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## The impact of ethics and work-related factors on nurse practitioners' and physician assistants' views on quality of primary healthcare in the United States

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### ABSTRACT

**Purpose:** Nurse practitioners (NPs) and physician assistants (PAs) provide primary care services for many American patients. Ethical knowledge is foundational to resolving challenging practice issues, yet little is known about the importance of ethics and work-related factors in the delivery of quality care. The aim of this study was to quantitatively assess whether the quality of the care that practitioners deliver is influenced by ethics and work-related factors.

**Methods:** This paper is a secondary data analysis of a cross-sectional self-administered mailed survey of 1,371 primary care NPs and PAs randomly selected from primary care and primary care subspecialties in the United States.

**Results:** Ethics preparedness and confidence were significantly associated with perceived quality of care ( $p < 0.01$ ) as were work-related characteristics such as percentage of patients with Medicare and Medicaid, patient demands, physician collegiality, and practice autonomy ( $p < 0.01$ ). Forty-four percent of the variance in quality of care was explained by these factors.

**Conclusions:** Investing in ethics education and addressing restrictive practice environments may improve collaborative practice, teamwork, and quality of care.

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### 1. Introduction

The Patient Protection and Affordable Care Act (PPACA) was passed by the U.S. Congress and signed into law in 2010 by President Barack Obama. This Act is expected to significantly lower health care costs and extend coverage to millions of U.S. citizens (Public Law, 2010). While this is a major legislative accomplishment in addressing healthcare costs, a national shortage of primary care physicians coupled with an increasingly aging and chronically ill population will require an extended pool of clinicians qualified to meet the public's

complex needs (AARP, 2009; Anderson & Horvath, 2004; Sataline & Wang, 2010; Wagner, 2001).

Nurse practitioners (NPs) and physician assistants (PAs) provide primary patient care across the United States (U.S.) working both independently or under physician guidance. Today there are over 100,000 NPs and PAs practicing in the U.S. (American Academy of Physician Assistants, 2013; U.S. Department of Health & Human Services, 2010) meeting the primary, preventative, and chronic health care needs of American citizens, often in medically underserved geographical regions. However, very few studies address the roles of primary care NPs and PAs in the U.S. and the ethical challenges this role brings to patient care delivery. In fact, disagreement remains between NPs and physicians on the role of advanced nurse practitioners and their scope of practice within the healthcare arena. For instance, in a recent national survey NPs believe that they provide safe, efficient, and quality care while two-thirds of MDs (66.1%) report that physicians provide a higher-quality examination and consultation than NPs alone (Donelan, DesRoches, Dittus, & Buerhaus, 2013). Moreover, physicians are less likely to believe that NPs should have hospital admitting privileges, lead medical homes, or be paid in a similar fashion for providing the same services (Donelan et al., 2013). It is

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difficult to develop team-based collaborative care initiatives when philosophical differences and contrasting perceptions exist among healthcare disciplines.

In an 11-point actionable plan to improve access, quality, and cost effective care to consumers while reducing the national deficit and addressing the nation's fiscal crisis, Emanuel and colleagues (Emanuel et al., 2012) recommend increasing the role of advance practitioners, such as NPs and PAs. To meet the goals of this initiative, however, the training of NPs and PAs will require educational models that reflect the realities of clinical practice and the difficult ethical challenges they encounter each day—allocation of scarce resources, the costs of caring for the uninsured and underinsured, helping patients and their families transition to supportive palliative and hospice care, informed consent to treatment and research, prescription drug costs, conflict in professional relationships and many other complex issues. Otherwise, the stress these issues engender could negatively influence quality care and patient safety.

Little is known about how important ethics and related factors (i.e., ethics preparedness, ethics confidence, physician support, patient demands, and practice autonomy) are to the provision of quality care in the experiences of NPs and PAs. Our previous research with these two groups indicates that they experience similar ethical challenges. These include, but are not limited to, insurance constraints, conflicts in professional relationships, informed consent, and allocation of resources (Ulrich et al., 2006). In 2005, Laabs reported on a variety of ethical issues that NPs encountered in primary care. Several patient-related issues were particularly troubling, stemming from patients' refusal of appropriate treatment as well as inappropriate patient requests, pressures to see an increasingly complex patient load, and uninformed patients (Laabs, 2005). However, the effect of these and other ethical issues on NPs and their patients remain to be answered. In another study, Grady et al. (2008) identified the importance of ethics confidence in moral decisions among nurses—some of whom had graduate degrees—and its relationship to moral action in practice, yet they did not specifically focus on NPs and PAs.

As we rely more heavily on NPs and PAs to fill the primary care physician void and meet the goals of the Patient Protection and Affordable Care Act, ethical issues will undoubtedly arise in team-based partnerships. Therefore, we conducted a secondary analysis of data from a national survey of 3900 primary care NPs and PAs to address the following research question: "What ethics and work-related factors influence NP and PA clinicians' views on quality of care in their clinical practice?" The purpose was to describe how NP and PA perceptions of their ethics preparedness, confidence, physician collegiality, and autonomy, along with the patient demands they encounter influence perceived quality of care in their clinical practice.

## 2. Study data and methods

### 2.1. Data source and sample

This study represents a secondary data analysis from a national sample of 3900 primary care and primary care subspecialty NP and PA providers in the United States during 2002–2003 (including family health, pediatrics, geriatrics, obstetrics or gynecology, internal medicine, and adult health) (Ulrich et al., 2006). The original study aimed to understand the ethical issues in NP and PA practice using a self-administered questionnaire; the sample was selected from the American Academy of Physician Assistants and a comprehensive NP list from Medical Marketing Services (<http://www.mmslists.com/main.asp>). The study followed Dillman's total design survey method with an overall adjusted response rate of 50.6% (Dillman, 1978). Institutional review board approval was received by the University of Virginia and the National Institutes of Health. For the purpose of this study, we used an analytic sample of 1,371 respondents that included

all variables of interest. Our methods are described in detail elsewhere (Ulrich et al., 2006).

## 3. Instruments

### 3.1. Outcome measure

A 10-item quality of care summary measure was adapted from items in the Community Tracking Study Physician Survey, a nationally representative telephone survey by the Center for Studying Health System Change (The Community Tracking Study (CTS) Physician Survey, n.d.) (scored from 10 to 50, with higher scores representing positive views on quality of care delivery). We added two items to reflect cost concerns in providing care and an item measuring communication with third party payers. The items reflect providers' perceptions about abilities to make clinical decisions that meet their patient's needs, level of communication with other providers and third party payers, balancing cost concerns with patient advocacy, and time spent with patients. Construct validity was assessed using exploratory factor analysis. Two factors accounted for 49% of the variance in the scale score. The first factor, consisting of 5-items, measured quality patient care with loadings ranging from 0.59 to 0.72. The second factor consisted of 5-items measuring communication with others and cost issues. Factor loadings for this subscale ranged from 0.46 to 0.80. The item "can make clinical decisions in the best interest of my patients without pressure to keep the cost down" also loaded moderately on the quality of patient care factor (loading = 0.47). Cronbach's alpha showed an internal consistency of 0.81 for the total scale and acceptable reliabilities for the subscales (0.74 for the patient care subscale and 0.70 for the communication/cost subscale respectively).

### 3.2. Independent measures

#### 3.2.1. Demographic information

Data were collected on a number of socio-demographic and practice-related variables, including age, gender, ethnicity, income, type of practitioner (NP vs. PA), years in practice, years in current position, practice setting, employment status, for-profit and/or not-for-profit designation and insurance coverage (i.e., Medicaid, Medicare, private, uninsured and percent of patient population enrolled in managed care).

#### 3.2.2. Ethics preparedness and ethics confidence

The Ethics Preparedness Scale, originally adapted from Buss, Marx, and Sulmasy (1998) and Waz and Henkind (1995) measured training, mentorship, and preparedness in ethics. The scale is scored from 1 (strongly disagree) to 5 (strongly agree) with higher scores indicating more ethics preparedness. Construct validity was supported by exploratory factor analysis which identified two factors (i.e., perception of readiness to handle ethical issues and adequate education and mentorship for addressing ethical issues) accounting for 62% of the variance in the scale. The internal reliability alpha for the total scale was 0.76, and both the readiness and mentorship subscales were internally consistent ( $\alpha = 0.76$  and  $0.83$ , respectively).

Ethics confidence was measured by adding two items to the original six-item instrument developed from the work of Sulmasy, Dwyer, and Marx (1995) to assess the level of ethics confidence of practitioners. Item responses range from 1 (not at all confident) to 4 (very confident) with higher scores indicating a higher level of confidence. Exploratory factor analysis supported one factor structure, accounting for 59% of the variance in the scale (factor loadings ranging from 0.65 to 0.85). The internal consistency reliability of the instrument was excellent ( $\alpha = .90$ ).

#### 3.2.3. Work-related characteristics

Several self-report measures from the Physician Worklife Study addressed the patient demands of primary care practice, physician

collegiality, and practice autonomy (Williams et al., 1999). Both the patient care demands and physician collegiality scales are scored on a scale from 1 (strongly disagree) to 5 (strongly agree). Total scores range from 4–20 with higher scores indicating a higher degree of patient demands and support from physician colleagues.

The Practice Autonomy Scale (PAS), a 5-item measure developed by Williams and colleagues (Williams et al., 1999), asks participants if clinical guidelines restrict freedom of practice and referral of patients as needed, as well as create gatekeeping requirements. Two items are reverse scored with item responses ranging from 1 (strongly disagree) to 5 (strongly agree) and summary scores ranging from 5–25. Higher scores represent higher levels of practice autonomy. Cronbach's alpha was 0.64. Exploratory factor analysis identified one factor accounting for 42% of the variance in the scale scores, and factor loadings were higher than 0.50.

#### 4. Data analysis

Data were analyzed using PASW/SPSS 18.0. Descriptive statistics included frequencies, medians, means, and standard deviations. Relationships between variables were assessed using Kendall's tau<sub>b</sub> or Pearson correlation coefficient, as appropriate. For all analyses, a two-sided significance level of  $\alpha = .05$  was used, and the analytic sample included those respondents with complete data on all variables of interest. Total scores were calculated for each instrument, and linear regression models were estimated to determine the effects of ethics preparedness, ethics confidence, socio-demographic factors and work-related characteristics on perceived quality of care.

#### 5. Results

Table 1 provides descriptive information on the NP-PA analytic sample and displays correlations between respondents' socio-demographic characteristics and their views on quality of care. The majority of the sample was female, NPs, and prepared at the master's level with a mean age of 44 years. A higher perceived quality of patient care was associated with numbers of years as a practitioner ( $p < 0.01$ ), years in current position ( $p < 0.01$ ), practice setting ( $p < 0.05$ ) and the percentage of practitioners' client population on Medicare ( $p < 0.01$ ) and privately insured ( $p < 0.01$ ). Practitioners perceived the quality of care to be lower if their practice included a higher percentage of patients who were uninsured ( $p < 0.01$ ) and those enrolled in Medicaid ( $p < 0.01$ ).

Three-quarters of respondents reported that they could provide high quality care to all their patients. However, 33.4% also indicated that cost concerns influence the degree to which they can provide quality care, and one of four (25.3%) did not feel that they could make clinical decisions without cost pressures. Higher levels of ethics preparedness, ethics confidence, practice autonomy, and physician collegiality were significantly associated with better perceived quality care ( $p < 0.01$ ). (Table 2) Two-thirds of practitioners (65.9%) reported a high level of physician support, reporting that their physician colleagues valued their unique perspective, were a good source of professional stimulation, and provided an important source of personal support. Nonetheless, 31.6% of respondents reported feeling overwhelmed by the needs of their patients, and 40.8% described patient relationships as becoming more adversarial than they used to be. Overall, those respondents who reported higher patient demands (e.g., adversarial patient relationships, patients requesting unnecessary treatments) in their practice also tended to report lower quality care ( $r = -0.42, p < 0.01$ ). Most respondents felt prepared to handle the ethical issues that might arise in their primary care practice (63%); and both ethics preparedness and respondents' degree of ethics confidence was positively associated with perceptions of quality care.

Multiple regression analysis was performed to test the model of the primary independent variables on the views of quality of care. All

**Table 1**

Characteristics of the study subjects ( $N = 1371$ ) and relationship to perceived quality of care (DV).

Characteristics	Mean (SD)	Median (range)	r
Age (years) ( $n = 1351$ )	44.72 (8.97)	46.00 (23.00–70.00)	0.03
Years been a NP/PA ( $n = 1363$ )	10.42 (7.76)	7.00 (1.00–34.00)	0.07**
Years in current position ( $n = 1335$ )	5.81 (5.20)	4.00 (1.00–30.00)	0.09**
% of client health insurance type			
• Medicaid ( $n = 1253$ )	23.28 (23.69)	15.00 (0.00–100.00)	-0.13**
• Medicare ( $n = 1261$ )	25.38 (24.18)	20.00 (0.00–100.00)	0.10**
• Private ( $n = 1266$ )	32.71 (27.45)	25.00 (0.00–100.00)	0.14**
• Uninsured ( $n = 1246$ )	14.20 (19.75)	5.00 (0.00–100.00)	-0.13**
Client in managed care ( $n = 1227$ )	51.19 (32.49)	50.00 (0.00–100.00)	-0.05
	<i>n</i> (%)	Mean (SD) of quality of care	<i>p</i> value
Gender			0.05
• Male	283 (20.6)	36.37 (5.52)	
• Female	1079 (78.7)	35.66 (5.60)	
• Missing	9 (0.7)		
Job title			0.00**
• Nurse practitioner (NP)	737 (53.8)	35.41 (5.60)	
• Physician assistant (PA)	625 (45.6)	36.31 (5.52)	
• Missing	9 (0.7)		
Practice setting <sup>#</sup>			
• Solo	203 (14.8)	35.30 (5.74)	0.17
• Group practice: MD: 2–10	552 (40.3)	36.28 (5.37)	0.01**
• Group practice: MD: >10	118 (8.6)	36.58 (5.84)	0.11
• Hospital-based	258 (18.8)	35.47 (5.65)	0.28
• Other	451 (32.9)	35.46 (5.69)	0.11
Ethnicity			0.29
• Hispanic or Latino	36 (2.6)	36.83 (6.67)	
• Not Hispanic or Latino	1208 (88.1)	35.82 (5.61)	
• Missing	127 (9.3)		
Race			0.80
• White	1216 (88.7)	35.81 (5.51)	
• Non-White	155 (11.3)	35.68 (6.14)	
Education			0.18
• Associate degree	59 (4.3)	35.80 (6.52)	
• Bachelor degree	403 (29.4)	36.16 (5.45)	
• Master degree	805 (58.7)	35.57 (5.55)	
• Doctoral degree	44 (3.2)	36.27 (6.36)	
• Certificate/Other	37 (2.7)	36.84 (4.95)	
• None	11 (0.8)	35.27 (4.47)	
• Missing	12 (0.9)		
Personal income			0.00**
• $\leq$ \$35,000	88 (6.4)	34.00 (5.54)	
• \$35,001–\$50,000	155 (11.3)	35.26 (5.63)	
• \$50,001–\$80,000	883 (64.4)	35.82 (5.50)	
• $>$ \$80,000	206 (15.0)	37.05 (5.62)	
• Missing	39 (2.8)		
Work area			0.68
• Urban	483 (35.2)	35.69 (5.66)	
• Suburban	482 (35.2)	36.00 (5.75)	
• Rural	398 (29.0)	35.74 (5.30)	
• Missing	8 (0.6)		

For personal income, post-hoc analysis indicated that people with income  $>$  \$80,000 reported higher perceived quality of care than the three other categories; people in the \$50,001 to \$80,000 category reported higher perceived quality of care than those in the  $\leq$  \$35,000 category; there was no significant difference between the two lower categories.

\*\* Significant at  $p < 0.01$ .

<sup>#</sup> The practice setting categories are not mutually exclusive. Some respondents checked two practice settings thus the total percentage exceeded 100%.

demographic and practice factors showing significant bivariate associations with quality of care were entered into the model along with the ethics preparedness, ethics confidence, patient care demand, practice autonomy and physician collegiality. The model (Table 3) was highly significant ( $p < 0.001$ ) with the independent variables accounting for 44% of the variance in the view of quality care. The five primary independent variables remain significant after simultaneously controlling for the other demographic and practice factors. Beta values

**Table 2**  
Descriptive statistics of primary variables and associations among them (Pearson *r*) (*N* = 1371).

	Mean (SD)	1	2	3	4	5
1. Perceived quality of care	35.80 (5.58)	1.00				
2. Ethics preparedness	24.13 (4.14)	0.37**	1.00			
3. Ethics confidence	23.23 (4.57)	0.29**	0.57**	1.00		
4. Patient care demand	11.80 (2.81)	−0.42**	−0.27**	−0.22**	1.00	
5. Practice autonomy	16.68 (3.23)	0.53**	0.24**	0.13**	−0.32**	1.00
6. Physician collegiality <sup>‡</sup>	15.93 (3.02)	0.25**	0.19**	0.02	−0.12**	0.13**

\*\* *p* < 0.01.  
<sup>‡</sup> Negatively skewed. This variable was then dummy coded with low and high physician collegiality respectively (less than or equal to 12 = low; 12.1%), greater than 12 = high; 87.9%.

indicate that practice autonomy has the greatest effect on views of quality of care, followed by patient care demand, ethics preparedness, physician collegiality, and ethics confidence.

**6. Discussion and implications**

This is the first study investigating how critical factors, including ethics preparedness ethics confidence, and practice autonomy, impact perceived delivery of quality care by NPs and PAs in primary care practice in the United States. We found that perceived quality of care was positively associated with perceived practice autonomy, ethics preparedness, ethics confidence, and physician collegiality, all factors that could be promoted through education and organizational climate.

Our findings support the importance of ethics education for both advanced nurse practitioners and physician assistants as this type of foundational knowledge and preparation can potentially support team-based models of patient care delivery. Pronovost and Vohr (2010) rightfully argue that working together ultimately enhances patient care; in fact, it is an ethical endeavor that meets the needs of all relevant stakeholders. Affording NPs, PAs, physicians, students, and other health professionals the opportunity to learn together can help to clarify roles and responsibilities, foster mutual respect, and provide skills that cultivate shared decision-making with an awareness of each other's professional values and concerns. Although most NPs and PAs perceived that their role was valued by their physician colleagues, in a similar fashion, interdisciplinary ethics education could enhance the perceived value of NPs and PAs to physicians.

Our data show that practitioners who feel more prepared and more confident to take ethical action perceive that they provide a higher quality of care. Other data have shown the relationship between ethics education and ethics confidence (Grady et al., 2008). In their seminal paper on transforming professional education for a

global world, Frenk et al. (2010) call for a reexamination and redesign of postsecondary educational systems to determine the competencies that promote interdependence among differing professional groups. Our data suggest that ethics education and ethics confidence hold promise as important contributors to the delivery of quality care. Educators must now take the lead in developing innovative curriculum that promotes interprofessional ethics learning and dialogue (Banks et al., 2010) exposing students to the realities of clinical practice and the complexities associated with the patient-provider relationship.

Although the majority of our respondents felt prepared to address ethical issues in practice and felt supported by their physician colleagues, those who were less prepared, felt less autonomous, and sensed less physician support, also perceived the quality of the care they delivered to be lower. This finding requires broader attention to the culture, organization and climate of interdisciplinary practice settings. Our data also suggest a need for more research that specifically focuses on the ethical issues and dilemmas that arise when different disciplines work together within team-based models of care and their impact on patient-related outcomes.

Of note, more than forty percent of our respondents reported that many patients demand potentially unnecessary tests and treatments. With the passage and implementation of the Patient Protection and Affordable Care Act, it is plausible that such demands could increase. Future research should examine whether these consumer directed requests continue to create ethical discord and interfere with providing quality care. It will be important to examine the type and frequency of patient demands and if they differ by type of health insurance (i.e., private, Medicare, Medicaid, uninsured) as well as how these demands influence collaborative practice and quality of care within primary care settings. Importantly, as more patients enter the healthcare system and are in need of primary care providers, the ethical issues that NPs and PAs encounter may vary in intensity and complexity.

**7. Limitations**

Our study is limited by the use of cross-sectional self-reported data that reflect the views of our sample at a particular point in time. Although these data were collected in 2003, many of the healthcare delivery issues and fiscal constraints remain the same. Indeed, practitioners continue to struggle with advocating for insurance coverage for patients who are uninsured and underinsured; and NPs in particular, continue to work within varied state-restricted guidelines that limit their practice autonomy. However, these data will be useful in developing the most appropriate educational and practice models as more NPs and PAs become primary care providers in various settings. Although we recognize that the educational and practice guidelines for NPs and PAs differ, we were not able to make comparisons between the groups based on federal requirements at the time of the study.

**Table 3**  
Multivariate model for views of quality of care.

(Constant)	b	Std. Error	Beta	p value
Gender	−0.09	0.35	−0.01	0.80
Nurse practitioner (vs. PA)	0.68	0.28	0.06	0.02
Years been a NP or PA	−0.02	0.02	−0.03	0.35
Years in current position	0.04	0.03	0.04	0.17
Percent of patients from Medicaid	−0.02	0.01	−0.08	0.00
Percent of patients from Medicare	0.02	0.01	0.06	0.01
Percent of patients from private insurance	0.01	0.01	0.05	0.09
Percent of patients uninsured	−0.00	0.01	−0.01	0.61
Group practice with 2–10 physicians	0.18	0.26	0.02	0.49
Personal income	0.12	0.04	0.07	0.01
Ethics preparedness	0.20	0.04	0.14	0.00
Ethics confidence	0.10	0.04	0.08	0.00
Patient care demand	−0.42	0.05	−0.21	0.00
Practice autonomy	0.66	0.04	0.39	0.00
Physician collegiality high (vs. low)	2.19	0.40	0.13	0.00

Model R = 0.66, R<sup>2</sup> = 0.44, F<sub>15, 1107</sub> = 58.49, *p* < 0.001.

## 8. Conclusion

NPs' and PAs' views on their ethics preparedness, ethics confidence, and degree of physician collegiality, practice autonomy, and patient-related demands are all important indicators of perceived quality care delivery in primary care practice. Educating these providers for the ethical challenges of providing healthcare in a cost constrained environment will require innovative educational models that address healthcare management, economics, leadership, decisional analysis, collaborative practice and teamwork, and critically, ethical reasoning in clinical practice in tandem with their medical counterparts. Ethics education and attention to the importance of an ethical organizational climate should help to prepare future NPs and PAs to better address the ethical challenges they will face as primary care providers consistent with the Patient Affordable Care Act and the increasingly chronically ill and aging population.

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