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Primary Care Expectations in an Underserved Population

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Abstract

The purpose of this study was to examine the association between insurance status, primary care utilization and expectations of an underserved population. Two hundred thirty men and women participated. Having Medicaid increased the use of primary care services in a population that would otherwise be uninsured (p=0.01). Health status was not related to utilization of care. New practice models, such as nurse-managed health clinics, are well suited to fill the gaps of the primary care infrastructure in underserved urban areas. Nurse practitioners are in unique positions to lead and manage these new emerging practice models.

Keywords: Primary care; Population; Nurse practitioner

Introduction

Starfield et al. [1], in a widely cited article, define primary care thusly: a patient is receiving primary care when they have a usual source of care and when this source: is the first contact for care of new problems; provides comprehensive care for most health problems; provides long-term person-focused care and coordinates care across a range of providers. Studies have found that the provider of the primary care is not significant (i.e. doctors or nurse practitioners); access to a usual source of primary care is the crucial determinant of patient satisfaction [2].

In the United States, having insurance and a regular source of care are considered 'enabling factors' in that they facilitate the timely use of health care services [3]. Insurance status is correlated with income, education level and race/ethnicity [4]. In the 2011 National Health Interview survey, the percentage of adults who reported having had an annual visit with a primary care provider was 80% [5]. Less education and lower income were associated with a decreased likelihood of an annual visit.

Appropriate use of primary care can be expected to improve health outcomes by preventing sickness, managing chronic illnesses, and eliminating disparities [6]. Likewise, appropriate use can be cost effective as it can reduce the need for specialist care and emergency department (ED) visits [1]. The major provisions of the Patient Protection and Affordable Care Act of 2010 (ACA) were implemented in 2014, resulting in a large increase in the number of Americans receiving Medicaid in states that accepted Medicaid expansion. More than 68 million residents of the U.S. were Medicaid beneficiaries for all or part of 2014 [7]. These newly insured individuals can be expected to benefit through the improved access to primary care that should be afforded by their status as Medicaid recipients. However geography can be as significant as demographics in determining access to primary care. Fifty five million Americans live in communities in the United States categorized as Primary Care Health Professional Shortage Areas [2].

As the number of newly insured increase, these individuals may be confronted by inadequate primary care capacity, particularly in communities that are already medically underserved [8]. According to the Association of American Medical Colleges, many of the newly insured will face long waits to see a primary care provider in their communities, or they will have to travel for care [9].

In addition to access to care, the quality of the available primary care must be considered. Shi, in a comprehensive review of primary care literature, described the services provided at a primary care visit as including preventive, diagnostic and therapeutic services, health education and counseling, and minor surgery [10]. Questions have been raised about the frequency and appropriateness of certain screening tests, such as mammograms and prostate specific antigen (PSA) blood tests, but there is little disagreement about the need to monitor blood pressure or weight to forestall the development of chronic illnesses such as diabetes and coronary disease.

The purpose of this study was to examine the association between insurance status, individual level factors, and utilization of primary care services for individuals living in an underserved, urban area. The problem addressed concerns the mismatch between the factors (such as advanced age and perceived health status) that create the need for primary care services and the factors (such as insurance status) that determine the actual use of services. In addition to the consideration of access, this study addressed the expectations regarding what services would be provided at the typical primary care visit. The answers to this question reflect the quality and comprehensiveness of primary care services typically received in this low income and underserved community.

Methods

Sample

This cross sectional study was conducted over six months in 2013 and took place in Camden, New Jersey, a small city with a high poverty rate and a population that is primarily African American and Hispanic. All individuals, 18 years and older, attending a

neighborhood street fair or visiting a free lunch program were invited to participate in the study. Men and women who expressed interest in participating were given an informed consent form. Following the return of a signed consent, participants were given the surveys. They received one dollar for their effort. The researchers were available to answer questions and assist participants in completing the survey. This study was approved by the Institutional Review Board.

Measures

The 12-item primary care survey was developed by the researchers and consisted of fill in the blank and multiple choice questions. The primary outcome measure was binary: whether or not an individual reported a routine well visit within the past two years. A routine well visit was defined as a visit to a physician or nurse practitioner for a check-up not related to an acute illness. Subjects were also asked what services they expected would be provided at the visit. Demographics questions had been validated in a previous study in this community (authors of this manuscript so citation omitted). The Flesch Kincaid Grade Level for the survey was 2.4. The informed consent form and survey were available in Spanish and English.

Data analysis

Data were analyzed with StataMP 12 [11]. Descriptive statistics were generated; bivariate analyses using t-tests and chi squares were performed to find associations between covariates and the likelihood of (1) having had a well visit within the past two years; and (2) the number of primary care visits in the past year; and (3) expectations of services received at a routine well visit. Logistic regression was used to identify a possible association between insurance status, type of insurance, individual level factors and the binary "routine well visit in the past two years." Covariates found to have a significant association with well visit in bivariate analyses were entered into the logistic regression model. The area under the receiver operating characteristic (ROC) curve (AUC) was used to evaluate the ability of this model to discriminate between known groups.

Results

The sample of 144 men and 83 women had a mean age of 47. Fifty percent of the sample was African American; 32% self-reported as Hispanic; 15% White; and 3% mixed race. Fifty-two percent of the subjects were insured (primarily Medicaid), and 76% reported having had a routine well visit within the past two years (Table 1).

Age[a]		
20-30	18	8.6
31-40	43	20.6
41-50	66	31.6
51-60	63	30.1
61-70	13	6.2
71+	6	2.9
Insurance Status		
Uninsured[a]	109	47.8
African American	44	19.3
Hispanic	38	16.7
White	22	9.6
Mixed Race	5	2.2
Insured[a]	119	52.2
Private Insurance	9	7.6
Medicare	7	5.9
Medicaid	84	70.6
Health Status[a]		
Excellent	32	14
Good	99	43.4
Fair	79	34.5
Poor	19	8.3

Table 1: Characteristics of survey respondents, a: missing data.

Insured individuals were more likely to have had a routine visit within the past two years (p=0.01) (Table 2). Insurance status was significantly associated with race/ethnicity (p=0.009) with African Americans more likely to be insured (67.5% as compared to 51% of Hispanics and 50% of Whites). Age was significantly associated with race/ethnicity as well; the African American sample was significantly older than the White and Hispanic samples (p=0.008). Age and insurance were significantly associated (p<0.00); individuals in the 50 to 60 year old group were most likely to be insured. Type of insurance was also significantly associated with age; the 40 to 50 year old group included more Medicaid recipients, and individuals younger than 40 were more likely to be uninsured (p<0.00). Forty to 50 year olds were more likely to have had a routine visit (p=0.02). Race and ethnicity were not related to having had a routine visit.

Insurance Status and Routine Well Visit (n=230)					
Variable	**Routine Well Visit**		**No Routine Well Visit**		**p value**
	n	**%**	**n**	**%**	
Insurance Status[a]					
Uninsured	64	28.1	45	19.7	
Insured[a]	108	47.4	11	4.8	<0.00
Private insurance	8	6.7	1	0.8	
Medicaid	75	63	9	7.6	
Medicare	6	5	1	0.8	<0.00

Table 2: Insurance status and routine well visit, a=missing data.

More than half of the participants (64%) reported having had between one and three visits with a health care provider in the past year (not including visits to the ED). Twenty-three percent reported more than seven visits, and 8% reported no visits. Insured patients had significantly more provider visits (p=0.04) with Medicaid patients reporting the highest number of visits in the past year (p=0.007).

African Americans were more likely to have had more than four visits in the last year, and White individuals were more likely to have had between one and three visits (p<0.00); Hispanics had the least number of visits (p=0.04). Number of visits was not significantly associated with age (although 40 to 50 years olds reported more visits than other age groups). Gender was not significantly related to the number of visits.

Perceived health status and age were not associated, nor was health status related to having had a routine visit or with the number of visits. Most subjects reported their health to be fair (34.5 %) or good (43.2%). Health status was significantly associated with insurance status; the participants who reported poor health status were less likely to be insured (p=0.03). Race was significantly associated with health status: 63% of African Americans considered their health to be good or excellent as compared to 52% of Hispanics and 46% of White individuals (p=0.011). Thirty nine percent of Hispanics rated their health as fair or poor.

Expectations for services that would be included in a primary care visit were not related to the report of a routine visit in the past two years. Associations were found regarding age, gender and health status: older participants were more likely to expect that they would be advised to have further tests performed (p=0.014), men were more likely to expect to have blood drawn at the visit (p=0.006), and individuals who described their health status as good, fair or poor were more likely than those who reported excellent health to expect to have their blood pressure measured (p=0.002), to have the provider listen to their breathing (p=0.047), and to have blood drawn for testing (p=0.034). Across all subgroups, participants were more likely to report that they expected to have their blood pressure checked and least likely to expect to have further testing ordered.

Variables were added in a stepwise fashion to a logistic regression model to consider the association between insurance, individual level variables, and "routine well visit in the past two years." The final model (Table 3) accounted for 23% of the variability concerning whether or not an individual had a primary care visit in the past two years, with an AUC of 0.81. Gender and insurance status were the only significant covariates in this model. While men were 0.35 times as likely as women to have had a visit (p=0.026, CI=0.14-0.88), having insurance increased the odds that a participant would have had a primary care visit 8.1 times (p<0.000, CI=3.07–21.34).

Multivariate Logistic Model Predicting Probability of Having Had a Primary Care Visit within the Last Two Years			
Variable	**Odds Ratio**	**p Value**	**95% CI**
Insurance	8.1	0.000[a]	3.07 21.34
Gender	0.35	0.026[a]	0.14 0.88
Health Status:			
Good	1.6	0.483	0.42 6.42
Fair	1.3	0.741	0.31 5.23
Poor	1.03	0.975	0.16 6.70
Age	1.04	0.059	1.0 1.08
Race: African American	1.31	0.662	0.39 4.4
Ethnicity	1.5	0.523	0.45 4.90

Table 3: Multivariate logistic model predicting probability of having had a primary care visit within the last two years, R^2=0.23, The estimate of the area under the curve was 0.81, Reference category for health status is excellent; reference category for race is White, [a]p <0.05.

Discussion

In this study the authors evaluated the association between insurance, individual level factors, and use of routine primary care services, as well as expectations for a routine well visit. Having insurance increases an individual's likelihood to utilize primary care [1]. In this sample, in which just over half the respondents were insured, insurance was a significant factor in the use of health care and in the number of health care visits reported. Consistent with findings from Baicker and colleagues, Medicaid appears to increase the use of primary care services in a population that would otherwise be uninsured [12]. No consistent association was found between perceived health status and use of primary care. In this low income population, it is likely that decisions about going for a routine visit are more a function of insurance status than health status, which implies that individuals with poor health may not be receiving needed services. Van der Wees et al. [13] found that in the years since Massachusetts instituted health reform in 2006, effectively insuring nearly 98% of the state's residents over time, low income residents reported improved health status when compared to low income residents of neighboring states. They found as well that use of preventive health services, such as a Pap test, colonoscopy and cholesterol test, increased when residents became insured. The authors suggest that it is possible that the receipt of health insurance in and of itself may improve perceived health status, a suggestion which was also noted after the randomized expansion of Medicaid in Oregon [14]. With limited data available since the recent implementation of the Affordable Care Act, similar results have been found. In particular, from 2013 to 2014, Kentucky made a major, state-wide effort to register low income residents for the expanded Medicaid program and insurance policies available on the state exchange, an effort that resulted in an increase of 37% in the use of preventive services including: a 30% increase in mammography, a 3% increase in Pap tests, a 16% increase in colonoscopy, and a 37% increase in adult dental visits [15]. Furthermore recipients of the newly expanded Medicaid benefit sought health care at a 55% higher rate than a control group of existing Medicaid enrollees [16]. Services being sought were those for treatment of chronic conditions like high blood pressure, diabetes, and depression [16].

Gender was also found to be predictive of having had a primary care visit, with women more likely to have a visit within the past two years than men. This is consistent with national findings and across age groups [17,18]. It is possible that maintaining one's health is a greater priority for women or that men are less likely to make recommended lifestyle changes and thus put off a provider's visit during which they might receive such advice. A recent national study conducted by the American Association of Family Physicians found that men were reluctant to see their primary care provider on an annual basis, although the likelihood of an annual visit was greater for older men.

According to the IOM, "racial and ethnic disparities in health care occur in the context of broader historic and contemporary social and economic inequality" (p123). To this point, Hispanics have been noted to have lower income levels and are less likely to be insured; these

factors greatly impede this population's ability to access primary care. The Hispanic population has been found to have the highest uninsured rate in the U.S. [19]. In this study a high proportion of the Hispanic participants were uninsured. Hispanic individuals were least likely to have reported a well visit and reported the lowest number of visits per year, which is consistent with findings from other studies of Hispanic populations [20,21]. The majority of the White non-Hispanic population in this study was uninsured. The average age of the White participants was also younger than the African American and Hispanic populations. Given that this study was conducted in an urban area in which African American and Hispanic populations comprise 92.5% of the population and that the White non-Hispanic subjects were primarily recruited at a free lunch service, it is not surprising that this sample was not reflective of the demographics of the White population in the greater county wide area in which 91.6% of the White population has health insurance [22].

While the likelihood of having a routine visit was not related to health status, it did appear that those individuals who reported less than excellent health status were more likely to expect more comprehensive services to be included in a primary care appointment. Health status is an important indicator of health care need, and one in seven adults in the US report that their health is fair or poor [23]. Fair or poor health status has been found to be more commonly reported by racial and ethnic minority individuals, Medicaid recipients and the uninsured, and adults with self-reported fair or poor health status have been found to have a significantly higher risk of mortality compared to those who report their health as excellent [24]. Access to comprehensive primary care is associated with decreased racial and ethnic disparities in self-reported health status, especially in low income individuals [25]. In this study insured participants were more likely to report an excellent or good health status, which is consistent with the effect of insurance on perceived health status. Participants with good to poor health status were more likely to expect more comprehensive services to be included in a primary care visit, which likely reflects the fact that their health status results in the need for more comprehensive diagnostic services to be included in a typical visit. An interesting finding was that across all categories of health status, and regardless of insurance status, participants were least likely to expect to be told that additional testing was needed. This may be consistent with a decreased utilization of preventive care, which is often found in low income populations. The 2010 Biennial Health Insurance Survey found that only 36% of adults with incomes lower than 200% of the poverty level received all the preventive screenings recommended for their age, as compared to 59% of adults with incomes above 200% of poverty [5].

Limitations

A cross sectional study, by design, results in limitations, which is to say, causality of findings cannot be determined. Additionally, other limitations must be recognized. The authors did not ask participants for their income; rather, it was assumed that participation in a street fair (in a city with high crime and poverty rates) or waiting in line to obtain a free lunch service reflected the income level of the participants. Another limitation has to do with the phrase 'routine well visit.' Some participants asked for clarification related to the definition of well visit. The authors cannot be sure that respondents did not consider any visit to a health care provider to be considered a routine well visit. In a similar survey, Keller et al. [26] chose instead to refer to such a visit as 'visits with providers without being ill,' although they suggest that respondents might not make the distinction that this does not include visits with injuries. Finally this study asked participants to self-report whether they had a routine visit in the past two years and how many visits they had had in the past year. Short and colleagues found that while self-reported utilization is a measure that is frequently incorporated in health services research, reports of yearly doctor's visits had only a 30% agreement with claims records while reports of emergency room use had a 90% concordance [27]. More frequent doctor's visits (monthly) were found to have a much higher agreement (75%) with claims data [27].

Policy Implications

In 2006, Massachusetts passed health care legislation, known as Chapter 58, which was very similar to, and to some degree provided the blueprint for, the ACA [28]. By 2010, only 1.9% of Massachusetts' residents remained uninsured, however, primary care capacity did not grow at the same pace [29]. Although 25% of a sample of 3,041 nonelderly adult respondents reported that they continued to use safety net facilities (EDs, community health centers) because they couldn't get appointments elsewhere, 90% of Massachusetts residents surveyed in 2009 did report having a usual source of healthcare [30]. If the Massachusetts experience can be instructive, agencies such as community health centers in underserved areas will continue to provide care for these newly insured patients, yet with limited federal dollars and an inadequate supply of primary care providers [28]. The inadequacy of primary care services in low income communities will likely result in an increased number of non-emergent ED visits for newly insured individuals [1]. Indeed in Oregon, following Medicaid expansion, ED visits for new Medicaid enrollees increased 40% [31].

To meet the needs of the newly insured and those who remain uninsured after implementation of the ACA, already existing practice models can expand their services or new practice models can be developed. Primary care clinics or medical homes may provide extended hours, same day appointments, nurse advice lines, continuity with one provider, and other services not currently provided by local community health centers [32]. Newer practice models such as the nurse managed health clinic (NMHC) also present an alternative to traditional community-based primary care.

The nurse managed health clinic, as defined by the ACA, is a nurse practice arrangement that is managed by advanced practice nurses and provides primary care or wellness services to underserved or vulnerable populations. These clinics must be associated with an educational institution, a federally qualified health center, or an independent nonprofit health or social services agency. As of 2013 there were 250 NMHC's across the U.S. [33].

Barkauskas and colleagues [33] found that NMHC's had a good to very good quality of care, and that NMHCs compared favorably with national quality benchmarks. In addition to providing high quality care, these facilities located in underserved areas serve as critical access points for populations that otherwise may not have access to care. Almost all NMHC's also function as training sites for students in nursing and other health care disciplines, thus helping the profession to meet the educational goals outlined in the Institute of Medicine's 2010 report on the Future of Nursing [34].

Nurse Practitioner Role

The education of nurse practitioners (NPs) prepares them to provide a range of primary care services, and scope of practice laws allow for

them to do so independently in many states. As of 2012, scope of practice laws in 18 states and the District of Columbia allowed NPs to independently diagnose and treat patients and prescribe medications; 32 states required physician oversight for diagnosis and treatment, or prescription writing, or both [2]. A shortage of primary care physicians by 2025 has been projected, which is further complicated by an uneven distribution of physicians particularly in already underserved communities such as inner cities and rural areas [35]. A potential solution that has been proposed to alleviate the predicted shortage of primary care physicians in the near future would call for the expanded state scope of practice laws to allow NPs to provide a wider range of preventive and acute health services throughout the U.S. [2].

Many nurse practitioner programs have now transitioned to doctor of nursing practice (DNP) programs offering additional courses and result in more advanced skills for NPs. With these additional skills, primary care NPs are in an ideal position to provide comprehensive patient centered care. The nurse managed health clinic serves as the model that is most likely to utilize advanced practice nurses to their full capacity while providing cost effective and high quality care [36-38].

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