

FACTORS INFLUENCING RURAL PHYSICIAN ASSISTANT PRACTICE

A Research Project by

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I hereby recommend that the research project prepared under my supervision by Angela Armour and Robin Williamson entitled Factors Influencing Rural Physician Assistant Practice be accepted as partial fulfillment for the degree of Master of Physician Assistant.

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## TABLE OF CONTENTS

	Page
LIST OF TABLES	iv
LIST OF FIGURES	v
ACKNOWLEDGMENT	vi
ABSTRACT	1
1. INTRODUCTION	
Literature Review	3
Purpose	6
2. METHODOLOGY	
Design	7
Participants	7
Measurement	7
Data	7
3. RESULTS AND DATA ANALYSIS	9
4. DISCUSSION	
Summary of results as compared to literature	20
Overall significance of the study findings and opportunities for future research	20
Conclusion	22
LIST OF REFERENCES	23
APPENDIX	
A. Survey	24
VITA	27

## LIST OF TABLES

Table	Page
1. Demographic Characteristics of Applicants and Graduates	9
2. Marital Status and Factors Influencing First Employment	11
3. Community Size of Current Employment vs. Factors Influencing First Employment	13
4. Community Size of First Employment and Factors Influencing First Employment	15
5. Spouse's High School Community Size as a Factor Influencing First Employment	17

## LIST OF FIGURES

Figure	Page
1. Applicant Community Size Preference vs. Graduate Current Community Size	10
2. Applicant High School Community Size vs. Graduate Current Community Size	10

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## ABSTRACT

Introduction: In the 1960s, it was discovered that there was a significant need for more physicians to serve the U.S. population, especially in rural and medically underserved communities. The Physician Assistant profession was built with the hope of being an extension to physicians to help meet these needs. However, there continues to be large numbers of communities in every state that lack access to health care. The purpose of this study was to explore the factors influencing Physician Assistant practice location choice. Methodology: A retrospective cross-sectional study of PA student records in a mid-western rural-focused physician assistant program was conducted. Application data from PA graduates in 2003, 2004, and 2005 were evaluated for desired community size of practice location at the time of application compared to actual job placement and community size after graduation. A written survey was mailed to the same classes of graduates to assess factors that influenced selection of their first and current practice location. Data were analyzed using frequency counts and chi-square tests. Results: There was a 44% response rate from the 126 eligible to participate in the survey. It was noted that 60% of applicants listed their preference specialty as family practice; however, less than one-third of graduates were currently working in the family practice specialty. Similarly, applicants noted a preference to work in rural areas, but upon graduation for their first job and current job they tended to work in urban areas by a large percentage. There were five different factors with significant relationships in regard to PA practice location ( $p < .05$ ): Significant others support of location, quality of life, employment opportunities for the significant other, scope of practice and recreation. A significant others support of the location appeared to be most important. Conclusion: Choice of employment at the time of application compared to graduation was markedly different. Choice of practice location did not appear to be

a decision made by the graduate physician assistant alone, but also in conjunction with their significant other.

## INTRODUCTION

In the early 1960s, it was discovered that there was a significant need for more physicians to serve the current United States population. In particular, there were specific regions where access to healthcare was especially compromised. For example, these regions included rural areas of practice and medically underserved communities. The issue of physician shortage was addressed by Dr. Eugene Stead. He stated, “If we can’t multiply the number of physicians, then maybe we can stretch their effectiveness by giving them extra arms and legs.”[1] Dr. Stead recognized that military corpsmen returning from Vietnam were equipped with medical skills and knowledge. These corpsmen would also be looking for employment once they returned. Therefore, an idea was formulated to utilize these persons to work alongside physicians, resulting in an expanded form of healthcare delivery. This is the foundation upon which the Physician Assistant profession was built.

In 1967, the first class of Physician Assistants graduated from Duke University. This graduating class consisted of four men who were former Navy corpsmen who had completed an intense on-the-job training program. They worked in hospitals or for medical groups. The success of the first graduating class and the needs that they filled led to the desire to continue recruiting candidates for future classes.

### *Literature Review*

In the forty years since the profession began, physician assistants have provided care in rural and medically underserved areas throughout the United States. The American Academy of Physician Assistants has encouraged this growth by supporting legislation promoting healthcare access to these areas. There are currently 137 PA training programs in the United States. There have been many strategies explored and implemented as to how to meet this ongoing need.

Some examples include recruiting students from rural areas, federal funding to assist with tuition cost for students who plan to work in rural communities, and required rotations in rural or medically underserved areas.

Despite emphasis of many programs, such as medical, physician assistant, and nursing, throughout much of the United States to train and prepare students for rural service, there continues to be large numbers of communities in every state that lack proper access to health care. This lack has been acknowledged and has instigated multiple studies to look at several factors that influence a physician assistant to work in a rural or medically underserved community. It was thought to be a multi-factorial decision, but there have also been recognized barriers to employment in these areas, such as lack of performance recognition, increased workload demand, continuous on-call and weekend hours, reimbursement issues, and decreased number of supervising physicians. The shift from primary care to surgical and specialty practices have been influenced by a decreased workload demand in these fields.[2] Physician assistants working in rural settings reported significantly lower levels of satisfaction with professional acknowledgement and respect, 70.7% versus an 83.8% satisfaction from non-rural PAs.[3]

The beginning years of the profession proved a great advantage to the need of underserved communities. Many programs selected students from small communities and sent them back to work in those communities following graduation. With the increase in the number of programs, student recruitment has developed a much broader scope and is not specifically targeting students from small towns. By the year 2000, students were coming from a variety of different cultural and economic backgrounds with varied academic experience, from all different sizes of communities.

In 1977, approximately three-fourths of PAs were employed in primary care and one-half worked in rural communities defined as less than 50,000.[4] As early as 1983, it was discovered that the number of physician assistants in rural practice had dramatically decreased to 25.3%. [5] In that same year, a study of PA graduates performed by Harmon et al found that one particular PA program was highly successful in training students to practice in rural communities. Sixty-seven percent of graduates were practicing in towns of 50,000 or less, and 90% were in primary care compared with the national average of 58%. “Harmon and coworkers warned that PAs would be increasingly subject to the same forces of specialization contributing to both geographic maldistribution of physicians and a shortage of primary care physicians.”[3] This statement was confirmed with a study by Larson et al which found that the percentage of graduates working in towns smaller than 10,000 had dropped by almost half between 1982 and 1991.[3] This study also found that graduates matriculating from rural towns were more likely to work in rural communities and less likely to switch to urban employment. One study performed by Hafferty and Goldberg showed that increased exposure to and training in underserved areas was more likely to result in underserved or rural employment.[6]

Many studies that have looked at factors related to PA rural employment found gender to be a lead determinant. Male physician assistants were more likely than females to practice in smaller communities. With the percentage of female PA students on the rise, it was a natural progression to see a decrease in PA practice in rural areas. In an editorial by Dr. John Bucholtz, he stated that medical students were choosing specialties based on perceived prestige, applied technology, and lifestyle issues.[7] Anecdotally, female PAs who were married tended to follow their spouses accepting jobs in urban settings.

## *Purpose*

The need for clinicians in rural and underserved areas continued to increase, despite studies and implementation of educational strategies to train students for rural service. Since the beginning of the profession 40 years ago, the issue of provider maldistribution had always been on the forefront. This has lead one to be very curious as to why this was still an issue. Was this a problem with no solution? The mission of physician assistants was to fill this gap. However, it seemed that this gap was still significant. The purpose of this study was to explore the factors influencing physician assistant graduates to practice in rural and medically underserved areas rather than communities that do not meet these criteria. Rural was defined as communities with populations less than 50,000.

A review of the literature supported some factors that influenced a student's choice in rural employment. The literature base was incomplete in identifying the magnitude of these factors. There were many more factors that still needed to be examined. As a convenience, the implications of these factors regarding the Wichita State University PA program were addressed. This would not only benefit the future of this particular program, but possibly Physician Assistant Programs nationally. Variables identified could be implemented in screening for future applicants. In addition, students interested in rural practice sites could determine their own compatibility with the characteristics of those who currently practice in rural areas.

## METHODOLOGY

### *Design*

This cross-sectional study was administered through the Department of Physician Assistant at Wichita State University. Blinded demographic information regarding graduate classes of 2003, 2004, and 2005 was provided by the PA Department. Application data was evaluated for desired community size of practice location at the time of application compared to actual job placement and community size after graduation. A written survey consisting of 27 questions of multiple and Likert scale questions was sent to the same graduate classes. There was a 44% response rate from the 126 surveys mailed. A sample of the survey is included in the appendix.

### *Participants*

Data was collected from the classes of 2003-2005. The contact information of these graduates was provided by the administrative staff of the PA department. Application data was coded by departmental staff to remove identifying information, then recoded to match the survey in order to match the application with the completed survey.

### *Measurement*

Graduate respondents were asked a series of general demographic questions about their employment followed by questions designed to assess the factors most important in choosing their first employment situation. The responses were rated on a Likert scale of 1-5, with 1 being equivalent to “extremely important” and 5 being equivalent to “not important at all.”

### *Data*

Data were analyzed using standard statistical tests. Frequency statistics were used to compare applicants’ preference of medical specialty and community size with graduates’ choice

of medical specialty and first employment community size. Chi square tests were used to determine if there were relationships of importance between factor ratings and current employment community size, first employment community size, marital status, and spouse's community size during their high school years.

Surveys were mailed on May 7, 2007 and collected until June 18, 2007. A total of 55 PAs responded, which corresponded to a 44% response rate. All survey data was entered into an Excel spreadsheet and then analyzed using SPSS software version 13.0. The alpha level was set at 0.5.

## RESULTS AND DATA ANALYSIS

The demographic data from the applicants and graduates are listed in Table 1. It was noted that 60% of applicants listed their preference specialty as family practice; however, less than one-third of graduates were currently working in the family practice specialty. Likewise, applicant preference versus actual job placement tended to move into the specialty fields.

Table 1

<b><u>Demographic Characteristics of Applicants and Graduates</u></b>		
	Applicants(n=126)	Graduates(n=55)
<b>Specialty*</b>		
Family Practice	60	30.9
Emergency Medicine	1.8	9.1
Internal Medicine	3.6	10.9
Obstetrics/Gynecology	5.5	3.6
Orthopedics	9.1	18.2
Pediatrics	1.8	0
Other	18.2	27.3
<b>Current Community Size Preference/Practice**</b>		
Urban	19.6	57.6
Rural	80.4	42.2
<b>First Employment Community Size Preference/Practice***</b>		
Urban	19.6	55.6
Rural	80.4	44.4

*\*Specialty for applicant=their preference on application*

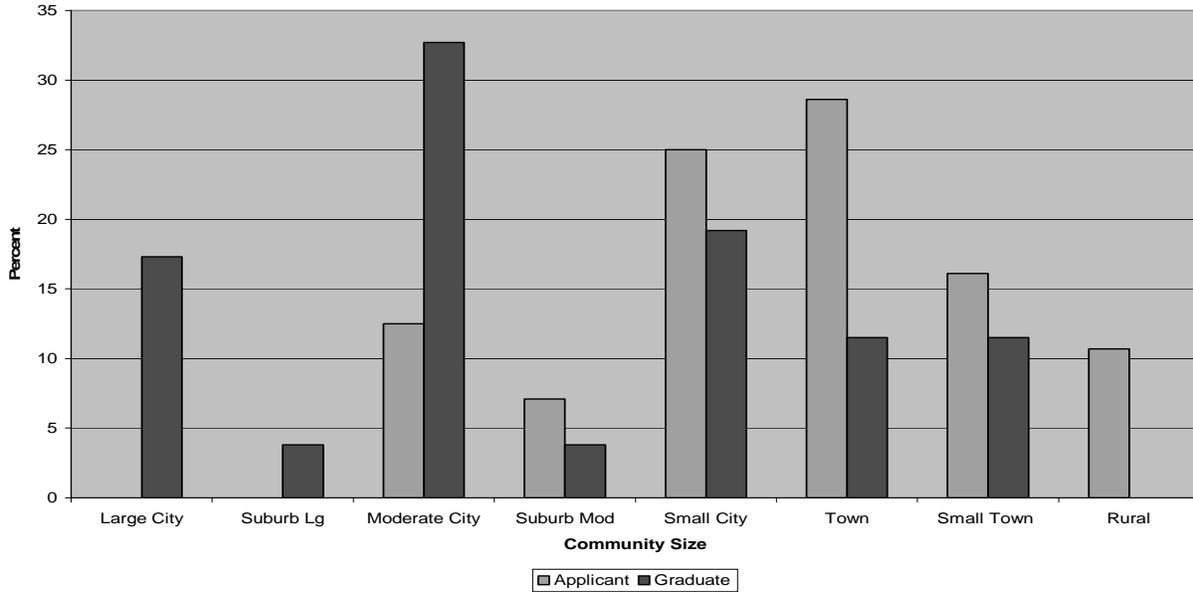
*\*\*Current community size for applicant=their preference on application*

*\*\*\*First employment community size for applicant=their preference on application*

Similarly, applicants noted a preference to work in rural areas, but upon graduation for their first job and current job they tended to work in urban areas by a large percentage (Figures 1-2).

Figure 1.

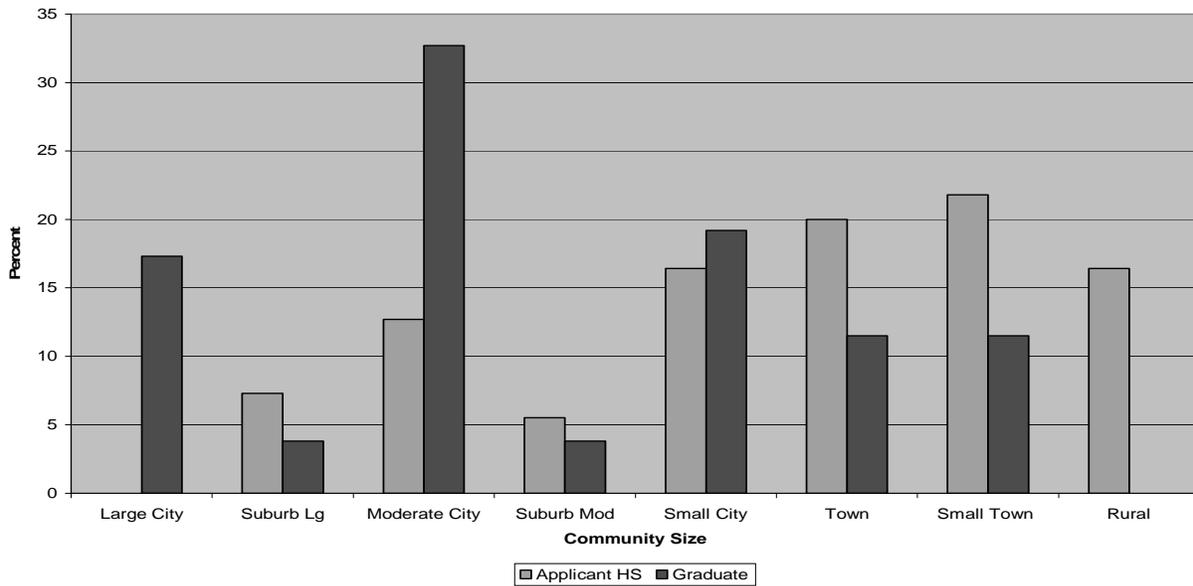
**Applicant Community Size Preference v. Graduate Current Community Size**



\*Note: No value for a community size denotes either no applicants stating a preference for that community size and/or no graduate currently in that community size.

Figure 2.

**Applicant High School Community Size v. Graduate Current Community Size**



There were three factors with significant relationships in regards to marital status as reflected in Table 2. The first factor was the significant other's support of location. Fifty-six

percent of single graduates felt that this factor was neutral to not important at all. Eighty-seven

Table 2

<b>Marital Status and Factors Influencing First Employment (n=55)</b>							
<b>Factor</b>		<b>Extremely Important</b>		<b>Not Important At All</b>			<b>X<sup>2</sup></b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
<b>Salary</b>	<b>Single</b>	25	62.5	6.25	6.25	--	1.235
	<b>Married</b>	12.8	71.8	7.7	7.7	--	
<b>Benefits</b>	<b>Single</b>	18.9	81.1	--	--	--	3.843
	<b>Married</b>	15.4	64.1	12.8	5.1	2.6	
<b>Loans</b>	<b>Single</b>	--	6.30	31.2	25	37.5	4.893
	<b>Married</b>	--	12.9	53.8	7.7	25.6	
<b>Hours</b>	<b>Single</b>	6.2	68.8	25	--	--	5.349
	<b>Married</b>	30.7	51.3	12.8	2.6	2.6	
<b>Call-Time</b>	<b>Single</b>	31.2	43.8	25	--	--	1.57
	<b>Married</b>	41	36.0	17.9	--	5.1	
<b>Location Support</b>	<b>Single</b>	18.7	25	31.3	--	25	14.902*
	<b>Married</b>	46.2	41	12.8	--	--	
<b>Medically Underserved</b>	<b>Single</b>	--	37.5	37.5	18.7	6.3	7.215
	<b>Married</b>	2.6	15.4	61.5	5.1	15.4	
<b>Schools</b>	<b>Single</b>	12.4	25	18.8	6.3	37.5	4.781
	<b>Married</b>	5.1	38.5	35.9	2.6	17.9	
<b>Patient Relationships</b>	<b>Single</b>	6.2	56.3	25	12.5	--	1.084
	<b>Married</b>	13.1	55.3	15.8	15.8	--	
<b>Job Responsibility</b>	<b>Single</b>	12.4	75	6.3	6.3	--	0.747
	<b>Married</b>	15.4	64.1	12.8	7.7	--	
<b>Scope of Practice</b>	<b>Single</b>	6.2	56.3	25	12.5	--	0.578
	<b>Married</b>	12.9	48.7	25.6	12.8	--	
<b>Education Resources</b>	<b>Single</b>	--	12.5	50	12.5	25	1.702
	<b>Married</b>	--	10.6	42.1	28.9	18.4	
<b>Recreation</b>	<b>Single</b>	6.2	62.5	12.5	18.8	--	7.154
	<b>Married</b>	2.6	30.8	33.3	20.5	12.8	

Table 2 continued

<b>Town Aesthetics</b>							1.089
	<b>Single</b>	--	31.2	43.8	12.5	12.5	
	<b>Married</b>	2.6	20.5	48.7	12.8	15.4	
<b>Employment for Significant Other</b>							10.214 <sup>^</sup>
	<b>Single</b>	18.8	31.2	25	--	25	
	<b>Married</b>	30.7	53.8	10.3	2.6	2.6	
<b>Health Care Access</b>							2.942
	<b>Single</b>	6.3	31.2	31.2	12.5	18.8	
	<b>Married</b>	5.3	28.9	28.9	2.7	34.2	
<b>Family</b>							2.81
	<b>Single</b>	6.2	56.3	31.3	6.2	--	
	<b>Married</b>	20.5	53.8	20.5	2.6	2.6	
<b>Technology</b>							3.701
	<b>Single</b>	6.2	43.8	43.8	6.2	--	
	<b>Married</b>	--	35.9	48.7	10.3	5.1	
<b>Hometown Location</b>							8.342
	<b>Single</b>	--	31.2	62.5	6.3	--	
	<b>Married</b>	10.2	30.8	28.2	15.4	15.4	
<b>Quality of Life</b>							9.749 <sup>+</sup>
	<b>Single</b>	31.2	37.5	31.3	--	--	
	<b>Married</b>	50	44.8	2.6	2.6	--	
<b>Job Satisfaction</b>							3.718
	<b>Single</b>	12.5	62.4	6.3	12.5	6.3	
	<b>Married</b>	29.0	57.9	2.6	2.6	7.9	

\*df=3, p<0.05

<sup>^</sup>df=4, p<0.05

<sup>+</sup>df=3, p<0.05

percent of married graduates felt it was extremely important to important. The second factor was employment opportunities for their significant other. Fifty percent of single graduates rated this as neutral to not important at all. Comparatively, only 15.5% of married graduates shared the same viewpoint. Eighty-five percent of married graduates rated this factor as extremely important to important. The third factor was quality of life for the entire family. Sixty-nine percent of single graduates felt that this factor was extremely important to important, whereas 94.7% of married graduates had given it that ranking.

Current employment included all those who were still at their first employment site. Urban was defined as communities of moderate size or greater, with populations more than 50,000. Only one factor was found to have significant relationship between those living in

urban and rural areas: employment opportunities for their significant other. For the urban setting, 83.3% of respondents rated this factor as extremely important to important, compared to only 59.1% of those employed in the rural setting (Table 3).

Table 3

**Community Size of Current Employment vs. Factors Influencing First Employment (n=55)**

Factor		Extremely Important		Not Important At All			X <sup>2</sup>
		1	2	3	4	5	
Salary	Urban	10	66.7	10	10	--	1.633
	Rural	22.8	68.2	4.5	4.5	--	
Benefits	Urban	20	63.3	6.7	6.7	3.3	3.305
	Rural	13.7	72.7	13.6	--	--	
Loans	Urban	--	6.6	46.7	16.7	30	1.244
	Rural	--	13.6	50	9.1	27.3	
Hours	Urban	20	60	13.4	3.3	3.3	2.632
	Rural	27.3	50	22.7	--	--	
Call-Time	Urban	36.7	36.7	23.3	--	3.3	0.267
	Rural	40.9	36.4	18.2	--	4.5	
Location Support	Urban	30	50	16.7	--	3.3	6.605
	Rural	50	18.2	18.2	--	13.6	
Medically Underserved	Urban	3.3	16.7	56.7	3.3	20	5.422
	Rural	--	27.4	54.5	13.6	4.5	
Schools	Urban	6.7	30	36.7	3.3	23.3	0.928
	Rural	4.5	41.0	27.3	4.5	22.7	
Patient Relationships	Urban	6.9	44.8	27.6	28.7	--	6.85
	Rural	13.7	72.7	9.1	4.5	--	
Job Responsibility	Urban	20	60	13.3	6.7	--	1.591
	Rural	9.1	72.7	9.1	9.1	--	
Scope of Practice	Urban	10	40	36.7	13.3	--	6.145
	Rural	13.6	68.2	9.1	9.1	--	
Education Resources	Urban	--	13.8	41.4	24.1	20.7	0.318
	Rural	--	9.1	45.5	22.7	22.7	

Table 3 continued

<b>Recreation</b>							5.046
	<b>Urban</b>	--	33.3	36.7	16.7	13.3	
	<b>Rural</b>	4.5	45.5	18.2	27.3	4.5	
<b>Town Aesthetics</b>							2.021
	<b>Urban</b>	--	23.3	53.3	6.7	16.7	
	<b>Rural</b>	--	27.3	40.9	18.2	13.6	
<b>Employment for Significant Other</b>							10.777*
	<b>Urban</b>	20	63.4	10	3.3	3.3	
	<b>Rural</b>	36.4	22.7	22.7	--	18.2	
<b>Health Care Access</b>							7.178
	<b>Urban</b>	3.3	30	40	--	26.7	
	<b>Rural</b>	9.6	23.8	19	14.3	33.3	
							1.815
<b>Family</b>							
	<b>Urban</b>	20	53.4	20	3.3	3.3	
	<b>Rural</b>	13.7	50	31.8	4.5	--	
<b>Technology</b>							4.51
	<b>Urban</b>	3.3	26.7	53.3	10	6.7	
	<b>Rural</b>	--	50	40.9	9.1	--	
<b>Hometown Location</b>							4.663
	<b>Urban</b>	10	23.3	46.7	13.3	6.7	
	<b>Rural</b>	4.5	40.9	27.3	9.1	18.2	
<b>Quality of Life</b>							3.142
	<b>Urban</b>	41.4	48.3	6.9	3.4	--	
	<b>Rural</b>	50	31.8	18.2	--	--	
<b>Job Satisfaction</b>							1.263
	<b>Urban</b>	24.1	58.6	3.5	3.5	10.3	
	<b>Rural</b>	22.8	59.1	4.5	9.1	4.5	

\*df=4, p<0.05

Community size of first employment showed three factors with a significant relationship between those living in urban and rural areas. The first factor was a wide scope of practice. For urban respondents, 58% found it neutral to minimally important. Eighty-eight percent of rural participants rated it as extremely important to important. The second factor was the town's recreational resources and cultural activities. Over one-half of graduates employed in the rural setting rated this factor as important. Sixty-five percent of graduates in the urban setting felt this to be neutral to not important at all. The last factor was employment opportunities for their significant other. Ninety percent of urban employees rated this factor as extremely important to important, compared to just over one-half of the rural employees (Table 4).

Table 4

**Community Size of First Employment and Factors Influencing First Employment (n=55)**

Factor		Extremely Important		Not Important At All			X <sup>2</sup>
		1	2	3	4	5	
Salary	Urban	16.1	64.5	9.7	--	--	1.347
	Rural	16.6	75	4.2	4.2	--	
Benefits	Urban	16.1	67.7	6.5	6.5	3.2	2.888
	Rural	16.7	70.8	12.5	--	--	
Loans	Urban	--	3.1	45.2	19.4	32.3	6.608
	Rural	--	20.8	50	4.2	25	
Hours	Urban	19.4	64.5	12.9	3.2	--	3.974
	Rural	29.2	45.8	20.8	--	4.2	
Call-Time	Urban	35.5	41.9	19.4	--	3.2	0.445
	Rural	41.7	33.3	20.8	--	4.2	
Location Support	Urban	32.3	48.4	16.1	--	3.2	5.242
	Rural	45.9	20.8	20.8	--	12.5	
Medically Underserved	Urban	3.2	16.1	51.6	9.7	19.4	4.419
	Rural	--	29.2	58.3	8.3	4.2	
Schools	Urban	9.6	35.5	32.3	--	22.6	3.242
	Rural	4.2	33.3	29.2	8.3	25	
Patient Relationships	Urban	10	43.4	23.3	23.3	--	6.041
	Rural	12.5	70.8	12.5	4.2	--	
Job Responsibility	Urban	19.3	58.1	16.1	6.5	--	3.865
	Rural	8.3	79.2	4.2	8.3	--	
Scope of Practice	Urban	9.7	32.3	41.9	16.1	--	13.18*
	Rural	12.5	75	4.2	8.3	--	
Education Resources	Urban	--	10	46.6	26.7	16.7	0.793
	Rural	--	12.5	41.7	20.8	25	
Recreation	Urban	6.5	29	35.5	12.9	16.1	11.101^
	Rural	--	54.1	16.7	29.2	--	
Town Aesthetics	Urban	3.2	16.1	54.8	6.5	19.4	6.656
	Rural	--	33.4	37.5	20.8	8.3	

Table 4 continued

<b>Employment for Significant Other</b>							17.25 <sup>+</sup>
	<b>Urban</b>	19.3	71	6.5	--	3.2	
	<b>Rural</b>	37.4	16.7	25	4.2	16.7	
<b>Health Care Access</b>							2.282
	<b>Urban</b>	3.2	29	35.6	3.2	29	
	<b>Rural</b>	8.7	30.4	21.8	8.7	30.4	
<b>Family</b>							4
	<b>Urban</b>	19.4	61.3	16.1	3.2	--	
	<b>Rural</b>	12.5	45.8	33.3	4.2	4.2	
<b>Technology</b>							6.059
	<b>Urban</b>	3.2	25.8	54.8	9.7	6.5	
	<b>Rural</b>	--	54.2	37.5	8.3	--	
<b>Hometown Location</b>							2.204
	<b>Urban</b>	9.7	29	41.9	12.9	65	
	<b>Rural</b>	4.2	33.3	33.3	12.5	16.7	
<b>Quality of Life</b>							5.363
	<b>Urban</b>	43.4	50	3.3	3.3	--	
	<b>Rural</b>	45.9	33.3	20.8	--	--	
<b>Job Satisfaction</b>							1.376
	<b>Urban</b>	26.7	53.3	3.3	6.7	10	
	<b>Rural</b>	20.7	66.7	4.2	4.2	4.2	

\*df=3, p<0.05

^df=4, p<0.05

+df=4, p<0.05

There were no significant relationships in regards to the high school community size of the spouse (Table 5).

Table 5

**Spouse's High School Community Size as a Factor Influencing First Employment (n=55)**

Factor		Extremely Important		Not Important At All			$X^2$
		1	2	3	4	5	
Salary	Urban	13.3	60	20	6.7	--	6.195
	Rural	14.1	81.5	--	3.7	--	
Benefits	Urban	13.3	60	20	6.7	--	3.951
	Rural	18.5	70.4	7.4	--	3.7	
Loans	Urban	--	6.7	60	6.7	26.6	0.998
	Rural	--	14.9	48.1	11.1	25.9	
Hours	Urban	26.7	40	26.7	6.6	--	4.44
	Rural	25.9	59.3	11.1	--	3.7	
Call-Time	Urban	26.8	46.7	26.8	--	--	4.494
	Rural	51.9	25.9	14.8	7.4	--	
Location Support	Urban	40	3.3	6.7	--	--	2.655
	Rural	51.9	29.6	18.5	--	--	
Medically Underserved	Urban	6.7	6.7	60	6.7	19.9	2.912
	Rural	--	18.5	59.3	7.4	14.8	
Schools	Urban	6.7	60	19.9	6.7	6.7	6.36
	Rural	3.7	33.3	37	--	26.0	
Patient Relationships	Urban	14.3	50	14.3	21.4	--	.653
	Rural	11.1	63	11.1	14.8	--	
Job Responsibility	Urban	26.7	53.3	13.3	6.7	--	3.31
	Rural	7.4	74.1	14.8	3.7	--	
Scope of Practice	Urban	20	46.7	20	13.3	--	2.292
	Rural	7.4	51.9	33.3	7.4	--	
Education Resources	Urban	--	14.3	42.9	35.7	7.1	1.199
	Rural	--	11.2	44.4	25.9	18.5	
Recreation	Urban	--	20	46.7	20	13.3	3.967
	Rural	7.4	40.8	25.9	18.5	7.4	
Town Aesthetics	Urban	--	20	40	13.3	26.7	3.526
	Rural	3.7	25.9	51.9	11.1	7.4	

Table 5 continued

<b>Employment for Significant Other</b>							5.303
	<b>Urban</b>	19.9	60	6.7	6.7	6.7	
	<b>Rural</b>	40.8	48.1	11.1	--	--	
<b>Health Care Access</b>							2.203
	<b>Urban</b>	6.7	33.3	33.3	--	26.7	
	<b>Rural</b>	3.8	26.9	23.1	7.7	38.5	
<b>Family</b>							3.063
	<b>Urban</b>	26.7	53.3	13.3	--	6.7	
	<b>Rural</b>	18.5	55.6	22.2	3.7	--	
<b>Technology</b>							3.902
	<b>Urban</b>	--	20	60	13.3	6.7	
	<b>Rural</b>	--	48.2	44.4	3.7	3.7	
<b>Hometown Location</b>							1.959
	<b>Urban</b>	13.3	13.3	40.1	13.3	20	
	<b>Rural</b>	7.4	44.4	25.9	14.9	7.4	
<b>Quality of Life</b>							1.959
	<b>Urban</b>	53.3	40	6.7	--	--	
	<b>Rural</b>	50	50	--	--	--	
<b>Job Satisfaction</b>							4.867
	<b>Urban</b>	35.8	50	7.1	--	7.1	
	<b>Rural</b>	18.5	63	--	11.1	7.4	

## DISCUSSION

In summary, there were five different factors that played a significant role in the physician assistant's decision of practice location: spouse's support of location, quality of life, employment opportunities for significant other, scope of practice, and recreation. Of these factors, employment opportunities for the significant other was the only one found to be prevalent in all areas examined. This may have been due to the fact that the majority of physician assistants surveyed were married at the time.

The reader should be encouraged to interpret this data and keep in mind that the study had various limitations. The sample size was small, and isolated groups of physician assistants were surveyed. For example, the population surveyed was a convenience sample from one physician assistant program only. There may also have been biases present in the survey design; however, with regards to the overall design and analysis of the study, efforts were made to dispel any inherent threats to validity. For example, the data was entered by one researcher and then checked for accuracy by another researcher. This format minimized any chance of error in data entry.

The survey was comprised of a broad range of factors. However, there may have been additional factors not addressed that still played an important role in one's decision as to where to practice. In a study by Evans, it was noted that factors may have differed in different parts of the country.[8] A possible limitation of this study was the definition of rural. In this study, rural communities were defined as populations less than 50,000. However, some literature sources defined it as any area with a shortage of manpower for health care, regardless of population. Underserved and shortage of manpower were terms that were often used interchangeably in the literature.

### *Summary of Results as Compared to the Literature*

The literature base was inconclusive in identifying factors influencing the location decisions of practitioners.[9] In a study by Backer, a wide scope of practice was found to be significant with regards to choice of rural practice locations. This finding was consistent with the data obtained in this current study. Close relationships with patients were also found to be a significant factor; however, the survey results were not supportive of this factor. Quality of life was a significant factor of influence in Backer's study; this study found no significant relationships.

In a study by Hughes, graduation from high school in a rural area was associated with rural practice.[10] Likewise, Quigley and Fredrickson found that "the odds of rural employment were strongly associated only with rural home town, but not with GPA, age, gender, race or higher previous academic degree." [11] This study showed no factors supporting a level of significance with regards to the high school community size of the spouse. However, Gairola found that "the larger the size of the city where the spouse grew up, the greater the proportion of graduates practicing in rural areas." [12]

Further literature regarding spousal influence was found in a study by Grimes; spousal attitude was not ranked number one. In this study however, the spouse's support of location was a primary factor of significance. Data in this paper reflected a greater level of importance placed on the town's recreational activities, whereas it was reported in Grime's study as a very low priority. [9]

### *Overall Significance of the Study Findings and Opportunities for Further Research*

Results indicated that certain factors influenced a provider's decision in practice location. For marital status, factors pertaining to a significant other and family were rated as extremely

important to married participants. None of these factors demonstrated significant statistical relationships to the single participants in the study. Participants who practiced in a rural setting for their first employment considered three factors as significant. A wide scope of practice, the first factor chosen, typically was found in a rural practice setting, unlike an urban setting where specialty practices were numerous. The second factor pointed to the idea that even though they were in a rural setting, they still wanted adequate recreational resources and cultural activities available. Once again, the significant other's opportunities for employment was extremely important as the third factor. The combination of these findings indicate a key feature in linking the gap between the need for rural providers and the supply or desire of rural providers. A rural provider typically had another person's needs to consider: their spouse. It appears that physician assistants in this study would be less likely to choose employment in an environment that would not support their spouse. A decreased opportunity for employment typical of rural community would be a deterrent to a PA's rural practice decision.

There is certainly opportunity for further research on this topic. There are still many other factors that could be addressed, such as potential for rapid practice growth, prestige, educational and employment background. It is possible that the examination of these factors may provide new evidence and reasoning as to the gap of physician assistants in rural practice. These variables may also be considered in the recruitment of physician assistant students as well as for screening potential applicants. The literature addressed the fact that certain barriers may prevent practitioners from choosing a rural practice site. Identifying and addressing these barriers may alleviate the shortage of health care providers in rural communities in the future, for instance, whether or not the number of supervising physicians are declining in rural areas.

## *Conclusion*

The question should be raised: “Are we really getting to the root issue of what calls graduate physician assistants to urban areas over rural areas with such magnitude?” This study has attempted to address some of the elements underlying this ongoing problem. It has been found that “graduates who study in an educational setting with a mission-driven commitment to rural health, care for these populations in their professional practice.”[13] However, it was the conclusion of this research that choice of practice location was not a decision made by the graduate physician assistant alone, but also in conjunction with their significant other. This seemed to be more influential than any other factor alone. Further research will be required to determine whether the findings of this study can be generalized to the physician assistant profession as a whole.

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APPENDIX

# **Factors Influencing Rural Physician Assistant Practice**

## **Survey**

Graduate Students:

Angela Armour, PA-S

Robin Williamson RN, BSN, PA-S

Wichita State University

Faculty Advisor: Richard Muma, PhD, PA-C

Wichita State University

**Dear Physician Assistant:**

The following survey was developed for our Wichita State University Physician Assistant (PA) Master Research Project to evaluate the factors influencing rural Physician Assistant practice. Along with approximately 200 other individuals, this survey will ask about the level of importance you assigned to certain issues concerning your employment after graduation. Additionally, your survey responses will be matched to your application you completed when you applied to the WSU PA Program in an effort to see if your initial thoughts on rural practice changed from the time of application to graduation. The results will be beneficial to those considering rural or underserved practice and possibly PA programs around the country. It is not likely that participation will cause you risk; however, to minimize risk every effort will be made to not share your individual results and only report aggregate results, which will eliminate harm to you, protect your privacy and prevent discrimination of any kind. You will not incur any personal expense, other than time, in connection with this research project. This survey has been approved by the Wichita State University Institutional Review Board. Participation is voluntary and consent to participate in this study is implied if you complete and return the survey. **Approximate time to complete the survey is 10 minutes.** Thank you for your time and participation. Please make note of contact information below for any questions or concerns.

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Office of Research Administration 316/978-3285

**Section I: General Information**

1. Which best represents your current major practice specialty? (Please select only one)
  - A. Family Practice
  - B. Internal Medicine
  - C. Internal Medicine subspecialty; specify \_\_\_\_\_
  - D. Emergency Medicine
  - E. Cardiology
  - F. OB/GYN
  - G. Pediatrics
  - H. Psychiatry
  - I. General Surgery
  - J. Surgery subspecialty; specify \_\_\_\_\_
  - K. Academic
  - L. Other; specify \_\_\_\_\_
  - M. Not in clinical practice
  
2. What is size of the community in which you are currently practicing? (Please select only one)
  - A. Large City (population 500,000 or more)
  - B. Suburb of a large city
  - C. Moderate size (population 50,000 to 499,999)
  - D. Suburb of moderate size city
  - E. Small City (population 10,000 to 49,999 – other than suburb)
  - F. Town (population 2,500 to 9,999 – other than suburb)
  - G. Small town (population less than 2,500)
  - H. Rural/Unincorporated area
  
3. What is/was the size of the community of your first employment post-graduation? (Please select only one)
  - A. First job is current job
  - B. Large city (population 500,000 or more)
  - C. Suburb of a large city
  - D. Moderate size city (population 50,000 to 499,999)
  - E. Suburb of moderate size city
  - F. Small city (population 10,000 to 49,999 – other than suburb)
  - G. Town (population 2,500 to 9,999 – other than suburb)
  - H. Small town (population less than 2,500)
  - I. Rural/unincorporated area
  
4. What was your marital status during your first employment?
  - A. Single
  - B. Married
  - C. Separated
  - D. Divorced
  - E. Widowed
  
5. Where did your spouse (during first employment) spend the major portion of his/her high school years? (Please select only one)
  - A. Not applicable
  - B. Large city (population 500,000 or more)
  - C. Suburb of a large city
  - D. City of moderate size (population 50,000 to 499,999)
  - E. Suburb of moderate size city
  - F. Small city (population 10,000 to 49,999 – other than suburb)
  - G. Town (population 2,500 to 9,999 – other than suburb)
  - H. Small town (population less than 2,500)
  - I. Rural/unincorporated area

**Section II: Personal Factors**

Please rate the following factors according to their importance in making the decision for your **first employment** as a PA.  
Please check only one box for each factor.

		Extremely Important	Important	Neutral	Minimally Important	Not Important At All
6.	Salary					
7.	Benefits/Incentive programs offered					
8.	Student loan reimbursement					
9.	Hours of work required per week					
10.	Amount of call time required					
11.	Significant other's support of location					
12.	Medically underserved designation of practice site					
13.	Quality of schools (i.e., for children)					
14.	Opportunity to build long term relationships with patients					
15.	Level of responsibility required for position					
16.	Wide scope of practice					
17.	Distance to higher education resources					
18.	Town's recreational resources and cultural activities					
19.	Town's general wealth and aesthetic appearance					
20.	Employment opportunities for your significant other					
21.	Your access to healthcare growing up (i.e., difficulty in getting health care needs met)					
22.	Proximity of family to practice location					
23.	Availability of the latest personal (i.e., Internet and computer access) and practice technology (i.e., CT, MRI, etc.)					
24.	Geographic location where you grew up					
25.	Quality of life for entire family					
26.	Other _____					

27. Please rate your satisfaction level concerning your choice of first employment:

Extremely satisfied                  Satisfied                  Neutral                  Unsatisfied                  Extremely Unsatisfied

**Thank you for completing this survey!**  
**Please return in the postage paid envelope.**

## Vitae

Name: Angela F. Armour

Date of Birth: 12/16/1980

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### Education:

2006-2008            Master – Physician Assistant (MPA)  
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1999-2003           Bachelor of Arts in Biology  
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### Professional Experience:

2005-2006           Rehabilitation Aide  
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