight loss (67%), sore throat (61%), difficulty sleeping (58%), sore mouth (56%), and nausea (50%). In comparison, in patients receiving *chemotherapy alone*, symptoms reported with the greatest occurrence were loss of appetite (73%), taste change (67%), difficulty sleeping (65%), hair loss (65%), and nausea (60%). Whereas, in patients receiving *radiation therapy alone*, symptoms reported with the greatest occurrence were loss of appetite (64%), pain (62%), taste change (55%), and constipation (47%). A nurse data collector used the TRSC during interviews conducted with patients (Piamjariyakul et al., 2010).

No study had been conducted examining the agreement between patient-reported and nurse-reported symptoms using the TRSC. However, an earlier study by Williams et al. (1994) compared the use of the “usual method of assessment” (How are you today?) to the use of a checklist (the OTTAT, a precursor of the TRSC). Other investigators have used other methods of data collection to compare patient reports and clinician reports of symptoms. Two studies that used a different checklist/“questionnaire” (Basch et al. 2006;

Fromme et al. 2004) found differences in the patient-reported symptoms and the physician-reported symptoms-- but correlations were not reported.

## **IMPLICATIONS AND RECOMMENDATIONS**

Two studies conducted in the USA, on the clinical applications of the TRSC have been reported. The study conducted by Williams et al. (2013) at one cancer center in the upper Midwest affiliated with the Mayo Clinic, investigated the use of the TRSC by patients and the effects on outcomes (i.e., the number of symptoms self-reported by patients and documented in the medical record, managed by the clinicians, and quality of life). A cohort research design was used; patients were followed for 3 to 11 visits. First, the control group (N=55) received the standard of care including standard clinic interview and the option to meet with a RN "Cancer Guide" to create an individualized plan of care. When the first cohort was completed, the intervention group (N=58) received the standard of care and answered the TRSC immediately before each consultation (in the waiting room); the completed TRSC was then provided to the clinician for use during the clinic visit. The study found that patients in the intervention group reported on average 3.76 more symptoms than the control group (as documented in the medical record), and the number of TRSC symptoms identified decreased significantly over time. The intervention group also reported a greater quality of life on the Health-Related Quality of Life-Linear Analogue Self Assessment (HRQOL-LASA) form, as compared to the control group (Williams et al., 2013).

Williams et al. (2011) also conducted a study to evaluate the effects of a nursing intervention focused on teaching symptom management as patients undergo cancer therapy. Participants in the control group (N=10) received the usual standard of care, and

those in the intervention group (N=10) received education and counseling based on the TRSC self-reported symptoms (the intervention included face-to-face contact with the nurse, handouts, and follow-up phone calls). Patients completed the TRSC at baseline, midpoint, and endpoint of the study. The study found that at both the midpoint and endpoint, the intervention group reported lower symptom occurrence and severity on the TRSC, as compared to the control group. Also, at the endpoint, symptom occurrence and severity improved from the midpoint by 27% in the intervention group compared to 11% in the control group (Williams et al., 2011).

In this study, patients self-reported greater symptom occurrence and severity. Therefore, it is recommended that clinicians allow adult patients to self-report on the TRSC to provide more information for clinicians and nurses to use in their caregiving and alleviation of symptoms. These two studies (Williams et al., 2011; 2013) are cited here because both have used the completed the TRSC to assess patient self-report of their symptoms (occurrence and severity). In both studies, the health care providers utilized the patient self-reports as basis for care or interventions during each visit, such as in discussions and interactions with patients (including counseling and education) regarding the reported symptoms and how to alleviate and manage the symptom. During cancer therapy, use of the TSRC (a) promotes a complete and comprehensive assessment and documentation of symptoms experienced by patients, and (b) facilitates the nurses' ability to provide patient-centered education, counseling, and guidance. That is, the TRSC helps optimize oncology care to patients (adults undergoing cancer therapy) through more effective symptom monitoring and management, and improved quality of life.

Early identification of symptoms associated with cancer therapy “can foster timely symptom management through self-care or caregiver amelioration” (Williams et al., 1997, p. 85). Based on the findings of this study and previous research, it is recommended that clinicians allow adult patients undergoing cancer therapy to self-report their symptoms on the TRSC to identify symptom occurrence and symptom severity. Ultimately, this valuable information can help guide clinicians, including nurses, in providing symptom-focused care and education comprehensively, and with greater efficiency (Williams et al., 2011; Williams et al., 2013). The TRSC can help facilitate discussion of self-care alleviation methods, complementary therapies, and coping techniques that address the physical and psychosocial needs of patients undergoing cancer therapy (Piamjariyakul et al., 2010; Williams et al. 2011; 2013; Youngblood et al., 1994).

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FIGURE 1 THERAPY-RELATED SYMPTOMS CHECKLIST (TRSC)

Name: \_\_\_\_\_ ID # \_\_\_\_\_ Site/Clinic \_\_\_\_\_ Date: \_\_\_\_\_

PLEASE **CHECK** THE PROBLEMS YOU HAVE HAD IMMEDIATELY AFTER AND SINCE YOUR LAST TREATMENT. PLEASE **CIRCLE** HOW SEVERE THE PROBLEM WAS ACCORDING TO THE FOLLOWING SCALE:

0 = NONE      1 = MILD      2 = MODERATE      3 = SEVERE      4 = VERY SEVERE

CHECK ☒	EXAMPLE Pain	Degree of Severity (CIRCLE)				
		0	1	2	③	4
<input type="checkbox"/>	Taste Change	0	1	2	3	4
<input type="checkbox"/>	Loss of appetite	0	1	2	3	4
<input type="checkbox"/>	Nausea	0	1	2	3	4
<input type="checkbox"/>	Vomiting	0	1	2	3	4
<input type="checkbox"/>	Weight loss	0	1	2	3	4
<input type="checkbox"/>	Sore mouth	0	1	2	3	4
<input type="checkbox"/>	Cough	0	1	2	3	4
<input type="checkbox"/>	Sore throat	0	1	2	3	4
<input type="checkbox"/>	Difficulty swallowing	0	1	2	3	4
<input type="checkbox"/>	Jaw pain	0	1	2	3	4
<input type="checkbox"/>	Shortness of breath	0	1	2	3	4
<input type="checkbox"/>	Numbness in fingers and/or toes	0	1	2	3	4
<input type="checkbox"/>	Feeling sluggish	0	1	2	3	4
<input type="checkbox"/>	Depression	0	1	2	3	4
<input type="checkbox"/>	Difficulty concentrating	0	1	2	3	4
<input type="checkbox"/>	Fever	0	1	2	3	4
<input type="checkbox"/>	Bruising	0	1	2	3	4
<input type="checkbox"/>	Bleeding	0	1	2	3	4
<input type="checkbox"/>	Hair loss	0	1	2	3	4
<input type="checkbox"/>	Skin changes	0	1	2	3	4
<input type="checkbox"/>	Soreness in vein where chemotherapy was given	0	1	2	3	4
<input type="checkbox"/>	Difficulty sleeping	0	1	2	3	4
<input type="checkbox"/>	Pain	0	1	2	3	4
<input type="checkbox"/>	Decreased interest in sexual activity	0	1	2	3	4
<input type="checkbox"/>	Constipation	0	1	2	3	4
<input type="checkbox"/>	Other problems (please list below)					
<input type="checkbox"/>	_____	0	1	2	3	4
<input type="checkbox"/>	_____	0	1	2	3	4
<input type="checkbox"/>	_____	0	1	2	3	4
<input type="checkbox"/>	_____	0	1	2	3	4

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TABLE 1. DEMOGRAPHICS: SAMPLE CHARACTERISTICS

Variable	Category	Frequency	
<b>Age</b>	30-34	1 (4.5%)	Mean = 56.73 SD = 12.46 Range: 53
	35-39	1 (4.5%)	
	40-44	2 (9.1%)	
	45-49	3 (13.6%)	
	50-54	0	
	55-59	4 (18.2%)	
	60-64	6 (27.3%)	
	65-69	2 (9.1%)	
	≥70	3 (13.6%)	
<b>Gender</b>	Male	10 (45.5%)	
	Female	12 (54.5%)	
<b>Marital Status</b>	Married	19 (86.4%)	
	Single	1 (4.5%)	
	Widowed	1 (4.5%)	
	Divorced	0	
	Other	1 (4.5%)	
<b>Number of Children</b>	0	2 (9.1%)	Mean = 2.62 SD = 1.28 Range = 5
	1	1 (4.5%)	
	2	6 (27.3%)	
	3	7 (31.8%)	
	≥4	5 (22.7%)	
	No Response	1 (4.5%)	
<b>Religion</b>	Protestant	9 (40.9%)	
	Catholic	5 (22.7%)	
	Jewish	0	
	Buddhist	0	
	Other	7 (31.8%)	
	No Response	1 (4.5%)	
<b>Ethnic Background</b>	White	12 (54.5%)	
	African American/Black	0	
	Asian	0	
	Hispanic	10 (45.5%)	
	Native American	0	
	Other	0	
<b>Occupation/Job</b>	Retired	4 (18.2%)	
	Homemaker	2 (9.1%)	
	Disabled	2 (9.1%)	
	Other	10 (45.5%)	
	No Response	4 (18.2%)	
<b>Employment Status</b>	Part Time	0	
	Full Time	7 (31.8%)	
	Not Applicable (Retired/Homemaker/Disabled)	8 (36.4%)	
	No Response	7 (31.8%)	
<b>Highest Education Completed</b>	Elementary only	3 (13.6%)	
	Some high school	3 (13.6%)	
	High school diploma or equivalent (GED)	4 (18.2%)	
	Some higher education, no degree	6 (27.3%)	
	Technical or vocational school	0	
	Associate degree	4 (18.2%)	
	BS/BA	2 (9.1%)	
	Graduate degree	0	
<b>Primary Caregiver</b>	Self	3 (13.6%)	
	Spouse	12 (54.5%)	
	Family	2 (9.1%)	
	No Response	5 (22.7%)	
<b>Spouse's Highest Education</b>	Elementary only	4 (18.2%)	

<b>Completed</b>	Some high school	0	
	High school diploma or equivalent (GED)	7 (31.8%)	
	Some higher education, no degree	2 (9.1%)	
	Technical or vocational school	0	
	Associate degree	1 (4.6%)	
	BS/BA	2 (9.1%)	
	Graduate degree	0	
	Not Applicable	2 (9.1%)	
	No Response	2 (9.1%)	
<b>Spouse's Age</b>	30-34	0	Mean = 57.33 SD = 12.42 Range = 51
	35-39	1 (4.6%)	
	40-44	2 (9.1%)	
	45-49	3 (13.6%)	
	50-54	1 (4.6%)	
	55-59	0	
	60-64	5 (22.7%)	
	65-69	5 (22.7%)	
	≥70	1 (4.6%)	
	Not Applicable	2 (9.1%)	
	No Response	2 (9.1%)	

TABLE 2. SYMPTOM OCCURRENCE AND SEVERITY ON THE TRSC SUBSCALES/ITEMS, PERCENT DISTRIBUTIONS:  
PATIENT-REPORTED AND NURSE-REPORTED

TRSC Symptoms/Subscales or Clusters <sup>c</sup>	Patient-Reported (N=22)		Nurse-Reported (N=22)	
	Percent Occurrence <sup>a</sup>	Mean Severity <sup>b</sup>	Percent Occurrence	Mean Severity
(1) Fatigue				
Feeling sluggish	77.3%	2.12	95.5%	2.19
Depression	59.1%	1.92	45.5%	1.3
Difficulty concentrating	45.5%	2.1	36.4%	1.5
Difficulty sleeping	68.2%	2.4	50.0%	1.82
(2) Eating				
Taste change	54.6%	2.58	40.9%	2.22
Loss of appetite	54.6%	2.25	45.5%	1.9
Weight loss	27.3%	2.17	18.2%	1.75
Difficulty swallowing	22.7%	2	9.1%	1.5
(3) Oropharynx				
Sore mouth	36.4%	1.75	13.6%	1.33
Sore throat	27.3%	2	4.6%	1
Jaw pain	9.1%	1.5	0.0%	0
(4) Fever				
Fever	18.2%	1.5	13.6%	1
Bruising	40.9%	2.11	22.7%	1.6
(5) Nausea				
Nausea	63.6%	2.43	63.6%	2.07
Vomiting	18.2%	2.75	9.1%	1.25
(6) Respiratory				
Cough	40.9%	1.67	18.2%	1.5
Shortness of breath	45.5%	2	36.4%	1.75
(7) Pain	36.4%	1.75	31.8%	1.43
(8) Numbness in fingers and/or toes	54.6%	1.88	45.5%	1.3
(9) Bleeding	22.7%	1.8	13.6%	1.5
(10) Hair loss	72.7%	3.19	63.6%	3.64
(11) Skin changes	40.9%	2	22.7%	2
(12) Constipation	36.4%	2.63	22.7%	2
(13) Soreness in vein (where CT is given)	27.3%	1.83	22.7%	2
(14) Decreased interest in sexual activity	50.0%	3.09	27.3%	2.17

a) Symptom occurrences are in % distributions. b) TRSC severity scale: 0=none; 1=mild; 2=moderate; 3=severe and 4=very severe. c) Fourteen subscales or clusters on the TRSC are numbered, and specific symptoms are shown beneath. Six TRSC symptoms are 'single-item subscales' (see Williams et al., 1997; 2000).

THE EFFECT OF NURSE CHARACTERISTICS ON SATISFACTION  
WITH PROFESSIONALISM IN THE WORK ENVIRONMENT

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Submitted to the School of Nursing in partial fulfillment of the requirements for the  
Nursing Honors Program

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## ABSTRACT

**Purpose and Background/Significance:** This study aims to investigate the relationship between RN characteristics and satisfaction with professionalism in the work environment and explore differences in RN satisfaction based on RN characteristics. Positive organizational culture and professionalism are two resources that can increase job retention. By examining the relationship between RN characteristics and organizational culture, we can understand which RN characteristics influence nurses' satisfaction with professionalism in their work environment.

**Theoretical/Conceptual Framework:** Four aspects of professionalism, which have been identified through prior research, will be examined: autonomy, decision-making, professional status of nurses, and professional development opportunities. Previous research has also identified characteristics of nurses, which are related to differences in RN satisfaction and professionalism. The current study focuses on RN characteristics with previously identified relationships to RN satisfaction, including education, gender, certification, age, and tenure.

**Method:** This descriptive study is a secondary-analysis, using correlation and General Linear Model methods to examine data from the 2013 National Database of Nursing Quality Indicators (NDNQI) RN satisfaction annual survey. The RN Job Satisfaction Scales are measured at the unit level, and one item from each scale is also measured at the individual RN level. Individual level responses by unit type were examined in relationship to RN characteristics. A sample of 42,515 RNs responded to all of the individual level items as well the RN characteristics in 2013.

**Results:** Using correlation methods to examine data, findings identified there is very little relationship between RN characteristics and increased satisfaction with professionalism in the work environment. General Linear Model methods were then used to determine if there were differences in RN satisfaction with professionalism in the work environment based on RN characteristics. These results were statistically significant but with very small effect sizes. The practical implications were not substantial.

**Conclusions:** Organizations seeking to increase RN satisfaction and improve patient outcomes should be aware of the RN characteristics that are correlated with RN satisfaction, specifically as they relate to professionalism in the work environment. These results provide valuable information to healthcare organizations seeking to increase RN satisfaction and improve patient outcomes.

**Role on research team:** As a member of this research team I performed the literature review and identified the study concept and research questions. I also interpreted the data analysis, drafted the manuscript, and prepared a poster presentation outlining findings from the data analysis.

## INTRODUCTION

In recent years, there has been an increasing focus on professionalism in the education and preparatory training of RNs. Although, the definition of professionalism in nursing varies across settings, many people will agree that, there is a push for nurses to embody professional ideals including prioritizing continuing education and training, seeking autonomy to practice the full extent of one's credentials, and participating in leadership roles and decision-making in the care of patients. According to Manojlovich and Ketefian (2002), "The ability of nurses to practice in a professional manner may be influenced by the organizational culture of their work environment. Personal attributes may also play a role. Patient outcomes depend on the identification and promotion of scarce health resources" (p.15). Prior research done by Manojlovich and Ketefian (2002), shows that 16% of variance in a nurses' sense of professionalism is predicted by the culture of their workplace. The combination of nursing professionalism and organizational culture are keys to improving patient outcomes.

In addition, hospitals are being asked to do more with less. There is an overarching urgency in healthcare to achieve better outcomes with fewer resources. An important resource for hospitals includes the pool of tenured Registered Nurses. Numerous research studies, including Boyle, et al., (2006), have cited that higher commitment to the organization, higher intent to stay at your job, and lower turnover rates are the result of higher RN job satisfaction. Hospital administrators will likely be inclined to invest in areas that are shown to increase job satisfaction among their nursing staff, if increased patient outcomes are the end result. In doing

so, they must also invest in each nurse's professionalism because of its synergistic relationship to increased job satisfaction. Given the emphasis of professionalism in Baccalaureate nursing programs, an examination of the perceived professionalism of the RN work environment provides crucial information to both academic institutions and healthcare employers.

This study aims to investigate the relationship between RN characteristics and satisfaction with professionalism in the work environment by unit type and to explore differences in RN satisfaction based on RN characteristics. By examining the relationship between RN characteristics and aspects of the nursing work environment, we can understand which RN characteristics correlate with RN satisfaction with professionalism in their work environment, and the unit types that tend to have RNs with a higher sense of professionalism among their nursing staff.

## **REVIEW OF LITERATURE**

Understanding which RN characteristics are related to nurses' satisfaction with the work environment can guide efforts to improve the work environment and increase retention. Prior studies have examined the effect of RN characteristics on professional behaviors and attitudes; this study examined the relationship between RN characteristics and satisfaction with professionalism in the work environment. Nursing characteristics that have been linked to higher levels of RN job satisfaction and which positively influence professionalism were thought to increase overall satisfaction with professionalism in the work environment. Of the six characteristics examined in our study, certification, education, age, and unit type had been more

frequently researched and described than gender, years, experience, and unit tenure.

Wade (2009) studied the perceived benefits of specialty certification for RNs, concluding that certification led to increased RN job satisfaction, collaboration with members of the healthcare team, and overall sense of empowerment. Certification is noted to enhance “personal achievement, job satisfaction, and validation of knowledge” (Niebuhr & Biel, 2007, p. 176). Additionally, increased specialty knowledge was likely to enhance the individuals perceived level of status and autonomy in the workplace.

Similarly to certification, advanced levels of education were positively associated with increased satisfaction. According to Hwang, et al., (2009), nurses with higher levels of education showed significantly higher levels of professionalism and job satisfaction. Nurses with a BSN were shown to have higher job satisfaction with their workplace than ADN or Diploma nurses (Klaus, 2012). Although nurses with higher levels of education would be expected to have higher expectations of professionalism, they still demonstrated significantly higher satisfaction with professionalism. Little research was found on the effects of gender and unit tenure on RN job satisfaction, however, Klaus, et al., (2012) found that increased unit tenure most often led to decreased job satisfaction. This was thought to be attributed to younger nurses experiencing disillusionment with the RN role over an extended period of time. Age cohorts studied by Klaus, et al., (2012), identified that nurses age 20-29 were the most satisfied and those ages 40-49 were the least

satisfied. These findings supported each other in the sense that, generally speaking, more experienced nurses reported decreased job satisfaction.

Although the characteristics we examined had been studied in relation to satisfaction and professionalism, unit type had only been reviewed for its effect on satisfaction. In this study, we hoped to gain a better understanding of how varying unit types correlated with professionalism in the workplace. According to Boyle, et al., (2006), “nurse workgroups with the highest satisfaction were in pediatric units, rehabilitation units, outpatient clinics and labs; whereas, workgroups with the lowest satisfaction were in EDs and surgical services (peri-operative; p. 636).” In addition, pediatric, rehabilitation, and outpatient clinic RN workgroups had the highest perceived satisfaction with autonomy and decision-making (Boyle, et al., 2006). Medical-surgical, step-down, and critical care nurses were the youngest and fewest in average years in practice, while medical-surgical and step-down nurses tallied the fewest years on their current unit and also displayed the lowest rate of graduate nursing degrees (Boyle, et al., 2006). Nurses in all unit types reported high levels of satisfaction with professional status and professional development, while reporting low satisfaction with decision-making (Boyle, et al., 2006).

Prior studies examining professionalism used attitudes and behaviors to gauge a level of professionalism in a group of RNs. In this study, we will examine four aspects of professionalism that correspond closely to the definition of a professional, according to prior research. Professionalism can be difficult to measure because definitions vary across studies. Wynd (2003) defines professionals

as “individuals oriented toward a particular career, who move beyond basic education, and show a high level of intellectual functioning, a sense of responsibility, scientific-based and specialized knowledge, a desire for extended learning and education, self-governance, and altruism” (p. 252). According to Hwang (2009) “professionalism refers to attitudes representing levels of identification with and commitment to a particular profession” (p. 314).

The National Database of Nursing Quality Indicators (NDNQI) conducts an annual RN Survey that measures RN satisfaction with several aspects of the work environment. Four of these aspects reflect dimensions of professionalism previously identified in the literature. Therefore, in this study we examined four aspects of professionalism: autonomy, decision-making, professional development, and professional status. Autonomy align with professionalization because they facilitate the power of professionals with decision-making (Wynd, 2003). We then looked at satisfaction with professionalism at the individual level across unit types, bridging the gap between satisfaction with unit type and satisfaction with overall professionalism on their unit. Our hope is to attain a better understanding of professionalism in the workplace and to identify which unit type nurses are satisfied with professionalism in their work environment.

New graduate nurses entering the workforce with their baccalaureate degree received a significant amount of training in professionalism and leadership. It's important to understand whether or not these new graduates are seeing professional ideals embraced in their work environment. Some important questions

we hope to bring to light; are the pillars of professionalism new graduates are being taught in school being nurtured when they enter the workforce? Are these new nurses seeing professionalism reflected in their colleagues? Is their environment supporting professional growth and development? Identifying whether or not there is a gap between professionalism being taught in nursing education and professionalism in the work environment can bring attention to organizations that are striving to narrow that gap.

As previously noted, Manojlovich and Ketefian (2002) found that 16% of variance in nursing professionalism was determined by the organizational culture. In addition, positive organizational culture was identified as a key factor in improving patient outcomes. Studies show that nurses working in the hospital setting are not equipped with the autonomy and organizational influence needed to fulfill their professional responsibilities to patients (Manojlovich & Ketefian, 2002). In addition, the workplace environment is proven to significantly impact nursing professionalism, forcing nurses to manipulate the environment to achieve higher levels of professionalism when lacking (Manojlovich & Ketefian, 2002). There is an obvious gap in professionalism between the work environment and what's being taught in nursing education. This study aims to identify areas in which hospital administrators, nurse educators, and nurse leaders alike, can narrow this gap.

Based on findings from Manojlovich and Ketefian (2002), when organizational values align with individual values of the RN, these RNs tend to be more satisfied. As a result of prior research and our findings, we can correlate the professional values

of nurses with characteristics such as age, gender, unit tenure, education, certification, years of experience, and unit type. This information is highly valuable to hospital administrators and nursing leaders who are looking for ways to increase RN satisfaction with professionalism in the work environment, which could translate to improved patient outcomes.

The two research questions addressed in this study are: 1) Are RN characteristics related to RN satisfaction with professionalism in the work environment? 2) Are there differences in satisfaction with professionalism in the work environment based on RN characteristics and unit type?

## METHODS

### **DESIGN & PROCEDURES**

This descriptive study is a secondary-analysis, using correlation and General Linear Model (GLM) methods to examine data from the 2013 National Database of Nursing Quality Indicators (NDNQI) annual RN Survey. The RN Job Satisfaction Scales are measured at the unit level, and one item from each scale is also measured at the individual RN level. Individual level responses were examined in relationship to RN characteristics. Participation in the NDNQI RN survey is voluntary. Hospitals invite RNs to participate in this survey. Hospitals appoint a site coordinator to facilitate communication surrounding the survey. To be eligible for this survey, RNs must spend at least 50% of their time providing direct patient care and must have a minimum of 3 months employment in the current unit.

To distinguish differences in workplace satisfaction amongst the 16 unit-types, a two-step secondary analysis was utilized. Correlation methods were used to evaluate relationships between RN characteristics and job satisfaction to address research question one, “Are RN characteristics related to RN satisfaction with professionalism in the work environment?” GLM methods were used to determine differences in RN satisfaction with professionalism in the work environment based on RN characteristics and unit-type to address research question two, are there differences in satisfaction with professionalism in the work environment based on RN characteristics?

### *Measures*

Four aspects of professionalism were identified through prior research: Autonomy, Decision-Making, Professional Status, and Professional Development Opportunities. Each aspect was measured by a single item from the NDNQI annual RN Survey. Each item is measured using a 6-point Likert scale where 1= strongly disagree and 6= strongly agree. RN characteristics with previously identified relationships to RN satisfaction were examined: Education, Certification, Gender, Age, Years in practice, Years on unit, and Unit Type.

### *Sample*

A sample of 42,515 RNs responded to all of the individual level items as well as the RN characteristics in 2013. Table 1 shows the distribution of RN characteristics by unit type. Included in our sample data are 169 hospitals, representing 3,853 total units. Overall, the sample had over half Bachelor’s prepared nurses (64%), a quarter

specialty certified nurses (25%) and was predominantly female (90%), with a mean age of 41, mean years in practice of 13, and mean unit tenure of 7 years.

### *Analysis*

To distinguish differences in workplace satisfaction amongst the 16 unit-types, a two-step secondary analysis was utilized. Correlation methods were used to evaluate relationships between RN characteristics and job satisfaction to address research question one, "Are RN characteristics related to RN satisfaction with professionalism in the work environment?" GLM methods were used to determine differences in RN satisfaction with professionalism in the work environment based on RN characteristics and unit-type to address research question two, are there differences in satisfaction with professionalism in the work environment based on RN characteristics?

## RESULTS

In evaluating relationships between RN characteristics and satisfaction with professionalism, nearly all correlational relationships proved to be significant ( $p < 0.05$ ). However, the relationships were too small ( $r < 0.1$ ) to be meaningful. Findings yielded significant differences in satisfaction on most RN characteristics, but similar themes amongst varying unit-types.

Table 2 presents the result of the GLM model by unit type. Table 3 identifies patterns in significant group differences across the four professionalism items by unit type.

Specialty certification is related to RN satisfaction on the majority of unit types (Table 2). RNs holding a specialty certification tended to be more satisfied with autonomy than non-certified RNs, whereas non-certified RNs tended to be more satisfied than certified nurses with decision-making, professional status and professional development activities (Table 3).

Excluding psychiatric, rehab and interventional radiology, all unit types displayed significant differences in satisfaction with professionalism across age groups (Table 2). Older nurses (>45) tended to be more satisfied with decision-making, professional status, and professional development opportunities. Nurses age thirty and younger were the most satisfied with their autonomy (Table 3).

Education was dichotomized into BSN-prepared or higher vs. non-BSN prepared (Table 2). Non-BSN nurses were more satisfied with decision-making, professional status, and autonomy. BSN-prepared nurses reported higher levels of satisfaction with professional development opportunities (Table 3).

Clear differences in satisfaction with professionalism by gender were identified (Table 2). Female nurses reported higher levels of satisfaction than males in all clinical areas, excluding pediatrics. Male RNs were more satisfied than female RNs with professional status and professional development opportunities on pediatric units (Table 3).

Years in practice yielded similar trends by unit type to RN satisfaction with professionalism (Table 2). The longer a RN has been in practice, the more satisfied they tended to be with decision-making, professional status, and professional

development opportunities. Younger nurses tended to be more satisfied with their perceived level of autonomy (Table 3).

Years on unit displayed obvious trends in satisfaction by unit type (Table 2). Nurses with more unit experience, who have been working on their current unit for longer, were more satisfied with decision-making, professional status, and professional development opportunities. Those RNs with less experience on the unit reported higher satisfaction with autonomy (Table 3).

Education influenced satisfaction with professional development opportunities on a handful of unit types. In precisely half of the unit types evaluated, gender was a key determinant in satisfaction with autonomy. Years on unit was the primary characteristic resulting in differences in satisfaction for peri-operative and emergency department nurses. Significant differences in satisfaction across years in practice were found amongst ambulatory nurses. As a whole, medical nurses showed significant levels of satisfaction related to professional status. The results founded are statistically significant but with small effect sizes, the practical implications are not substantial. It's likely that large sample sizes influenced highly significant findings.

## DISCUSSION

Prior research by Klaus (2012) revealed relationships between age cohorts and RN characteristics, but did not examine how that relationship effects satisfaction with professionalism. Our study showed that satisfaction with professionalism in the work environment is strongly correlated with age. Findings also revealed mostly

negative correlations between satisfaction with professionalism and nurses who were BSN-prepared and specialty certified. These findings did not validate what Niebuhr and Biel (2007) found to be true, specifically that specialty certification leads to increased workplace satisfaction.

According to Hwang et al. (2009), nurses with higher education showed higher levels of professionalism and increased professionalism was the key factor influencing increased job satisfaction. Our findings suggested little relationship between higher education and an increased satisfaction with professionalism in the workplace. BSN-prepared nurses were only more satisfied than non-BSN nurses with one of the four aspects of professionalism, that being professional development opportunities. A possible reason for this finding is that BSN-prepared nurses may have higher expectations for professionalism in the work environment. This could be because BSN-prepared nurses are learning significantly more about professionalism in their course work than non-BSN prepared nurses.

Twentieth-first century baccalaureate programs are placing significant emphasis on professionalism and leadership in nursing practice because of its positive influence on patient outcomes, quality core measures, RN turnover and organizational cost-effectiveness (Lyons, 2008). Novice nurses are entering the workforce with a great deal of professionalism training and are being mentored by nurses who did not have comparable training. Disseminating surveys to better understand RN expectations may be appropriate to validate this theory.

Certified nurses were most satisfied with their level of autonomy. This is an expected finding because of the increased responsibilities and scope of practice that comes with certification. The fact that non-certified RNs were more satisfied with decision-making, professional status, and professional development opportunities comes as somewhat of a surprise because of the strong literature background tying certification to professionalism. Yet again, RN expectations should be evaluated to determine if specialty certification raises nurses expectations of professionalism in the work environment. Nurses who obtain specialty certification may have heightened expectations for their level of professional status and decision-making abilities in the workplace, and thus are less satisfied with the current levels of professionalism in the work environment.

Very little research was found discussing the effect of tenure on RN satisfaction. Trends identified from our research reveal that older nurses (>45), are the most satisfied with professional status, professional development, and decision-making. Nurses younger than 30 reported higher levels of satisfaction with autonomy. Similar to expectations discussed in regards to education, it's possible that younger nurses have lower expectations and desire less autonomy than more experienced nurses. In addition, older nurses may be able to take advantage of more professional development opportunities because of their experience. Younger nurses often spend a number of years learning to become skilled bedside nurses prior to pursuing professional development opportunities away from the bedside.

Data revealed that female nurses are more satisfied than male nurses in nearly all-clinical arenas, excluding pediatrics. Male nurses demonstrated a greater satisfaction with professionalism than females on pediatric units. Prior research regarding satisfaction by gender was difficult to identify. Future research may aim to explore this topic in more detail as more and more men join the profession of nursing.

Prior research has examined unit-type differences in workplace satisfaction but a gap was identified in terms of understanding the correlation between specific RN characteristics and their relationship to satisfaction with professionalism in the workplace. Our findings lay a concrete foundation for future interventional research looking to study interventions aimed to increase workplace satisfaction and subsequently retention of nurses. Examining these relationships from a unit-type perspective allows nursing administrators to identify high performing units and dig deeper to uncover best practices leading to increased satisfaction. Conversely, identifying units with lower scores provides a baseline from which to assess problem areas. There are dozens of potential variables that come into play of why a particular unit-type has increased satisfaction with professionalism versus another unit, but our findings are a starting point to begin evaluating those variables at play.

## LIMITATIONS AND RECOMMENDATIONS

Due to small effect sizes, future studies may want to study a more focused sample size. Due to the exploratory approach, causation cannot be conclusively determined. Self reported levels of satisfaction lead to results that are less concrete.

Prior research contradicts our findings that higher education had little effect on RN satisfaction with professionalism. Further research is needed to better understand the relationship between higher education and lower levels of reported satisfaction with professionalism. Future researchers may find it beneficial to also utilize the Practice Environment Scale to determine the frequency that these specific professionalism variables are displayed in the work environment. These findings would likely lead to more conclusive results.

## CONCLUSION

At this point, it is too early to make strong clinical recommendations in regards to which specific RN characteristics lead to increased satisfaction with professionalism. Trends identified from our study reveal that older nurses are more satisfied with all aspects of professionalism, excluding autonomy. Younger nurses were more satisfied with their level of autonomy on all but one unit type studied. Female nurses were more satisfied than male nurses with the exception of pediatrics. Non-BSN prepared RNs were more satisfied than BSN-prepared nurses with all aspects of professionalism, excluding professional development opportunities. Non-certified nurses were more satisfied with all aspects of

professionalism excluding autonomy. Certified nurse were more satisfied with their level of autonomy.

By investing in the professionalism of the organizational culture, hospital administrators may be able to increase RN retention and patient outcomes simultaneously through improved RN satisfaction. Findings from this study can be used in future research to determine specific RN characteristics and unit-types that enhance workplace satisfaction with professionalism. Our research looked at relationships between RN characteristics and workplace satisfaction in a way that had not been done prior. Future efforts may need to be focused on better understanding RN expectations in regards to professionalism. This may lead to a better understanding of why nurses with higher levels of education and specialty certification are reporting lower levels of satisfaction with professionalism.

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TABLE 1. DESCRIPTIVE STATISTICS BY UNIT TYPE

	Age			Sex (Female) N(%)	Education (BSN or Higher) N(%)	Certification (Yes) N(%)>	Years in Practice Mean (std)	Years on Unit Mean (std)	DM Mean (std)	AU Mean (std)	PS Mean (std)	PD Mean (std)
	<=30 N(%)	31-45 N(%)	45 N(%)									
<b>Critical Care</b>	220 (33.8)	2664 (40.8)	1662 (25.5)	5470 (83.8)	4858 (74.4)	2028 (31.1)	10.91 (9.57)	6.37 (6.86)	3.39 (1.31)	3.40 (1.15)	2.97 (1.28)	2.65 (1.18)
<b>Step Down</b>	1352 (39.5)	1321 (38.6)	752 (22.0)	3003 (87.7)	2296 (67.0)	549 (16.0)	8.20 (8.64)	4.86 (5.35)	3.22 (1.27)	3.42 (1.12)	2.83 (1.22)	2.53 (1.13)
<b>Medical</b>	1537 (35.5)	1698 (39.2)	1100 (25.4)	3982 (91.9)	2808 (64.8)	727 (16.8)	8.66 (9.07)	5.23 (5.88)	3.15 (1.24)	3.41 (1.17)	2.75 (1.20)	2.47 (1.08)
<b>Surgical</b>	1188 (38.9)	1053 (34.5)	815 (26.7)	2813 (92.0)	1929 (63.1)	499 (16.3)	9.35 (10.05)	5.89 (6.74)	3.13 (1.25)	3.46 (1.13)	2.83 (1.24)	2.47 (1.10)
<b>Medical-Surgical Comb</b>	1703 (34.1)	1940 (38.9)	1346 (27.0)	4589 (92.0)	2981 (59.8)	825 (16.5)	9.21 (9.21)	5.54 (6.13)	3.20 (1.25)	3.34 (1.10)	2.83 (1.21)	2.52 (1.10)
<b>Obstetric</b>	1023 (22.8)	1839 (41.1)	1616 (36.1)	4459 (99.6)	2742 (61.2)	1272 (28.4)	14.49 (11.07)	9.06 (8.49)	3.34 (1.26)	3.57 (1.15)	2.84 (1.22)	2.66 (1.14)
<b>Neonate</b>	542 (23.9)	794 (35.0)	934 (41.1)	2220 (97.8)	1564 (68.9)	686 (30.2)	15.86 (11.30)	10.68 (9.25)	3.38 (1.28)	3.46 (1.15)	2.84 (1.23)	2.67 (1.19)
<b>Pediatric</b>	588 (37.8)	593 (38.2)	373 (24.0)	1487 (95.7)	1098 (70.7)	487 (31.3)	11.21 (10.24)	7.87 (8.10)	3.19 (1.21)	3.65 (1.12)	2.67 (1.13)	2.55 (1.14)
<b>Psychiatric</b>	234 (15.5)	490 (32.4)	790 (52.2)	1234 (81.5)	810 (53.5)	216 (14.3)	14.54 (11.86)	6.58 (7.03)	3.34 (1.42)	3.33 (1.24)	2.89 (1.31)	2.68 (1.26)
<b>Perioperative</b>	746 (11.3)	2319 (35.1)	3537 (53.6)	5974 (90.5)	3816 (57.8)	1839 (27.9)	18.86 (11.78)	8.63 (8.08)	3.61 (1.34)	3.47 (1.19)	2.99 (1.24)	2.83 (1.24)
<b>Emergency Department</b>	1166 (26.4)	1988 (45.1)	1255 (28.5)	3662 (83.1)	2711 (61.5)	1079 (24.5)	11.71 (9.86)	5.77 (6.12)	3.27 (1.33)	3.58 (1.15)	2.90 (1.23)	2.67 (1.22)
<b>Ambulatory Care</b>	226 (9.6)	725 (30.7)	1410 (59.7)	2264 (95.9)	1508 (63.9)	779 (33.0)	20.18 (11.56)	7.13 (6.89)	3.32 (1.30)	3.77 (1.21)	2.74 (1.16)	2.69 (1.20)

<b>Interventional</b>	404 (11.0)	1335 (36.3)	1935 (52.7)	3211 (87.4)	2097 (57.1)	940 (25.6)	18.30 (10.96)	6.93 (6.55)	3.23 (1.30)	3.59 (1.23)	2.74 (1.17)	2.61 (1.17)
<b>Other</b>	858 (18.1)	1920 (40.5)	1960 (41.4)	4198 (88.6)	3023 (63.8)	1408 (29.7)	15.04 (11.13)	6.14 (6.09)	3.19 (1.29)	3.64 (1.24)	2.75 (1.20)	2.53 (1.17)
<b>Adult Bone Marrow Transplant</b>	39 (31.7)	58 (47.2)	26 (21.1)	116 (94.3)	100 (81.3)	41 (33.3)	9.70 (9.67)	6.46 (5.64)	2.77 (1.27)	3.98 (1.02)	2.41 (1.03)	2.28 (1.03)
<b>Rehab</b>	115 (17.6)	224 (34.2)	316 (48.2)	588 (89.8)	377 (57.6)	159 (24.3)	14.03 (11.15)	6.70 (7.01)	3.13 (1.26)	3.35 (1.16)	2.70 (1.18)	2.44 (1.11)

\*DM = Decision-Making, AU = Autonomy, PS = Professional Status, PD = Professional Development

TABLE 2. GENERAL LINEAR MODEL RESULTS

## F-value and Effect Size (Partial eta-squared) Values

<b>Decision Making</b>						
	<b>Age</b>	<b>Gender</b>	<b>Years in Practice</b>	<b>Years on Unit</b>	<b>Education</b>	<b>Certification</b>
Critical Care	4.82* (.001)	0.001 (.000)	1.23 (.000)	14.03* (.002)	0.13 (.000)	9.49* (.001)
Step Down	2.35 (.001)	0.03 (.000)	0.56 (.000)	1.96 (.001)	4.25* (.001)	21.86* (.006)
Medical	1.94 (.001)	0.76 (.000)	0.03 (.000)	9.64* (.002)	8.80* (.002)	14.37* (.003)
Surgical	0.73 (.000)	3.23 (.001)	0.05 (.000)	4.41* (.001)	4.29* (.001)	13.30* (.004)
Medical-Surgical Combined	3.48* (.001)	3.58 (.001)	0.01 (.000)	5.55* (.001)	2.61 (.001)	39.72* (.008)
Obstetric	5.10* (.002)	0.00 (.000)	0.25 (.000)	1.54 (.000)	1.75 (.000)	4.15* (.001)
Neonate	3.96* (.003)	0.31 (.000)	2.50 (.001)	2.20 (.001)	0.36 (.000)	1.00 (.000)
Pediatric	0.47 (.001)	0.48 (.000)	2.03 (.001)	0.33 (.000)	2.02 (.001)	12.77* (.008)
Psychiatric	0.56 (.001)	2.92 (.002)	0.43 (.000)	1.25 (.001)	0.89 (.001)	3.09 (.002)
Perioperative	3.79* (.001)	0.10 (.000)	8.84* (.001)	20.74* (.003)	0.08 (.000)	10.05* (.002)
Emergency Department	2.61 (.001)	4.62* (.001)	1.59 (.000)	8.01* (.002)	0.07 (.000)	2.44 (.001)
Ambulatory Care	7.68* (.006)	0.03 (.000)	9.32* (.004)	0.52 (.000)	0.03 (.000)	6.62* (.003)
Interventional	6.85* (.004)	0.14 (.000)	0.003 (.000)	2.71 (.001)	1.91 (.001)	23.70* (.006)
Other	4.19* (.002)	0.63 (.000)	1.89 (.000)	1.70 (.000)	0.83 (.000)	4.17* (.001)
Adult Bone Marrow Transplant	1.50 (.025)	0.87 (.007)	0.03 (.000)	0.28 (.002)	0.002 (.000)	1.18 (.010)
Rehab	0.12 (.000)	0.02 (.000)	0.05 (.000)	2.58 (.004)	0.87 (.001)	11.03* (.017)

<b>Autonomy</b>						
	<b>Age</b>	<b>Gender</b>	<b>Years in Practice</b>	<b>Years on Unit</b>	<b>Education</b>	<b>Certification</b>
Critical Care	6.34* (.002)	23.85* (.004)	0.04 (.000)	0.07 (.000)	2.47 (.000)	1.12 (.000)
Step Down	2.22 (.001)	28.80* (.008)	3.94* (.001)	0.41 (.000)	2.25 (.001)	12.21* (.004)
Medical	16.41* (.008)	18.33* (.004)	0.12 (.000)	0.08 (.000)	3.17 (.001)	2.23 (.001)
Surgical	11.69* (.008)	2.54 (.001)	2.80 (.001)	1.87 (.001)	5.38* (.002)	9.00* (.003)
Medical-Surgical Combined	34.28* (.014)	21.21* (.004)	3.16 (.001)	3.69 (.001)	6.60* (.001)	56.30* (.011)
Obstetric	24.44* (.011)	2.85 (.001)	8.29* (.002)	0.44 (.000)	13.57* (.003)	10.43* (.002)
Neonate	8.48* (.007)	1.27 (.001)	0.11 (.000)	5.62* (.002)	0.60 (.000)	0.02 (.000)
Pediatric	6.20* (.008)	3.13 (.002)	0.06 (.000)	0.85 (.001)	4.47* (.003)	4.82* (.003)
Psychiatric	0.14 (.000)	7.54* (.005)	2.60 (.002)	2.76 (.002)	8.57* (.006)	6.37* (.004)
Perioperative	15.99* (.005)	27.36* (.004)	23.74* (.004)	22.70* (.003)	8.50* (.001)	0.35 (.000)
Emergency Department	6.57* (.003)	44.04* (.010)	4.04* (.001)	5.54* (.001)	0.60 (.000)	0.06 (.000)
Ambulatory Care	7.76* (.007)	0.31 (.000)	12.33* (.005)	1.42 (.001)	2.31 (.001)	6.88* (.003)
Interventional	5.99* (.003)	13.90* (.004)	4.54* (.001)	1.23 (.000)	5.40* (.001)	8.92* (.002)
Other	3.89* (.002)	12.47* (.003)	36.63* (.008)	1.26 (.000)	0.01 (.000)	2.96 (.001)
Adult Bone Marrow Transplant	0.84 (.014)	0.01 (.000)	1.00 (.009)	0.62 (.005)	0.15 (.001)	0.74 (.006)
Rehab	2.97 (.009)	0.20 (.000)	1.78 (.003)	0.73 (.001)	5.07* (.008)	1.46 (.002)

<b>Professional Status</b>						
	<b>Age</b>	<b>Gender</b>	<b>Years in Practice</b>	<b>Years on Unit</b>	<b>Education</b>	<b>Certification</b>
Critical Care	19.14* (.006)	0.20 (.000)	0.70 (.000)	8.45* (.001)	0.47 (.000)	3.86 (.001)
Step Down	3.97* (.002)	0.04 (.000)	0.85 (.000)	3.93* (.001)	3.18 (.001)	19.64* (.006)
Medical	10.74* (.005)	0.11 (.000)	1.42 (.000)	7.07* (.002)	4.91* (.001)	12.85* (.003)
Surgical	5.22* (.003)	0.07 (.000)	0.12 (.000)	7.04* (.002)	0.001 (.000)	10.60* (.003)
Medical-Surgical Comb	6.68* (.003)	7.61* (.002)	1.39 (.000)	3.43 (.001)	3.13 (.001)	22.96* (.005)
Obstetric	4.35* (.002)	0.02 (.000)	0.13 (.000)	5.77* (.001)	0.88 (.000)	1.38 (.000)
Neonate	3.92* (.003)	1.29 (.001)	6.40* (.003)	2.61 (.001)	1.38 (.001)	4.16* (.002)
Pediatric	3.29* (.004)	5.83* (.004)	3.87* (.002)	0.13 (.000)	0.01 (.000)	8.51* (.005)
Psychiatric	1.58 (.002)	1.13 (.001)	1.29 (.001)	1.59 (.001)	0.22 (.000)	11.17* (.007)
Perioperative	4.46* (.001)	0.45 (.000)	7.03* (.001)	15.78* (.002)	1.63 (.000)	2.77 (.000)
Emergency Department	6.47* (.003)	0.18 (.000)	0.34 (.000)	13.12* (.003)	3.05 (.001)	0.18 (.000)
Ambulatory Care	9.59* (.008)	1.77 (.001)	14.03* (.006)	1.72 (.001)	0.00 (.000)	1.83 (.001)
Interventional	1.73 (.178)	0.16 (.000)	0.01 (.000)	0.87 (.000)	0.22 (.000)	8.94* (.002)
Other	12.81* (.005)	0.21 (.000)	1.57 (.000)	2.06 (.000)	1.51 (.000)	0.002 (.000)
Adult Bone Marrow Transplant	3.69* (.060)	0.00 (.000)	5.00* (.042)	0.88 (.008)	1.47 (.013)	0.99 (.009)
Rehab	0.03 (.000)	0.004 (.000)	0.51 (.001)	1.69 (.003)	0.001 (.000)	4.23* (.006)

<b>Professional Development</b>						
	<b>Age</b>	<b>Gender</b>	<b>Years in Practice</b>	<b>Years on Unit</b>	<b>Education</b>	<b>Certification</b>
Critical Care	11.87* (.004)	0.60 (.000)	0.13 (.000)	2.79 (.000)	7.66* (.001)	4.42* (.001)
Step Down	4.32* (.003)	0.96 (.000)	0.34 (.000)	7.35* (.002)	2.14 (.001)	17.32* (.005)
Medical	8.09* (.004)	0.28 (.000)	5.03* (.001)	0.51 (.000)	0.69 (.000)	6.26* (.001)
Surgical	0.73 (.000)	0.98 (.000)	0.23 (.000)	5.34* (.002)	0.26 (.000)	20.18* (.007)
Medical-Surgical Comb	1.75 (.001)	0.22 (.000)	1.31 (.000)	0.46 (.000)	3.65 (.001)	26.24* (.005)
Obstetric	10.51* (.005)	0.06 (.000)	0.03 (.000)	0.19 (.000)	7.93* (.002)	0.79 (.000)
Neonate	13.77* (.012)	0.00 (.000)	0.01 (.000)	2.61 (.001)	2.71 (.001)	0.53 (.000)
Pediatric	4.63* (.006)	4.73* (.003)	6.96* (.004)	0.71 (.000)	3.04 (.002)	5.02* (.003)
Psychiatric	0.05 (.000)	0.40 (.000)	0.62 (.000)	3.35 (.002)	2.10 (.001)	3.06 (.002)
Perioperative	1.97 (.001)	2.60 (.000)	2.21 (.000)	22.51* (.003)	13.48* (.002)	7.25* (.001)
Emergency Department	7.77* (.004)	0.20 (.000)	0.68 (.000)	10.57* (.002)	7.64* (.002)	0.02 (.000)
Ambulatory Care	5.38* (.005)	1.27 (.001)	15.73 (.007)	2.39 (.001)	1.55 (.001)	4.93* (.002)
Interventional	0.80 (.000)	0.60 (.000)	0.41 (.000)	0.04 (.000)	6.73* (.002)	7.06* (.002)
Other	4.18* (.002)	0.52 (.000)	5.96* (.001)	0.97 (.000)	2.08 (.000)	0.06 (.000)
Adult Bone Marrow Transplant	0.83 (.014)	0.40 (.003)	0.18 (.002)	1.91 (.016)	0.08 (.001)	3.91 (0.033)
Rehab	0.55 (.002)	0.63 (.001)	1.17 (.002)	3.25 (.005)	1.28 (.002)	5.03* (.008)

\*Significant at p<0.05

TABLE 3. SIGNIFICANT RESULTS OF GLM BY UNIT TYPE

Professionalism Item	Age				Gender				Education				Certification				Years in Practice				Years on Unit			
	DM	AU	PS	PD	DM	AU	PS	PD	DM	AU	PS	PD	DM	AU	PS	PD	DM	AU	PS	PD	DM	AU	PS	PD
Unit Type																								
Critical Care	>45	≤30	>45	>45		F					B	N		N	N						+		+	
Step Down			>45	>45		F			N			N	C	N	N		-						+	+
Medical		≤30	>45	31-45		F			N		N			N	N				+		+		+	
Surgical		≤30	>45						N	N			N	C	N	N						+		+
Medical-Surgical Comb	>45	≤30	>45			F	F			N			N	C	N	N						+		
Obstetric	>45	≤30	>45	31-45						N		B	N	C				-					+	
Neonate	>45	≤30	>45	31-45											N				+			-		
Pediatric		≤30	>45	>31			M	M		N			N	C	N	N				+	+			
Psychiatric						F				N				C	N									
Perioperative	>45		>45									B	N			N		+		+		+		+
Rehab										N			N		N	N								
Emergency		≤30	>45	>31	F	F						B						-				+	-	+
Ambulatory	>45	≤30	>45	>45									N	C		N		-	+	-	-			
Interventional	>45	≤30				F				N		B	N	C	N	N			-					
Adult BMT			>45													N				+				
Other	>45	>45	>45	>45		F							N					-			-			

Categories listed in cells represent the category with the highest level of RN satisfaction with professionalism. N = Non-BSN or No Specialty Certification, B = BSN, C = Specialty Certification, + = Longer Tenure, - = Shorter Tenure