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# Practice Characteristics of Nurse Practitioners in Mental Health and Psychiatric Settings\*,\*\*\*

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#### ABSTRACT

To explore the practice characteristics of nurse practitioners in mental health and psychiatric settings, descriptive statistics and multivariable logistic regression models were constructed with weighted data from the 2012 National Sample Survey of Nurse Practitioners. The 5.6% of nurse practitioners in mental health and psychiatric settings were less likely to have hospital admitting privileges and more likely to practice without a physician on-site, to have their own billing number, and to have a DEA number. These findings highlight the critical role that nurse practitioners play in the behavioral health workforce.

#### Introduction

Behavioral health provider shortages are acute in many areas, especially providers who can prescribe medications. In addition to providing medical care, nurse practitioners comprise about 2.5% of the licensed behavioral health workforce and play an important role in providing behavioral health screening and treatment services (Delaney, 2017). Nurse practitioners practice in diverse inpatient and ambulatory settings and many provide mental health and substance use disorder screening and treatment.

Advanced practice nursing, which marked its 50th anniversary in 2015, requires at least a master's degree and licensure or certification by a professional association. About 8% of registered nurses qualify as one of the four types of advanced practice nurses: nurse practitioners, certified nurse midwives, nurse anesthetists, and clinical nurse specialists. This paper focuses on the nurse practitioner workforce, which has doubled in the past 10 years to over 205,000 licensed nurse practitioners in the United States (American Association of Nurse Practitioners, 2015). An estimated 127,000 of these nurse practitioners are currently providing patient care (The Health Resources and Services Administration, n.d.).

Prescription medications are a key part of mental health and substance use disorder treatment for many conditions. Prescribing scope of practice rules vary by state, but advanced practice nurses are often the only professionals other than psychiatrists with prescribing authority (Ghosh, Sterns, Drew, & Hamera, 2011; Hanrahan & Hartley, 2008). Previous research shows that the number of psychiatric NPs per 10,000

residents is higher in urban areas, in the Northeast, and in counties with lower poverty rates (Delaney, 2017).

With a national shortage of mental health and substance use disorder treatment providers, it is critical to understand the role of nurse practitioners in behavioral health specialties and settings. The purpose of this paper is to provide a descriptive profile of nurse practitioners in mental health and psychiatric settings. The first research question is: what are the practice characteristics of nurse practitioners in mental health and psychiatric settings? The second research question is: in adjusted analysis, are practicing with an on-site physician, having a billing number, having a DEA number, and hospital admitting privileges associated with practicing in a mental health and psychiatric setting, among nurse practitioners in clinical practice?

These variables were chosen to reflect the practice characteristics of nurse practitioners, which is an important topic given workforce shortages of behavioral health practitioners. A recent study of visits with nurse practitioners in community health centers found that in states that allowed nurse practitioners to practice more independently, a higher proportion of total visits for mental health were with nurse practitioners (versus physicians). The level of independent practice allowed in the state was not associated with the share of visits with nurse practitioners for physical health problems (Yang, Trinkoff, Zito, et al., 2017). There is a dearth of research into correlates of other practice characteristics, so this paper fills a gap in the literature.

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#### Methods

#### Sample

The 2012 National Sample Survey of Nurse Practitioners was fielded by mail to a nationally representative sample from March through July of 2012 (see the Online supplement for the survey instrument). The survey was supported by the Health Resources and Services Administration (HRSA), and the response rate was 60.1% (12,923 responses). This study includes the 9979 NPs in clinical practice. Further information about the survey data collection methodology is available from HRSA (Pearson, Shelton, Shade, Bonham, & Fowler, 2017). In addition to information on demographics, specialty, and practice setting, the survey collected information on services provided, billing arrangements and how often a physician is onsite, hospital admitting privileges, and EHR adoption.

#### Data analysis

The data were weighted using a jackknife method due to the complex sampling methodology. Descriptive statistics of the characteristics and practice settings of nurse practitioners in clinical practice were calculated. Multivariable logistic regression models were constructed to examine the adjusted correlation between having a behavioral health specialty or practicing in a behavioral health setting and four different dependent variables: practicing with an on-site physician, having a billing number, having a DEA number, and hospital admitting privileges. These dependent variables were examined because these characteristics of clinical practice might represent how independently these nurse practitioners are able to practice. Covariates were included in the models if they were hypothesized to be associated with the dependent variables. Models were checked for overall significance and multicollinearity.

Analyses were performed using Stata version 11. This study uses the restricted version of the dataset, not the public use file, and analyses were conducted in the National Center for Health Statistics data center in Washington, D.C. Institutional Review Board exemption was not needed since the data were de-identified, but the proposal for this analysis was reviewed and approved by the National Center for Health Statistics in the Centers for Disease Control and Prevention (CDC).

#### Variables

This study only includes individuals who responded "NP in clinical practice" to the following question: "Describe your principal position."

The practice setting was determined from this question: "In what type of setting do you work in your principal position?" The setting was coded as ambulatory if they answered one of the settings summarized a "ambulatory settings" ("private physician office/practice," "private NP office/practice," "nurse managed clinic," "retail based clinic," "urgent care clinic," "ambulatory surgery center," or "federal clinic (FQHC, VA, military, NIH, IHS)." The setting was coded as hospital if they selected one of the "hospital settings:" "hospital inpatient unit," "hospital outpatient unit (not an ED)", "hospital emergency department," of "hospital-other." If they answered "mental health center," they were coded as such. A dichotomous variable equal to one was created if they had hospital admitting privileges, as determined by the question "Do you have hospital admitting privileges?"

The specialty of each respondent was coded using the following question: "Check the one term below that best describes the specialty of the practice/facility in which you work for your main NP position." A dichotomous variable was created equal to one if they endorsed "psychiatry/mental health" as the answer. A dichotomous variable was created if they endorsed one of the "Primary Care Specialties" in the survey. Similarly, variables were created for primary care internal medicine subspecialties, surgical specialties, and "other" specialties.

Information on specialty and setting was combined to create a dichotomous variable indicating whether each individual worked in mental health and psychiatric settings, defined by those who indicated that "psychiatry/mental health" as the specialty of their practice/facility and/or "mental health center" was selected as their practice setting. This variable does not reflect whether the individual is certified as a "psych/mental health" nurse practitioner; instead, the focus of this paper is the current setting that each nurse practitioner is employed in.

A series of dichotomous variables was created to capture the percentage of time that each nurse practitioner practices with an on-site physician, according to this question: "How often is a physician present on site to discuss patient problems as they occur in your main NP position?" The answers to the question were each coded into a dichotomous variable: "0% of the time," "1%–25% of the time," "26%–50% of the time," "51%–75% of the time," "and "76%–100% of the time."

Use of an electronic health record was also captured if they answered yes to the following question: "In your principal position do you <u>use</u> on electronic medical record (EMR) system? Do not include billing record systems."

The number of years in practice, a continuous variable, was calculated from the following survey question: "In what year did you complete your <u>initial</u> U.S. licensure as an <u>RN</u>?" A dichotomous variable equal to one was created if the individual planned to retire within ten years, according to their response to the question "Approximately when do you plan to retire from nursing and NP work?"

A series of dichotomous variables was created for practice characteristics. Independent billing was examined using the survey question "Do you bill under your own NPI number?" The question "Thinking about all of your NP positions, do you have a panel of patients that you manage, where you are the primary provider?" was used to create a variable to indicate that they had their own panel of patients. A variable was created equal to one if they responded "yes" to the question on having a DEA number: "Do you currently have a personal drug enforcement agency (DEA) number?"

#### Results

Table 1 shows descriptive statistics for nurse practitioners who were in clinical practice in 2012. These individuals were predominantly female (92.7%), and the majority (62.2%) planned to retire within ten years. Most nurse practitioners practiced in ambulatory settings, and 31.2% practiced in a hospital setting. One in five nurse practitioners in clinical practice (20.8%) had hospital admitting privileges. < 2% (1.24%) practiced in a community mental health center.

Primary care was the most common specialty (48.3%), followed by internal medicine (16.6%), surgical (8.6%), and psychiatric specialties (5.6%). The majority of nurse practitioners (56.3%) reported that they practiced with physicians on-site for most of the time (76% of the time or more). Ten percent of nurse practitioners practiced in settings without on-site physicians. One in three had their own billing numbers (35.8%). Almost half reported that they were the primary provider for a panel of patients (45.7%). Three in four had a DEA number (76.0%). Three in four nurse practitioners used an electronic health record (76.0%).

#### Practice characteristics

The remainder of this paper focuses on the 5.6% of nurse practitioners who practice in mental health and psychiatric settings. Multivariable analysis shows that nurse practitioners in mental health and psychiatric settings had higher odds of practicing without an onsite physician, compared with nurse practitioners in other settings (see Table 2). Nurse practitioners in mental health and psychiatric settings had almost twice the odds of practicing without an on-site physician (OR = 1.9). Those with electronic health records and hospital admitting privileges had lower odds of practicing without an on-site

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