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**CHARACTERISTICS AND MOTIVATIONS OF RURAL COMPARED TO URBAN PRIMARY
PHYSICIANS AND NURSE PRACTITIONERS IN NEW MEXICO**

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ABSTRACT

Introduction: While 20% of Americans live in rural areas, less than 10% of the nations' physicians practice there. In New Mexico, 60% of the population lives in rural communities although only 40% of state's health care workforce can be found there. Federal and state governments, medical schools, and private foundations have all studied and attempted to find ways to train, recruit, and retain more primary care clinicians to rural areas. Many rural recruitment programs are predicated upon older research and investigations involving medical students and physicians from earlier generations. This study attempts to update and determine if there are new or overlooked factors that draw providers to primary care in rural communities.

Methods: Surveys were sent to 600 primary care physicians and nurse practitioners over the course of Spring and Summer, 2007. Respondents were asked a series of open-ended questions along with rating scaled items about factors and characteristics that drew them to practice in their chosen community. Respondents samples were stratified into rural versus urban and physician versus nurse practitioners. Analysis was aimed at determining significant differences between groups using ANOVA, correlations, and contingency table analysis.

Results: As expected, rural physicians and nurse practitioners showed different profiles of motivations and characteristics compared to urban providers, and physicians and nurse practitioners showed somewhat different profiles, although these differences ranged from moderate large to small in magnitude. We replicated previous findings that show that providers are more likely to practice in a rural areas if been born, raised, or trained in a rural area.

Conclusions: This study supports earlier determinations that previous residence or training in rural milieu is associated with later practice in such areas. Modest differences in factors reported by rural compared to urban providers to influence their decisions to select their current practice communities may enable additional insight into provider employment decisions that may enhance the ability to recruit rural providers. However, findings may be unique to New Mexico, given that this state is an underserved state in its entirety.

INTRODUCTION

Health care disparities affect rural populations significantly. Access to care stands as a major pathway to wellness. The current maldistribution of physicians and other primary care providers into urban over rural communities lies at the heart of this discussion. Multiple studies and programs attempt to address recruiting and retaining new caregivers to rural areas. However, most studies focus only on the upbringing and training of students and residents and overlook other characteristics as well as overt motivations of clinicians related to the practice locale. The current literature is predicated upon studies of practitioners who were trained predominately before 1985. With more awareness of health disparities between urban and rural consumers and solutions implemented to mitigate them, clinicians in current practice may have chosen to work where they do for very different reasons than their predecessors.

Despite the fact one-fifth of Americans live in rural areas, less than 10% of the nations' physicians practice there.^{1,2,3} This fact is especially significant in New Mexico given 60% of the population lives in rural areas while only 40% of the health care workforce practices there.⁴ Studies have noted that worldwide, rural doctors in industrialized nations work longer hours, have patients of lower socioeconomic status, and rely upon public health subsidies for remuneration more than their urban counterparts.^{1,5} The shortage of health practitioners serving nonmetropolitan areas continues to grow. In fact, fewer than 4% of recent medical school graduates intend to practice in a rural or small-town site.²

Over the years some solutions have been suggested and implemented. The creation of the family medicine specialty in the 1970s was partially intended to curb the chronic shortage of US rural doctors.⁷ The thought that family physicians would be more likely to settle and practice in rural settings has since been borne out. A higher percentage of family medicine residents than other types of physicians go on to practice in nonurban communities.⁸ In order to attract more health services to underserved (primarily rural) areas, Congress created the National Health Service Corps (NHSC) in 1971. Federal designation as a Health Professional Shortage

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Area (HPSA) qualifies a community for federal grant dollars, enhancement of federal insurance reimbursements, and placement of NHSC practitioners. Incentives for physicians and other health care workers to participate in these programs include scholarships and loan repayment in exchange for a service commitment in an HPSA.¹ Although in the short term the NHSC and similar programs bring physicians to rural practice, keeping these doctors in the community beyond their practice commitment remains challenging.⁸

While the federal government began to address the critical shortage and maldistribution of physicians, some medical schools also implemented their own programs. In 1974, Jefferson Medical College in Philadelphia initiated a specialized educational project that combined selective admissions policy with a focused curriculum to increase the number of family physicians in rural and underserved areas.⁹ Over time, the Physician Shortage Area Program (PSAP) has been highly effective in training and retaining physicians to serve rural communities in Pennsylvania. In fact trainees from this program account for 21% of the rural physicians in the state despite representing only 1% of doctors trained there. Additionally, over 87% of PSAP participants remained practicing in rural sites five to ten years after graduation.³ As of 1999, 54% of graduates from the West Virginia School of Osteopathic Medicine specialized in family practice. 17% of graduates from 1989-1994 practiced in rural areas of the state compared to only 7% of graduates from the state's two allopathic medical schools. This program's mission focuses clearly on family practice and primary care with an emphasis on community service over research to meet its stated mission of educating physicians for rural communities.¹⁰ Similarly, the Australian government in addressing its own inequitable distribution of physicians has financially supported medical schools and medical students with rural backgrounds to effectively increase the number of physicians practicing in nonurban settings.¹¹

Another solution to the rural health care provider shortage lies in the use of nurse practitioners (NPs) as primary care providers. Martin states, "NPs are generally well matched for the resources and needs of rural and underserved areas and many choose to practice

there.”¹³ In a study comparing rural NPs to urban NPs, Martin found that rural NPs are more likely to practice primary care, see a higher number of patients per week, and served the low income, uninsured and underserved.¹³ These practice characteristics of rural NPs are very similar to those of rural physicians.^{1,5} A recent study of nurse practitioners in Arkansas demonstrated that rural-employed NPs had didactic exposure to rural practice opportunities and engaged in rural practicums while in graduate nursing educations.¹⁴ This finding reinforces similar outcomes regarding physician training. That is, health care education that integrates a rural health component has more graduates who go on to practice in rural areas.⁸ It appears that motivators toward rural practice may be shared by clinicians from different training backgrounds.

Tremendous study and effort have gone into determining predictors that assess entrance to and retention in rural practice. Factors such as medical student upbringing in a rural community, family medicine specialty, and undergraduate or postgraduate medical training in a rural community have all been linked to likelihood of practice in a rural setting.^{2,3,4,8,15,16} Many medical schools in states with a high number of citizens living in rural areas preferentially recruit and admit students from that state and from rural communities, in particular, in order to reduce the shortage of rural medical practitioners. Current admissions policies at the University of New Mexico (UNM) School of Medicine give some preference to New Mexico residents since evidence shows recruitment of applicants with a rural background tends to increase later recruitment to rural practice.⁸ In the UNM Health Science Center’s Twenty Year Vision, one programmatic goal is to “advance innovative plans to increase University of New Mexico School of Medicine class size to address the statewide physician shortages”.¹⁷ The newly created BA/MD program, which will increase class enrollment to 100, pushes back recruitment to the high school level. The thought process is that the earlier students are recruited to service, the more likely it is they will remain in the state.

The vast majority of the previously cited programs and studies look at factors that affect *student* choice toward practice area. The dearth of studies that look specifically at primary care providers currently practicing in rural areas stands as a glaring oversight in understanding how to train and recruit to the underserved, nonurban setting. The current literature that does look specifically at practitioners rather than students is predicated upon studies of clinicians who were trained predominately before 1985. With changes in primary care curriculum and intensified interest in training rural clinicians, along with attrition due to retirement, the newer generation of clinicians may well be motivated by factors that have not been investigated to this point. For example, particular characteristics of rural communities, such as community cohesiveness, isolation from urban areas, quality of community life, and other features that distinguish rural from non-rural areas may well be factors that attract providers to smaller communities in New Mexico. Undoubtedly, certain features of urban health care and living are likely to attract other types of providers to areas such as the Albuquerque metropolitan area, Santa Fe, and Las Cruces. Access to cultural and entertainment venues, availability of educational resources, greater employment opportunities for spouses or partners, and so on, may appeal more strongly to certain providers. This study asks about and explores those factors, experiences, and underlying motivators that drew current rural health care providers to the communities they serve, whether rural or urban. We ask about specific characteristics and motivators of both physicians and nurse practitioners providing primary care to communities in New Mexico. By surveying clinicians in current practice, we hope to determine which factors may predict or draw primary care practitioners to rural versus urban areas.

METHODOLOGY

Participant Population and Study Rationale

This project was designed to examine motivators and characteristics of primary care providers working in the state of New Mexico to identify differences between rural versus urban clinicians. Given the broader scope of practice and prescriptive power afforded nurse

practitioners within the state, we decided to include nurse practitioners along with primary care physicians. However, due to the limited resources available for the study, we elected not to include physician assistants in this preliminary study. We included two different groups of providers to test the generalizability of our findings. We posited the following questions:

1. Do rural physicians and nurse practitioners in New Mexico have characteristics besides rural upbringing and/or family medicine training in a rural milieu that distinguish them from urban physicians and nurse practitioners?
2. Do rural physicians and nurse practitioners in New Mexico have reasons or motivations for practicing in a rural milieu that distinguish them from urban physicians and nurse practitioners?

We determined that we would include only primary care providers who had practiced in their current practice community at least half time for at least the previous 12 months. This was done to be sure that we only surveyed providers who had some meaningful level of practice experience in their current communities and as primary care providers.

Survey Development

The primary data collection instrument was a 70-item questionnaire based upon previous research that examined characteristics of and motivators that may prompt clinicians to practice in rural areas in contrast to urban areas. In addition, the present investigators added numerous items that do not appear in the published literature on this topic that were conceived as potential characteristics or motivators that might predict rural vs. urban employment. The questionnaire was fully drafted initially by the student researcher under the supervision of the research mentor and was iteratively revised several times over a few months. The survey questions consisted of a combination of rating scaled items and open-ended questions. The survey underwent several additional revisions after review by two consulting researchers and further revisions after piloting with a rural physician and nurse practitioner.

Survey Questions

The survey remained identical for physicians and nurse practitioners, although questions 11, 12, and 26 were reworded slightly changing “nursing/NP training” to “residency training” and “nursing school” to “medical school” as appropriate for clinician type. The questionnaire focused on a wide range of background characteristics beyond the standard few “demographic” characteristics usually asked about in surveys, training milieu, and a variety of factors that may have influenced practitioner decisions toward practice community. It was designed to take less than 10 minutes to complete in order to minimize respondent burden and to maximize response rate.

The first six questions asked for age, gender, ethnicity, marital status, family size. Training milieu questions asked about undergraduate and graduate/professional degrees, universities attended, time in training and research participation, community service, and rural rotation participation while in health care training. Also included were questions about occupation and education level of spouses and parents, along with queries about time spent abroad and in rural areas. We also asked clinicians to indicate the main reasons that led to their decision to become a practitioner, affording respondents the opportunity to evaluate and express their motivations for becoming clinicians in their own words.

The survey asked with 7-point rating scales (from 1=“not at all” to 7=“very much”) how much 24 factors influenced respondent decisions to come to their current practice community. In addition, the survey asked with the same 7-point rating scales how much 12 factors may have drawn them to their current practice community itself. Practice characteristics such as access to adequate resources, ability to care for those with or without insurance, and control over time management issues were among the major influences examined. Community factors such as safety, cultural and outdoor activities, and identification with the community and/or its members were part of the 12 factor *draw to practice community* section. Respondents were give another open-ended question to describe any factors that drew them to the community or practice that

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had not been addressed in the preceding scaled questions. The final segment of the questionnaire included five rating scaled queries asking about attitudes toward being a health care provider, preparation to interact within the chosen community, and the amount of debt accumulated after completion of training. The full survey is attached.

Survey Sampling

Primary care providers were identified using publicly available rosters obtained through the New Mexico Board of Medicine and Board of Nursing. Prior to recruitment, the University of New Mexico School of Medicine Student Research Committee and the UNM Health Sciences Center Human Research Review Committee (HRRRC) approved this project. Four cohorts were identified: physicians with rural licensure addresses, physicians with urban licensure addresses, nurse practitioners with rural licensure addresses, and nurse practitioners with urban licensure addresses. Urban designation was given to clinicians whose licensure locale fell in the Albuquerque metropolitan area, Santa Fe, or Las Cruces. The Albuquerque area included Albuquerque proper, Bernalillo, Rio Rancho, Placitas, Corrales, Tijeras, Cedar Crest, and Sandia Park. Practitioners with licensure addresses in all other areas of New Mexico were designated as rural. We assigned primary care designation to the practice areas of Family Medicine, General Practice, Internal Medicine, Pediatrics, and Obstetrics and Gynecology. Physicians with licenses in primary care with or without board certification within that area were included in our randomization. Physicians working in non-primary care subspecialties within these categories or other specialties with were excluded. All nurse practitioners were assumed to be primary care. A question on the survey asked in which community the provider currently practices. That question was used based on the above described rural vs. urban community categories whether providers were classified as rural or urban practitioners for the purposes of data analysis for this study.

The physician licensure list of 4233 names was divided along rural versus urban lines. This initial division allowed for a list of 3087 urban physicians and a list of 1146 rural physicians.

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Names of non-primary care physicians were then culled from each list, leaving 1131 urban physicians with their first specialty designation in primary care and 588 rural physicians with their first specialty designation in primary care. A final exclusion of physicians with a secondary specialty in non-primary care areas yielded 906 urban primary care physicians and 513 rural primary care physicians. "Randomization" of the urban physician list was conducted by selecting every sixth name on this final list to yield a 150 provider mailing list. "Randomization" of the rural list was a bit more complicated with selection of every fourth name with the addition of an extra name after every tenth selection until we garnered 150 providers for our mailing list of rural primary care physicians. We believe there is no reason to believe that the alphabetic ordering of names from the license list is related to any meaningful characteristic of providers, hence providing an unbiased but simple manner of selecting providers to solicit for the survey. The nurse practitioner list was received as a non-alphabetized database not easily put into Excel format that would allow alphabetizing. We took the 32 page printout of 782 names and used a systematic algorithm for selecting nurse practitioners to solicit for the survey. In this manner, we obtained a final list of 150 names for both rural and urban nurse practitioners for our survey mailing.

Survey Procedures

Initial surveys were mailed to 600 (150 per cohort) currently licensed primary care clinicians in the state of New Mexico in April 2007. The survey was mailed with an explanatory letter that included appropriate informed consent information that was approved by the HRRG, which approved a waiver of documentation of informed consent, given that the survey was returned anonymously. Also included in the survey solicitation mailing was a postage-paid return envelope (to be returned anonymously), and a postage-paid postcard for providers to return separately from the survey but with respondent names that enabled the researchers to strike respondents from the follow-up mailing list for providers who had returned a completed survey, or who indicated their ineligibility to complete the survey (i.e., minimum 50% effort as a

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primary care provider in their present community for at least 12 months), or who simply indicated their unwillingness to complete the survey. The name on this card was not linkable to any completed surveys, and providers were so informed in the survey cover letter. As a token of appreciation the explanatory letter included a web link to a depression screening tool that could be of use to clinicians in primary care (MacArthur Foundation Initiative on Depression and Primary Care, <http://www.depression-primarycare.org/>). Subsequent mailings were sent over the summer of 2007. Two full mailings of the entire survey packet with an interim reminder letter mailed between these mailings all at intervals of roughly one month yielded 188 completed surveys from eligible providers. Eighty-seven physicians and 101 nurse practitioners returned completed surveys. Rural respondents numbered 103 with 85 urban repliers. Overall, the final response rate was 33% (see Table 1 for a breakdown of response rates by provider group).

Data Analysis and Power Analysis

We elected to randomly sample 150 providers for each of the 4 study groups (Provider Type (Physician vs. Nurse Practitioner) X Practice Community Type (Rural vs. Urban)) because we anticipated a response rate of at least 50% based on past studies with similar populations, which would have yielded 75 survey respondents per group. Having 75 respondents per between subjects cell would provide power in excess of 90% at $\alpha = 0.05$ to detect medium size main effects (Cohen's $f = 0.20$) for Provider Type and Practice Community Type and 80% power to detect medium size two-way interactions (Question (12 or 24) (within subjects) X Provider Type and Question (12 or 24) (within subjects) X Practice Community Type), but only 55% power to detect the three way interaction (Question X Provider Type X Practice Community Type), which was not predicted to occur. In general, we predicted only that rural compared to urban providers would show differences in influence on some of the main 36 survey questions regarding influence of selection of practice community but not on other questions and that differences between rural and urban providers would not consistently be in the same direction across questions that did reveal differences (i.e., a Practice Community Type X Question

interaction). The three way interaction in this design is merely a test of generalizability between Physicians and Nurse Practitioners, a question for which we did not have the resources to acquire a sufficiently large sample to detect with 80% or greater power, especially given that higher order interactions tend to be small in magnitude (Cohen, 1988).

We conducted two repeated measures MANOVAs on each of the two main survey question sets of 24 items and 12 items (see survey page 2 and Tables 2 and 3) each using a design of Question (12 or 24) (within subjects) X Provider Type (Physician vs. Nurse Practitioner) X Practice Community Type (Rural vs. Urban). A priori simple effects contrasts were then conducted to compare rural vs. urban provider responses within the physician group and separately within the nurse practitioner group. Given that item level responses on rating scale items tend to have relatively low reliability (Nunnally & Bernstein, 1994), we then used maximum likelihood principal axis factor analysis on the 24 items and the 12 items in separate sets, and we used the resulting factors to create equally weighted summed composite measures that would have greater reliability than individual indicators. These 4 and 3 composite variables, respectively, in turn were then subjected to the same repeated measures MANOVA design described above. In addition, we conducted exploratory t-tests, ANOVAs or χ^2 tests to compare rural vs. urban providers by provider type on the various other quantifiable survey questions from page one of the survey (see the attached survey) to determine whether or not various respondent background characteristics are associated with practice community type. Given the exploratory nature of these analyses, we elected not to conduct such tests with adjustments for multiple comparisons at this early stage of this line of research.

RESULTS

Characteristics of Respondents by Groups

Table 2 shows characteristics of respondents by Provider Type by Practice Community Type. As expected most nurse practitioners (88%) were women, but for physicians, most rural respondents (71%) were men and most urban respondents (60%) were women ($p < 0.01$). Mean

age of respondents was 51.9 years (SD=10.1), and most respondents were White (84%), and 17% were Hispanic. Overall, most (77%) were married or living with a partner, but 86% of rural physicians were married ($p<0.05$). Those practicing in rural areas had lived many more years in rural areas lifetime (MD mean = 23.0 and NP mean = 32.0) than those practicing in urban areas (MD mean = 11.6 and NP mean = 16.3) ($p<0.001$) as expected. In contrast, mean years practicing in their current community did not significantly differ by group (range from 11.7 to 14.7 years). Finally, mean years spent practicing health care was greatest among rural nurse practitioners (mean 28.4) and lowest among urban physicians (mean=20.4) with rural physicians (mean = 21.5) and urban nurse practitioners (mean = 24.1) intermediate in experience ($p<0.05$).

Item Level Perceived Influences on Practice Community Choice

Providers were asked for 24 items (see Table 3) how much each influenced their decision to select the community where they now practice. A repeated measures MANOVA was conducted on these 24 questions with the design Provider Type (Physician vs. Nurse Practitioner) by Practice Community Type (Rural vs. Urban) by Question (24 items). A multivariate main effect was found for Question ($F(23,162)=20.96$, $p<0.0001$, partial $\eta^2=0.75$) indicating that providers rated items differently from means of 2.96 to 4.98 (pooled SD=1.75; $d=1.15$) on a scale of 1 = “no at all” to 7 = “very much.” Thus, providers discriminated considerably among the various items that they perceived as having influenced their choice of practice community. An interaction between Questions and Provider Type was detected ($F(23,162)=2.62$, $p<0.001$, partial $\eta^2=0.27$), indicating that ratings of items influencing practice community choice varied as a function of whether the providers were physicians or nurse practitioners. Finally, an interaction between Questions and Practice Community Type was also detected ($F(23,162)=3.56$, $p<0.001$, partial $\eta^2=0.35$), indicating that ratings of items influencing practice community choice varied as a function of whether the providers were practicing in rural compared to urban communities, as predicted. However, a priori contrasts

comparing rural to urban providers within each provider type did not reveal any significant differences, although several contrasts do show medium or larger effects sizes (see Table 3).

Examination of items showing rural vs. urban effects sizes of $d=0.30$ or higher suggest a profile of motivations of rural practicing providers that differs as a function of provider type. For physicians, rural providers compared to urban providers report more influence of: (1) being able to care for underserved people ($d=0.64$); (2) being able to interact with patients outside the clinic ($d=0.48$); and (3) being able to care for patients who lack insurance ($d=0.31$). Furthermore, rural physicians report less influence of: (1) having easy access to consult specialist providers ($d=0.73$); (2) having a flexible work schedule ($d=0.59$); (3) being able to use the newest therapies and technologies ($d=0.53$); (4) having relatively low levels of on-call time ($d=0.37$); and (5) being able to keep work and home life separate ($d=0.36$). In contrast, the profile of rural nurse practitioner motivations is somewhat different. For nurse practitioners, rural providers compared to urban providers report being more influenced of: (1) being able to interact with patients outside the clinic ($d=0.69$); (2) being able to care for patients who lack insurance ($d=0.43$); (3) having adequate staff to deal with paperwork ($d=0.39$); and (4) caring for patients with a wide variety of health concerns ($d=0.33$). In addition, rural nurse practitioners compared to urban providers report being less influenced by: (1) being able to control the pace of patient visits ($d=0.43$); (2) having easy access to consult specialist providers ($d=0.37$); and (3) being able to easy consult with other clinicians ($d=0.35$).

Providers were asked on 12 additional items (see Table 4) how much each drew them to the community where they now practice. As before, a repeated measures MANOVA was conducted on the 12 questions with the design Provider Type (Physician vs. Nurse Practitioner) by Practice Community Type (Rural vs. Urban) by Question (12 items). A multivariate main effect was found for Question ($F(11,174)=33,38$, $p<0.0001$, partial $\eta^2=0.68$) indicating that providers rated items differently with means of 2.83 to 4.72 (pooled $SD=1.85$; maximum $d=1.02$) on a scale of 1 = "no at all" to 7 = "very much." Thus, as with the previous 24 factors providers

discriminated considerably among these 12 items that drew them to their current practice community. An interaction between Questions and Provider Type was detected ($F(11,174)=2.13$, $p<0.03$, partial $\eta^2=0.12$), indicating again that ratings of questions influencing practice community choice varied as a function of whether the providers were physicians or nurse practitioners. And again as before, an interaction between Questions and Practice Community Type was also detected ($F(1,184)=4.14$, $p<0.001$, partial $\eta^2=0.21$), indicating that ratings of factors influencing practice community choice varied as a function of whether the providers were practicing in rural compared to urban communities, as predicted. Finally, the three way interaction Questions by Provider Type by Practice Community Type was also found ($F(11,174)=2.15$, $p<0.03$, partial $\eta^2=0.12$), indicating that the pattern of rural vs. urban provider differences on rating items varied as a function of whether the providers were physicians or nurse practitioners. Again a priori contrasts were conducted to compare rural to urban providers within each provider type (see Table 4).

Items showing rural vs. urban effects sizes of $d=0.30$ or higher suggest a profile of motivations of rural practicing providers that differs as a function of provider type. For physicians, rural providers compared to urban providers report more influence by: (1) could contribute more to the community here ($d=0.62$); (2) being actively recruited for the job ($d=0.44$); (3) helping meet loan repayment obligations ($d=0.40$); and (4) previous experience in working in similar contexts ($d=0.31$).

Furthermore, rural physicians report less influence by: (1) educational qualities or opportunities for children ($d=0.72$); (2) spouse education, job or career opportunities ($d=0.65$); and (3) cultural activities in the community ($d=0.31$). In contrast, the profile of rural nurse practitioner motivations is again somewhat different. For nurse practitioners, rural providers compared to urban ones report being more influenced by: (1) safety of the community ($d=0.51$); (2) outdoor activities available in the area ($d=0.49$); and (3) could contribute more to the community here

($d=0.38$). Rural nurse practitioners compared to urban providers did not report being less influenced by any item with an effect size of 0.30 or higher.

Factor Analysis of Core Survey Questions

We conducted exploratory maximum likelihood principal axis factor analysis on the set of 24 items described above and separately on the set of 12 draw questions. The goal was to extract factors that could be used to create composite variables that would have greater reliability than the items alone have (Nunnally & Bernstein, 1994). Equally weighted averaged composite variables were created for each factor to use in subsequent analyses. That is, items on a factor were summed with weights of 1.0 each and then divided by the number of items on each factor to maintain the measurement scale of the original ratings (1 = “no at all” to 7 = “very much”). Levene’s test of variances showed no significant differences across items.

For the 24 item set of survey measures, a 4 factor solution appeared to provide the most concise and definable set of constructs: (1) Ability to Provide the Best Technical Health Care (items s, q, w, g, l, m from Table 3) (Variance Accounted For [VAF] = 0.27; Cronbach’s $\alpha=0.88$); (2) Ability to Personally Relate to Patients (items t, b, v, u, j, h, r, n) (VAF = 0.21; $\alpha = 0.85$); (3) Characteristics of the Professional Position (items e, d, l, k, o, p, c) (VAF = 0.18; $\alpha = 0.79$); and (4) Control Over the Practice (items a, f, x) (VAF = 0.12; $\alpha = 0.66$). All 24 items loaded at least 0.34 or higher.

For the 12 items set of questions, a 3 factor solution appeared to provide the most concise and definable set of constructs: (1) Contribution and Connection to the Community (items e, f, h, g, d, k from Table 4) (VAF = 0.33; $\alpha = 0.87$); (2) Salary and Benefits (items a and b) (VAF = 0.15; $\alpha = 0.59$); and (3) Characteristics of the Professional Position (items i and j) (VAF = 0.12; $\alpha = 0.51$). From this set of questions, item c (helping meet loan repayment obligation) and item l (being actively recruited for the job or community) did not load appreciably on any factor, and all other items loaded 0.36 or higher.

Factor Level Perceived Influences on Practice Community Choice

As with the item level analyses reported above, a repeated measures MANOVA was conducted on the 4 factors derived from the 24 items (see Table 4) assessing influences on decisions to select the community where providers now practice: Ability to Provide the Best Technical Health Care; Ability to Personally Relate to Patients; Characteristics of the Professional Position; and Control Over the Practice. The MANOVA design was Provider Type (Physician vs. Nurse Practitioner) by Practice Community Type (Rural vs. Urban) by Factor (4 factors). A multivariate main effect was found for Factor ($F(3,182)=33.12$, $p<0.0001$, partial $\eta^2=0.39$) indicating that providers rated factors differently with means of 3.52 to 4.61 (pooled $SD=1.30$; maximum $d=0.84$) on a scale of 1 = “no at all” to 7 = “very much.” Thus, providers discriminated among these 4 factors that influenced them to decide on their current practice community. The interaction between Factors and Provider Type was non-significant ($p<0.22$; partial $\eta^2=0.02$). An interaction between Questions and Practice Community Type was also found ($F(3,182)=9.51$, $p<0.001$, partial $\eta^2=0.14$), indicating that ratings of factors influencing practice community choice varied as a function of whether the providers were practicing in rural compared to urban communities, as predicted. Finally, the three way interaction of Factors by Provider Type by Practice Community Type was non-significant ($p<0.93$, partial $\eta^2<0.01$). A priori simple effects contrasts were again conducted to compare rural to urban providers within each provider type.

The pattern of “Influence Factor” means for physicians for the 4 factors is depicted in Figure 1 and for nurse practitioners in Figure 2. As can be seen in the figures, the pattern for both groups of rural providers is nearly identical. Rural providers, whether physicians or nurse practitioners, report being most influenced by the Ability to Personally Relate to Patients (mean=4.86) and less influenced by Ability to Provide the Best Technical Health Care (mean=3.67), Characteristics of the Professional Position (mean=3.79), and Control Over the Practice (means=3.67, 3.79, 3.41, respectively; mean $d=0.94$; contrast $p<0.05$). The pattern for

urban providers for both groups is different than for rural providers – urban providers rate Control Over the Practice (mean=3.54) lowest among the 4 factors (as do Rural providers) but make essentially no distinction among the other 3 factors (means=4.20, 4.37 and 4.19, respectively; mean $d=0.54$; contrast $p<0.05$), all of which they rate higher in influence than do rural providers (mean $d=0.45$; contrast $p<0.10$).

A repeated measures MANOVA was also conducted on the 3 factors derived from the 12 draw items (see Table 4) assessing things that drew providers to the community where they now practice: Contribution and Connection to the Community; Salary and Benefits; and Characteristics of the Professional Position.

The MANOVA design again was Provider Type (Physician vs. Nurse Practitioner) by Practice Community Type (Rural vs. Urban) by Factor (3 factors). A multivariate main effect was found for Factor ($F(2,183)=21.23$, $p<0.0001$, partial $\eta^2=0.19$) indicating that providers rated factors differently with means of 3.31 to 4.21 (pooled $SD=1.60$; maximum $d=0.56$) on a scale of 1 = “no at all” to 7 = “very much.” Thus, providers discriminated among these 3 factors that drew them to their current practice communities. The interaction between Factors and Provider Type was non-significant ($p=0.20$; partial $\eta^2<0.02$). An interaction between Questions and Practice Community Type was found ($F(2,183)=5.19$, $p<0.01$, partial $\eta^2<0.06$), indicating that ratings of factors influencing practice community choice varied as a function of whether the providers were practicing in rural compared to urban communities, as predicted. Finally, the three way interaction of Factors by Provider Type by Practice Community Type approached significance ($F(2,183)=2.92$, $p<0.06$, partial $\eta^2=0.03$). A priori simple effects contrasts were again conducted to compare rural to urban providers within each provider type.

The pattern of “Draw Factor” means for physicians is depicted in Figure 3 and for nurse practitioners in Figure 4. As with the 4 Influence Factors above, the patterns of means for the Draw Factors is nearly identical comparing physicians to nurse practitioners. Both rural groups of providers rate Contribution and Connection to Community (CCC) (mean=4.36) as the highest

factor drawing them to their practice communities. Rural providers rate Salary and Benefits (SB) (mean=3.54; contrast to CCC Factor, $p < 0.05$) as intermediate, and rate Characteristics of the Professional Position (mean=3.01; contrast to CCC Factor, $p < 0.01$ and contrast to SB factor, $p < 0.10$) as lowest (maximum $d = 0.84$). The pattern of factor means for urban physicians and nurse practitioners is different than for rural providers for each group and different between urban physicians and nurse practitioners. For urban physicians the factor means for the Contribution and Connection to the Community (mean=4.19) and Salary and Benefits (mean=3.39; $d = 0.50$) are nearly identical to that of rural physicians (means=4.36 and 3.54), but urban physicians indicate they are drawn to their practice communities much more by Characteristics of the Professional Position (mean=4.02) than are their rural physician peers (mean=2.86; $d = 0.73$; contrast $p < 0.05$). Urban nurse practitioners show a different pattern. Urban nurse practitioners (NP) rate the draw of Contribution and Connection to Community (mean=3.87) lower than do their rural counterparts (mean=4.39; $d = 0.33$; contrast $p < 0.20$). Urban NP's, however, rate Salary and Benefits (mean=3.98) higher than do their rural peers (mean=3.53; $d = 0.28$; $p < 0.20$), but urban NP's rate Characteristics of the Professional Position almost identically to that of rural NP's (means=3.26 vs. 3.16).

Practice Community Type by Respondent Background Characteristics

We conducted exploratory tests to compare rural physicians to urban physicians and rural nurse practitioners to urban NP's on the 30 quantitatively coded questions from page one of the survey to determine if we could detect any characteristics that are associated with rural vs. urban practice community. Urban NP's (25%) were more likely to be Hispanic than were rural NP's (8%) ($p < 0.03$), but no difference was detected in Hispanic status for physicians. Rural practitioners (29 years) compared to urban ones (14 years) (had spent more years during their lifetimes living in a small town or rural area, as would be expected; however, no difference in rural vs. urban providers was found for how long they had lived in a small town or rural area prior to age 18. Neither the amount of research involvement during training nor the amount of

community service during training differed between rural and urban provider groups, but rural providers, both NP's and physicians, had spent more time in rural rotations during training than urban providers. Finally, rural providers reported planning to work longer in their practice community in the years ahead than did urban providers, and this difference maintained when we made the same comparison after subtracting previous length of time practicing health care from the planned future time in the present community.

DISCUSSION

Training and recruitment of rural primary care providers remains a challenge with very elusive solutions. In this study comparing characteristics and motivations of primary care physicians and nurse practitioners in New Mexico for selecting rural vs. urban practices in which to work, we found support for previous findings in this field as well as direction for further study. In our sample of respondents, rural physicians tended to be male and urban physicians tended to be female. Those clinicians working in the nonurban setting had spent more time living or working in similar settings. Both of these findings support earlier studies. For both rural physicians and nurse practitioners, the ability to interact with patients outside the clinic was a significant shared influence in deciding their practice setting. Rural primary care providers valued the opportunity to personally relate to patients and to contribute and connect with the community as major factors in choosing their practice and community.

For both rural physicians and rural NPs, self-perceived factors that had positive influence on choosing their current clinical setting included being able to interact with patients outside the clinic and being able to care for patients who lack insurance. Rural physicians also indicated that being able to care for underserved people stood as positive influence in this study. Rural NPs demonstrated the desires to have adequate staff to deal with paperwork and to care for patients with a wide variety of health concerns in addition to those factors they shared with rural physicians. It appears the rural clinicians were motivated by a desire to help those they felt connected to and who had a perceived strong need.

On the other hand, rural primary care providers as a group were less influenced by having easy access to consult specialist providers. Rural physicians were also less influenced by having a flexible work schedule, by being able to use the newest therapies and technologies, by having relatively low levels of on-call time, and by being able to keep work and home life separate. Rural NPs did not share these negative influences and, instead, were less influenced by being able to control the pace of patient visits and by having easy access to consult with other clinicians. It may be that the nature of the rural practice requires a certain level of independence and self-sufficiency that these clinicians are willing to take on. The rural clinicians appear willing to do what they can within the context of limited resources. In fact, they may recognize that basic primary care may not require the level of resources most people commonly perceive as standard. On its face, it appears rural clinicians value interaction and connection with both patients and their community and are willing to “make do” in order to serve those who appear to need them most.

In examining those factors that drew clinicians to their chosen community, both rural physicians and rural nurse practitioners reported being positively influenced by their perception they could contribute more to the community at their chosen site. Rural physicians reported that factors extrinsic to the community such as being actively recruited for the job, having previous experience in working in similar contexts, and having the opportunity to meet loan repayment obligations also positively impact their choice of community where they will practice. In contrast, rural nurse practitioners were positively influenced by qualities intrinsic to the community such as safety of the community and outdoor activities available in the area. Both clinician types desire to help communities with perceived greater need, but physicians also appear to value other external factors. NPs, on the other hand, appear more motivated by factors integral to the qualities of the community itself.

Factors relating to community choice that had less influence on rural physicians included educational qualities or opportunities for children; spouse education, job or career opportunities;

and cultural activities in the community. Rural nurse practitioners did not report being less influenced by any particular item than urban NPs. It appears, therefore, that rural clinicians in selecting a particular community type tend to be willing to work where they feel needed and where they can have greater impact. In the analysis of the four “Influence Factors”, the means for these two groups was nearly identical. This suggests that despite differences in training and practice styles, rural physicians and rural nurse practitioners share some similar motivational patterns in choosing to practice in nonurban settings. Additionally, in the analysis of the three “Draw Factors”, both rural groups of providers rate contribution and connection to community as the highest factor drawing them to their practice communities. Overall, rural physicians and nurse practitioners demonstrated being similarly and strongly influenced by interpersonal connection with and contribution to patients and the rural communities in which they live and work.

FUTURE RESEARCH

Given the above findings and the continued and increasing need for rural primary health practitioners, it would be interesting to include attitudes and motivations of physician’s assistants and any other mid-level, but independent, health practitioners working in these settings. Additionally, one of the limitations of this study is that it looked solely at clinicians in the state of New Mexico. It would be interesting to see and compare whether there are similarities across “rural” populations from other various states. Are motivations to be a rural practitioner similar in different states or countries? Is there something unique in choosing to be a health care practitioner in a largely rural state as opposed to opting to practice in the rural areas of a more populous state? An interesting study that might yield important information would be a comparison between motivations toward primary care practice in a rural setting and primary care to underserved urban populations. Ultimately, however, it appears that health care training needs more emphasis on community and populations and systems should be

implemented at the educational level to ensure practitioners are more fully aware of options and influences toward practice and community choice.

STUDY LIMITATIONS

There are several weaknesses to this study which limit its generalizability. First, our response rate could have been improved had the questionnaire and subsequent reminders been sent within a tighter time frame. The survey and reminders were sent out over three months in late spring and mid-summer of 2007. Clinicians may have been on vacation or on shortened office hours over this extended time. Second, the study itself is a retrospective investigation that required the respondents to remember past motivations. The acts of reconstruction and memory are major confounds that could, in the future, be overcome by utilizing a prospective framework instead. Third, the study looks solely at health care practitioners in New Mexico. The state itself is considered largely rural and the urban/rural differences that are more apparent in other states may or may not occur here. People who choose to practice here may do so under the assumption that they are helping the rural or underserved when, in fact, they are truly “urban” practitioners. It may be that although there are differences amongst the four cohorts studied, the entire population itself is fairly unique when compared to health care providers in other states.

CONCLUSION

Despite programs and incentives to train and entice more primary care providers to rural areas, people living in nonurban settings continue to lack sufficient health care resources. In an attempt to discover factors and motivations that drew current health care practitioners to their communities, we solicited 600 physicians and nurse practitioners across the state of New Mexico to return surveys regarding their motivations for selecting their practice locations. We found that those living and working in rural communities are influenced and drawn to work outside of Albuquerque, Santa Fe, and Las Cruces, in part, to be part of their communities and to help those who most need their services. Rural health care providers in New Mexico choose

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to serve as and where they do to make a larger difference than they might otherwise have and to interact on a more personal level with their patients and their communities. They demonstrate that a desire to help the underserved and the uninsured stands as a factor that influences toward rural practice in New Mexico. As we continue to attempt to solve the inequities in health care resource distribution, we need to consider ways to educate our trainees about the inherent value in serving all types communities while finding other enticements to working in these less populous areas.

TABLE 1. RESPONSE RATE TABLE BY CLINICIAN TYPE BY PRACTICE COMMUNITY TYPE

CLINICIAN TYPE	PRACTICE COMMUNITY TYPE	SURVEYS MAILED	NON-ELIGIBLE		REFUSALS		RESPONSES		RESPONSE RATE
		N	N	%	N	%	N	%	
Physician	Rural	150	9	6	3	2	42	28	29.8%
	Urban	150	23	15	2	1.3	45	30	35.4%
	Total MD	300	32	10.7	5	1.7	87	29	32.5%
Nurse Practitioner	Rural	150	10	6.7	1	0.7	61	40.7	43.6%
	Urban	150	22	14.7	2	1.3	40	26.7	31.3%
	Total NP	300	32	10.7	3	1	101	33.7	37.7%
	Total	600	64	10.7	8	1.3	188	31.3	35.1%

Table 2. Characteristics of Providers Returning Completed Surveys

	Primary Care Provider Type			
	Physician		Nurse Practitioner	
	Practice Community		Practice Community	
	Rural (n=42)	Urban (n=45)	Rural (n=60)	Urban (n=40)
Respondent Characteristic:				
Returned completed survey	30%	35%	44%	31%*
Gender: % Male / % female	71 / 29	40 / 60	12 / 88	12 / 88*
Age in years	52.1	51.7	53.4	49.7
Ethnic/racial group:				
Hispanic %	17	21	8	25
Native American %	5	0	2	2
White/Anglo %	81	88	89	75
African American	5	0	0	3
Asian American	2	4	0	0
Other groups %	0	0	2	5
Married or living with partner %	86	76	75	72*
Length of time lived in rural area lifetime, years	23.0	11.6	32.0	16.3*
Length of time practicing health care, years	21.5	20.4	28.4	24.1*
Length of time practicing in current community, yrs.	11.7	14.7	13.9	14.0

* p < 0.05

Table 3. Mean provider ratings of self-perceived influence of various factors in deciding to select their current practice community

How much did each listed factor influence your decision to select the community where you now practice? ^{1,2}	Primary Care Physician Practice Community Location					Nurse Practitioner Practice Community Location				
	Rural (n=42)		Urban (n=45)		Cohen's d	Rural (n=61)		Urban (n=40)		Cohen's d
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
1. Being in an independent practice under my control	3.15	(2.22)	3.63	(2.22)	-0.29	4.49	(2.23)	4.20	(2.04)	0.16
2. Being able to care for pts. who lack insurance	4.12	(2.00)	3.60	(1.79)	0.31**	4.30	(1.86)	3.53	(1.93)	0.43**
3. Having a relatively high salary	3.43	(1.61)	3.46	(1.49)	-0.02	3.95	(1.39)	3.97	(1.68)	-0.01
4. Having relatively low levels of on-call time	3.33	(1.74)	3.94	(1.96)	-0.37**	4.62	(2.04)	4.91	(2.05)	-0.16
5. Having sufficient time off for vacations	4.38	(1.87)	4.42	(1.46)	-0.02	4.50	(1.81)	4.54	(1.79)	-0.02
6. Being able to control the pace of patient visits	3.74	(1.68)	3.97	(1.81)	-0.14	3.49	(1.88)	4.26	(1.93)	-0.43**
7. Being able to easily consult with other clinicians	4.26	(1.74)	4.71	(1.37)	-0.27	4.29	(1.67)	4.91	(1.86)	-0.35**
8. Caring for pts. with a wide variety of health concerns	5.23	(1.36)	4.83	(1.53)	0.24	5.17	(1.50)	4.57	(1.79)	0.33**
9. Having easy access to coverage for time off	4.26	(1.73)	4.48	(1.69)	-0.13	3.70	(1.86)	4.01	(1.90)	-0.17
10. Knowing my patients on a relatively personal level	5.34	(1.19)	5.34	(1.62)	0.00	5.40	(1.52)	5.09	(1.82)	0.17
11. Having a flexible work schedule	3.72	(1.70)	4.69	(1.55)	-0.59**	4.35	(1.89)	4.13	(1.69)	0.12
12. Having adequate staff to deal with paperwork	3.74	(1.60)	4.19	(1.82)	-0.27	3.98	(1.98)	3.29	(1.69)	0.39**
13. Having a business manager to deal with insurance . .	4.58	(1.86)	4.37	(1.91)	0.13	3.79	(1.99)	3.31	(2.23)	0.27
14. Feeling like a part of the local community . . .	5.22	(1.46)	4.85	(1.66)	0.22	5.49	(1.59)	5.16	(1.98)	0.18
15. Being able to keep work and home life separate	4.04	(1.65)	4.65	(1.59)	-0.36**	4.64	(1.81)	4.73	(1.82)	-0.05
16. Having a set and consistent work schedule	3.91	(1.72)	4.27	(1.69)	-0.22	4.54	(1.69)	4.30	(2.01)	0.13
17. Having staff with the most up to date training	3.73	(1.50)	3.75	(1.76)	-0.01	3.54	(1.64)	3.64	(1.81)	-0.06
18. Being able to interact with pts. outside the clinic . . .	3.88	(1.58)	3.07	(1.71)	0.48**	4.33	(1.92)	3.09	(1.50)	0.69**
19. Having easy access to consult specialist providers	3.61	(1.76)	4.82	(1.31)	-0.73**	3.86	(1.65)	4.53	(1.71)	-0.37**
20. Being able to care for underserved people	5.13	(1.70)	4.06	(1.80)	0.64**	5.46	(1.57)	5.14	(1.84)	0.18
21. Have time to work w/ pts to solve their problems . . .	4.67	(1.27)	4.69	(1.55)	0.01	4.85	(1.69)	5.30	(1.77)	-0.25
22. Being able to consult w/ pts' families about their care	4.39	(1.32)	4.19	(1.78)	0.12	4.52	(1.79)	4.29	(1.86)	0.13
23. Being able to use newest therapies & technologies	3.34	(1.53)	4.23	(1.51)	-0.53**	3.75	(1.62)	3.61	(1.63)	0.07
24. Caring for people who can afford good health care	2.83	(1.57)	3.48	(1.42)	-0.39**	3.22	(1.63)	2.97	(1.55)	0.14

¹ All items were rated on a scale from 1 = "not at all" to 7 = "very much."

² A Provider Group(2) X Community Location (2) X Item (24) repeated measures MANOVA revealed the following multivariate effects: Item (p<0.001); Item by Community Location (p<0.02); Item by Provider Group (p<0.01); Item by Community Location by Provider Group (p<0.08).

³ Differences in Rural vs. Urban item means are significantly different by Fisher's LSD at: ** p = 0.05 or * p = 0.10.

⁴ Differences in means between items within any column of 0.12 or greater are significantly different at p = 0.05 by Fisher's LSD.

Table 4. Mean provider ratings of self-perceived influence of various factors drawing providers to communities where they now practice

How much did the listed things draw you to the community or practice where you now practice? ^{1,2}	Primary Care Physician Practice Community Location					Nurse Practitioner Practice Community Location				
	Rural (n=42)		Urban (n=45)		Cohen's d	Rural (n=61)		Urban (n=40)		Cohen's d
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
a. Salary level	3.55 ⁴	(1.63)	3.11 ⁴	(1.42)	0.25 ³	3.28 ⁴	(1.45)	3.80 ⁴	(1.76)	-0.28 ³
b. Job benefits	3.55	(1.77)	3.67	(1.54)	-0.07	3.79	(1.85)	4.15	(1.96)	-0.19
c. Helping meet loan repayment obligations	2.69	(2.28)	1.98	(1.66)	0.40	2.31	(1.87)	2.00	(1.70)	0.17
d. Safety of the community	3.64	(1.85)	3.24	(1.60)	0.22	3.92	(1.86)	2.98	(1.78)	0.51
e. I could contribute more to the community here	5.12	(1.47)	4.01	(1.71)	0.62**	5.20	(1.66)	4.50	(1.71)	0.38
f. I identify with the people I care for here	4.60	(1.67)	4.60	(1.51)	0.00	4.64	(1.67)	4.63	(1.55)	0.01
g. Previous experience in working in similar contexts	4.14	(1.86)	3.58	(1.89)	0.31	3.98	(1.85)	3.90	(1.91)	0.04
h. Cultural activities in the community	3.64	(1.90)	4.22	(1.87)	-0.33	3.90	(1.56)	3.45	(1.78)	0.24
i. Spouse education, job or career opportunities	2.86	(1.93)	4.02	(2.38)	-0.65**	3.16	(2.36)	3.25	(2.01)	-0.05
j. Educational quality or opportunities for children	2.45	(1.76)	3.73	(1.95)	-0.72**	2.30	(1.67)	2.83	(2.05)	-0.29
k. Outdoor activities available in the area	4.90	(1.59)	5.40	(1.23)	-0.28	4.69	(2.01)	3.78	(2.06)	0.49
l. Being actively recruited for the job or community	3.79	(2.04)	3.00	(1.80)	0.44	3.44	(2.16)	2.90	(1.88)	0.29

¹ All items were rated by providers on a scale from 1 = “not at all” to 7 = “very much.”

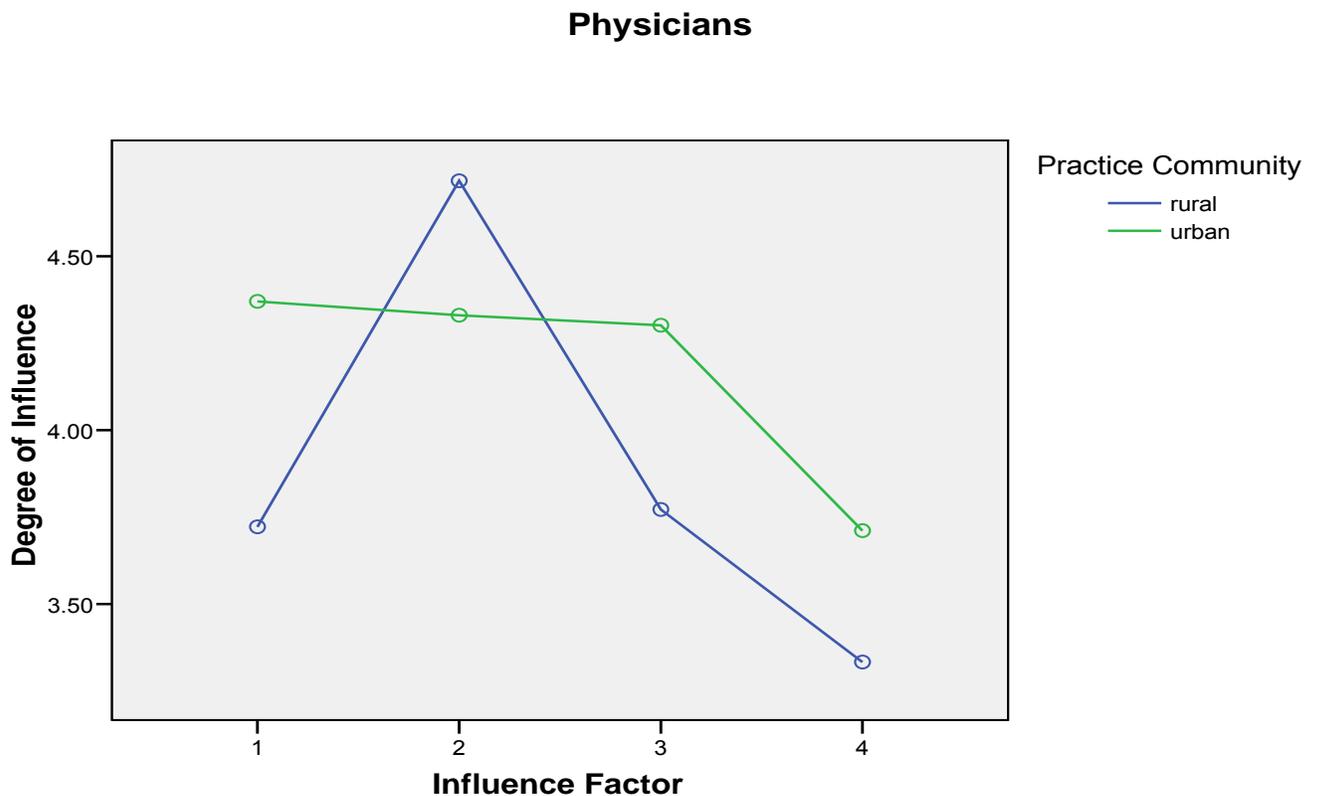
² A Provider Group(2) X Community Location(2) X Item(12) repeated measures MANOVA revealed the following multivariate effects: Item (p<0.001); Item by Community Location (p<0.001); Item by Provider Group (p<0.03); Item by Community Location by Provider Group, p<0.02).

³ Differences in Rural vs. Urban item means are significantly different by Fisher’s LSD at: ** p = 0.05 or * p = 0.10.

⁴ Differences in means between items within any column of 0.12 or greater are significantly different at p = 0.05 by Fisher’s LSD.

Figure 1.

Primary care physician ratings of the influence of factors on their decision to select communities where they now practice health care



Factor 1: Ability to Provide the Best Technical Health Care – items s, q, w, g, l, m (see Table 3).

Factor 2: Ability to Personally Relate to Patients – items t, b, v, u, j, h, r, n .

Factor 3: Characteristics of the Professional Position – items e, d, l, k, o, p, c.

Factor 4: Control over the Practice – items a, f, x .

Factors were derived from an exploratory maximum likelihood factor analysis on which all items loaded 0.34 or higher and are computed as equally weighted summed composite variables.

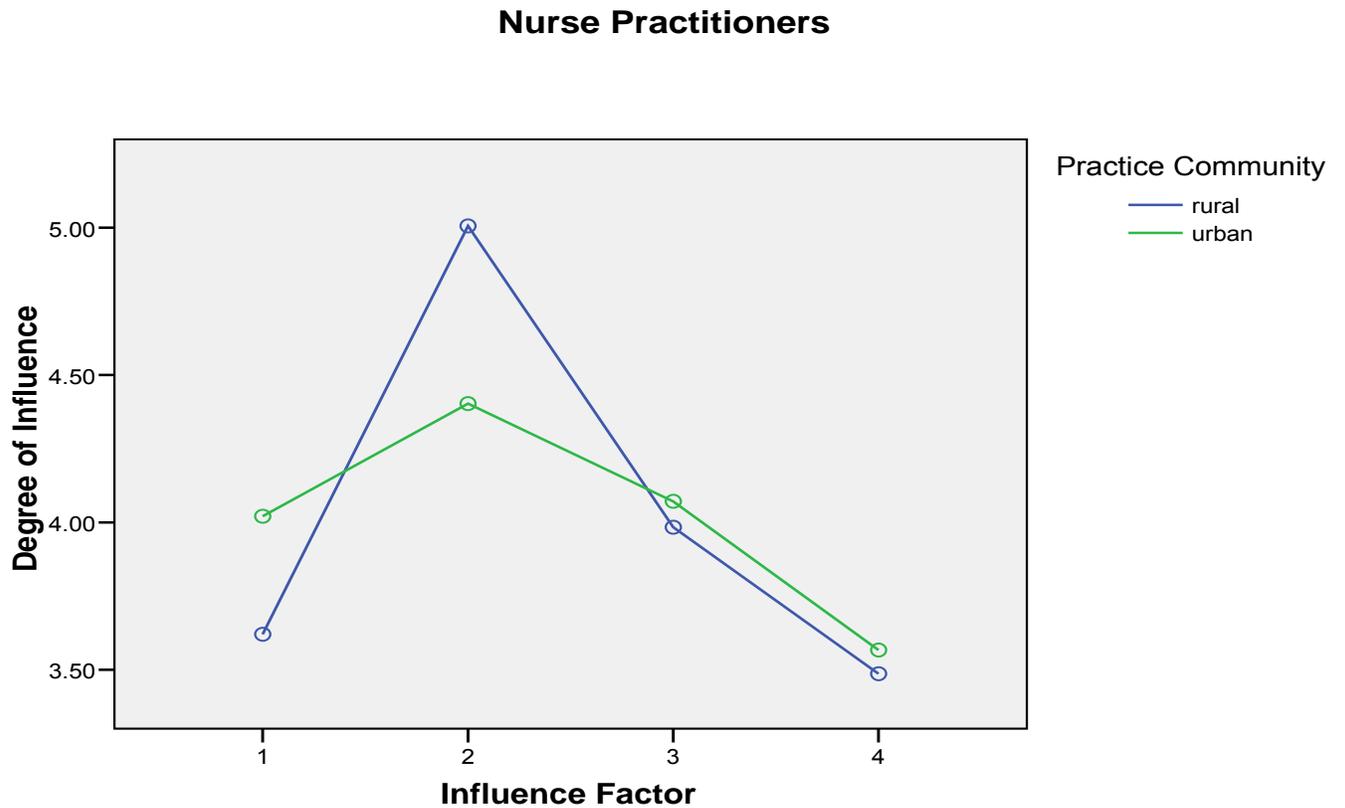
Repeated measures MANOVA effects: Factors ($p < 0.001$); Factors X Community ($p < 0.001$).

Degree of Influence for the 24 items was rated on a scale of: 1 = “not at all” to 7 = “very much.”

Pooled SD = 1.32 for factor rating scores.

Figure 2.

Primary care nurse practitioner ratings of the influence of factors on their decision to select communities where they now practice health care.



Factor 1: Ability to Provide the Best Technical Health Care – items s, q, w, g, l, m (see Table 3).

Factor 2: Ability to Personally Relate to Patients – items t, b, v, u, j, h, r, n .

Factor 3: Characteristics of the Professional Position – items e, d, l, k, o, p, c.

Factor 4: Control over the Practice – items a, f, x .

Factors were derived from an exploratory maximum likelihood factor analysis on which all items loaded 0.34 or higher and are computed as equally weighted summed composite variables.

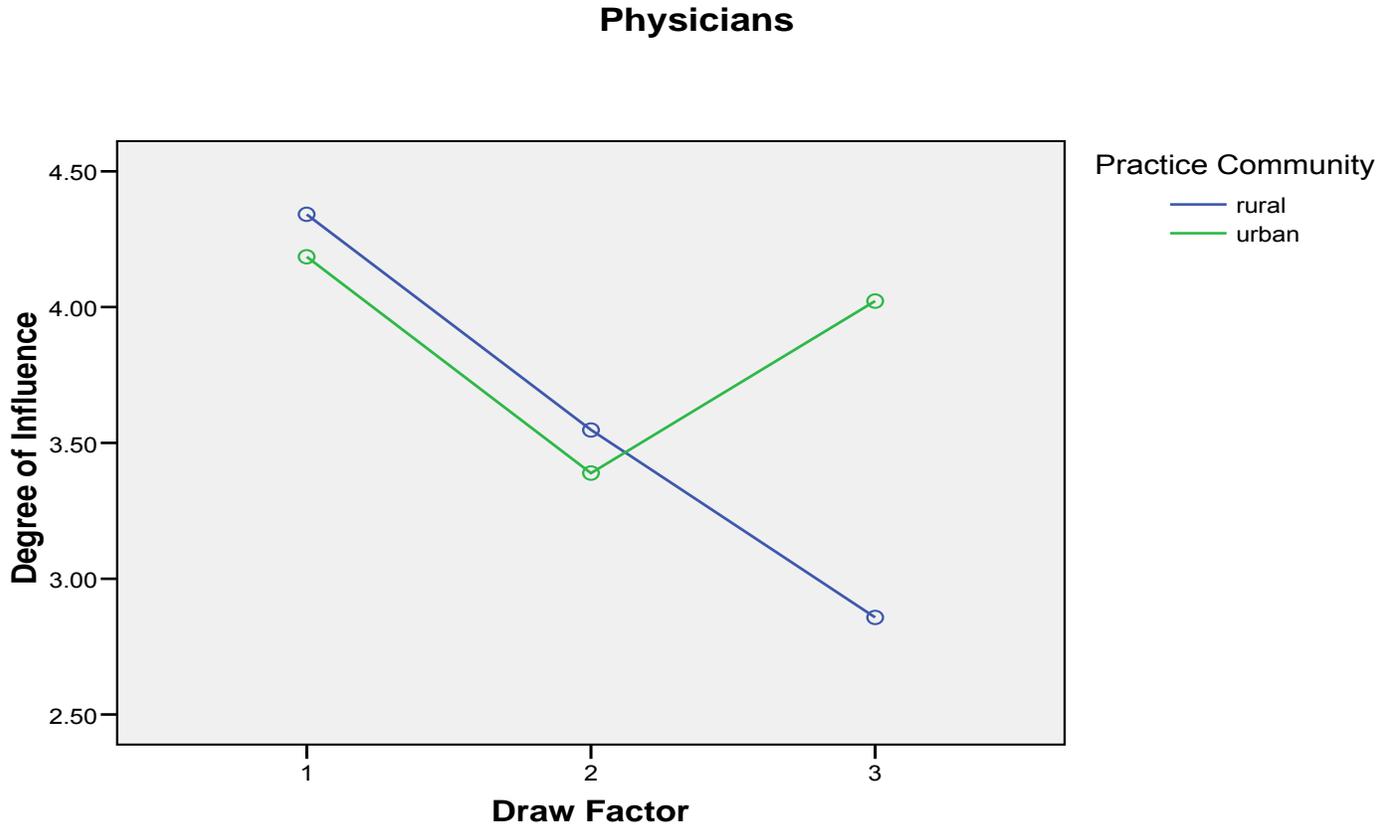
Repeated measures MANOVA effects: Factors ($p < 0.001$); Factors X Community ($p < 0.001$).

Degree of Influence for the 24 items was rated on a scale of: 1 = “not at all” to 7 = “very much.”

Pooled SD = 1.32 for factor rating scores.

Figure 3.

Primary care physician ratings of the factors that drew them to the communities where they now practice health care.



Factor 1: Contribution and Connection to Community – items e, f, h, g, d, k (see Table 4).

Factor 2: Salary and Benefits – items a, b.

Factor 3: Characteristics of the Professional Position – items j, i.

Factors were derived from an exploratory maximum likelihood factor analysis on which all items loaded 0.36 or higher and are computed as equally weighted summed composite variables.

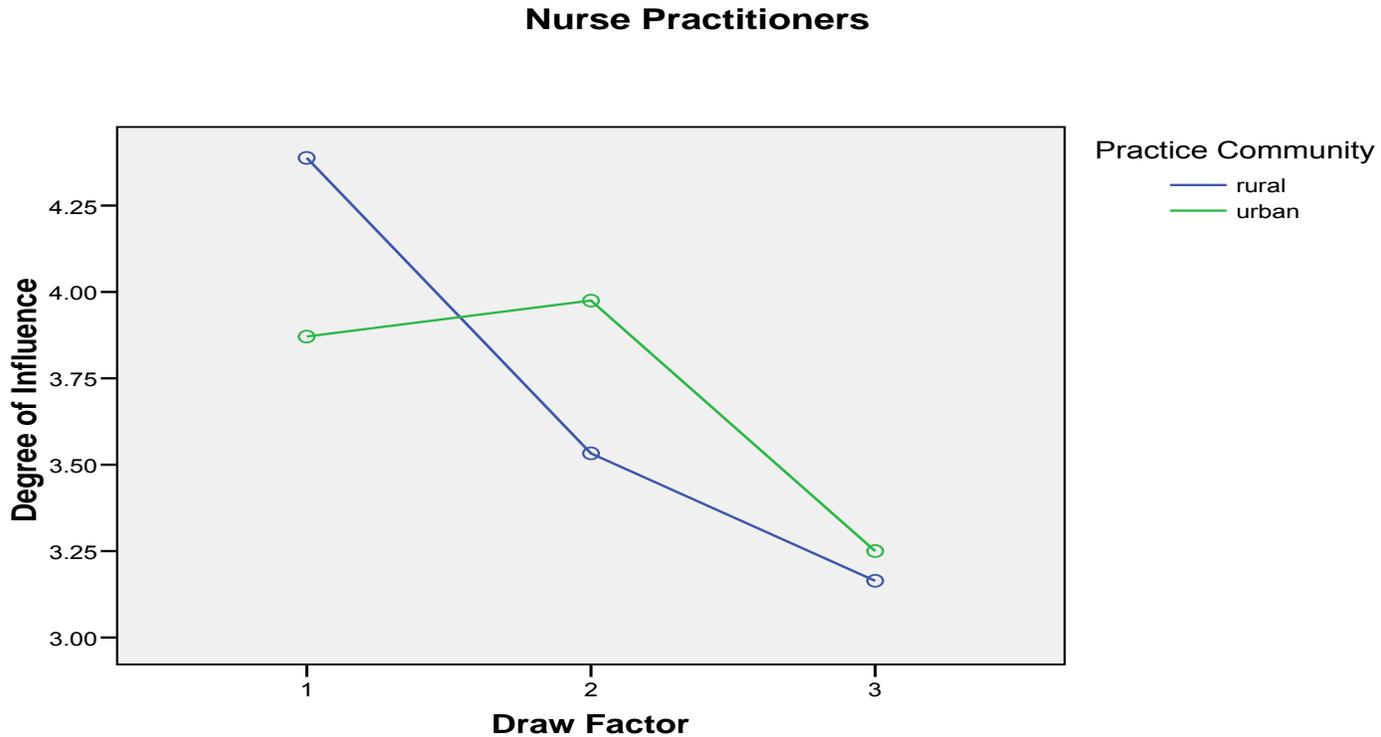
Repeated measures MANOVA effects: Factors ($p < 0.001$); Factors X Community ($p < 0.01$); Factors X Community X Provider Type ($p < 0.06$).

Degree of Influence for the 12 items was rated on a scale of: 1 = “not at all” to 7 = “very much.”

Pooled SD = 1.60 for factor rating scores.

Figure 4.

Nurse practitioner ratings of the factors that drew them to the communities where they now practice health care.



Factor 1: Contribution and Connection to Community – items e, f, h, g, d, k (see Table 4).

Factor 2: Salary and Benefits – items a, b .

Factor 3: Characteristics of the Professional Position – items j, i.

Factors were derived from an exploratory maximum likelihood factor analysis on which all items loaded 0.36 or higher and are computed as equally weighted summed composite variables.

Repeated measures MANOVA effects: Factors ($p < 0.001$); Factors X Community ($p < 0.01$);
Factors X Community X Provider Type ($p < 0.06$).

Degree of Influence for the 12 items was rated on a scale of: 1 = “not at all” to 7 = “very much.”

Pooled SD = 1.60 for factor rating scores.

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