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Senior Project

Title: Rural and Urban Comparison of Different Types of Optometric Care in the State of North Carolina

Description: I have sent out a numbers of surveys to currently working optometrists in the state of North Carolina to find out what types of optometric services they offer and how much of their time is dedicated to these specific services or specialties. Theses surveys will be reviewed and comparisons will be made based on urban and rural locations and different modes of practice. These comparisons of optometric care settings will show differences, and similarities that will be analyzed based on location. These results will be further analyzed to show what type of care an OD working in North Carolina will most likely be involved in.

To start my comparison I came up with a survey that was mailed out to optometrists in the state of North Carolina (fig.1). The survey took into account three areas of analysis. These include areas where practicing, services provided and mode of practice. Areas Where Practicing allows the provider to choose between an urban or rural setting. Services provided inquires on the types practice the provider is involved in. It lets the doctor choose from primary care, contact lenses, binocular vision/vision therapy, low vision, pediatrics, ocular disease and pre/post-op surgery. The survey also leaves a space to approximate the percentage of time that is dedicated to each service. The last area the survey takes into account is the mode of practice the provider is

involved in. The Doctor can choose from either self-employed or employed. The self-employed category includes the following choices: solo practice, partnership/group, shared expense arrangement, franchise owner, and independent contractor. The employed category is given the following choices: associateship, academia, military, HMO, ophthalmologist, corporate, industry, residency, VA, and public health services.

The providers that were chosen for the survey were taken from the North Carolina Optometric Society website. The state was divided into 12 districts. They include Catawba Valley, Coastal, Eastern, Mountain, Nantahala, Northeastern, Piedmont, Sandhills, Southeastern, Triad, and Winston-Salem districts. The whole state of North Carolina listed 829 providers that were members of the North Carolina Optometric Society. These 829 providers where further divided into amount of providers per individual district. Based on the number of members per district, twenty percent of them were chosen to receive the surveys. The number of providers chosen was rounded up or down to equal whole numbers. The outcomes of chosen providers for each district is as follows: Catawba 61 total providers x 20% = 12.2 rounded up ~ 12 providers, Coastal 54(.20) = 10.8 ~ 11, Eastern 320(.20) = 64 ~ 64, Mountain 47(.20) = 9.4 ~ 9, Nantahala 17 (.20) = 3.4 ~ 3, Northeastern 40(.20) = 8 ~ 8, Piedmont 124(.20) = 24.8 ~ 25, Sandhills 66(.20) = 13.2 ~ 13, Southeastern, 41(.20) = 8.2 ~ 8, Triad 2(.20) = .4 ~ 0 [2 were sent], Winston-Salem 57(.20) = 11.4 ~ 11. The providers that were to receive the surveys were then chosen based on city population to approximately include 50% urban and 50% rural providers. In total 166 surveys were then sent.

From the 166 surveys that were sent only 87 people currently responded. That gives a 52.4% response rate if 166 divide 87. This is approximately 10.5 % of the

optometrists that were listed in the North Carolina Optometric Society website. Most of the people that were placed in the rural/urban category marked the same response on the survey. However there were a couple of people that wrote in suburban area themselves. These surveys were grouped together with the urban surveys.

Of the 87 that responded 38 of them identified their area of practice as rural, and 49 as urban. The urban and rural surveys were then separated and calculated as two individual groups. For the urban group services provided, the total percentages were added up and divided by the total number of urban providers that responded to the survey to give percent averages. The results showed the following (fig. 2&3): 47.1% primary care, 24.2% contact lenses, 0.6% binocular vision/vision therapy, 1.3% low vision, 6.1% pediatrics, 13.5% ocular disease, and 7.7% pre & post-op. Mode of practice percentages for the urban group were calculated by adding up the individual modes of practice chosen divided by the total amount of providers included in the urban group. The results were as follows; self-employed: solo practice 34.5%, partnership/group 27.6 %, shared expense arrangement 1.7%, franchise owner 3.4%, independent contractor 6.9%; employed: associateship 12.1%, academia 1.7%, military 0.0%, HMO 0.0%, ophthalmologist 5.2%, corporate 6.9%, industry 0.0%, VA 0.0%, public health services 0.0 %, co-management center 0.0%. The rural results for services provided were as follows (fig. 2&3): 43.5% primary care, 18.0% contact lenses, 0.7% binocular vision/vision therapy, 0.6% low vision, 5.5% pediatrics, 23.9% ocular disease, and 6.9% pre&post-op. The percentage results for the rural group mode of practice are; self-employed: solo practice 48.8%, partnership/group 23.3 %, shared expense arrangement 0.0%, franchise owner 4.7%, independent contractor 0.0%; employed: associateship 11.6%, academia 0.0%, military

0.0%, HMO 0.0%, ophthalmologist 7.0%, corporate 2.3%, industry 0.0%, VA 0.0%, public health services 0.0 %, co-management center 2.3%.

When analyzing and comparing the rural and urban groups side by side the amount of time dedicated to each type of service is very similar. The only two significant areas that were slightly different were contact lenses and ocular disease. The urban group had dedicated 24.2 % of its time to CL while the rural group showed 18.0%. One reason for this might be because of a greater need and awareness for contact lenses in the urban environment. Ocular disease showed that the urban group dedicated a percentage of 13.5% of its time while the rural group was slightly higher at 23.9%. This may have been because of a greater need to treat disease and not refer out due to the limited rural resources. The similarities between both groups seem to carry over in the area of mode of practice. The only two minor noticeable differences is a higher percentage of solo practices in rural settings verses urban. Almost forty-nine percent of rural providers were in a solo practice compared to almost thirty-five percent of the urban ones. This is a fourteen percent difference. This again could be because of a greater need for private practice type services needed in the rural areas because of the limited availability. The other area of significance was partnership and group practice. 27.6% of the urban providers practiced in a group/partnership mode while 23.3% of the rural was involved in that same type of practice. It may be that since rural optometrists are more scares than combined together as in urban places, that it is easier to make a group/partnership type setting in the urban areas.

The surveys can be further analyzed on an individual basis to compare mode of practice and services provided for a specific service such as primary care or contact

lenses. There was no real trend. The data showed that there were differences in modes of practices in both rural and urban areas. There was no clear-cut evidence that most solo practice practitioners were doing only a certain percentage of primary care that differed from that of a group/partnership practitioner. The one noticeable was of the co-management centers doing mostly pre and post op and ocular disease. Mostly every mode of practice showed diversity in what services they provided. There may become a trend if more surveys were sent out and received. One aspect that this might affect might corporate franchises that might concentrate on PC and CL's rather than disease. Another trend might be of VA, and ophthalmologists employed practitioners seeing more disease rather than primary care and contact lenses.

A comparison was made of the national numbers on mode of practice base on the Highlights 2002 AOA Scope of Practice Survey. The survey showed different groupings for self-employed and employed options. The self-employed groups and results were as follows (fig. 8): solo 42.8%, partnership/group 32.7%, franchise owner/shared expense arrangement 4.7%, independent contractor 3.7%, and other 0.2%. The employment group and results were: optometry/associateship 4.7%, HMO 0.8%, ophthalmologist 6.2%, hospital/clinic/other multidisciplinary (academia, military, residency, VA and co-management center) 1.7%, optical chain (corporate) 0.8%, and other (industry, public health services) 1.7%. In order to compared the two surveys more closely, the North Carolina survey was modified and some categories that were separated were combined. The result of our survey from the state of North Carolina was as follows. The self-employed groups and results were (fig. 8): solo 40.6%, partnership/group 25.7%, franchise owner/shared expense arrangement 5.0%, independent contractor 4.0%, and

other 0.0%. The employment group and results were: optometry/associateship 12.8%, HMO 0.0%, ophthalmologist 5.9%, hospital/clinic/other multidisciplinary (academia, military, residency, VA and co-management center) 2.0%, optical chain (corporate) 0.8%, and other (industry, public health services) 0.0%. When comparing these two results, they are almost identical with two exceptions. One is in the optometry/associateship group and the other in the optical chains group. This shows that there are more optometrists working in chains and in associateship type practices than the rest of the country. The data may also be overlapping b/w partnership/group and optometry/associateship modes of practice.

The data can be further analyzed based on districts, but due to the limited number of responders to the survey the districts were divided into three regions, mountains, central, and coastal. The mountain region includes the Catawba Valley, Mountain and Nantahala districts. The central region includes the Eastern, Piedmont, Sandhills, Triad, and Winston-Salem districts. The coastal region includes the Coastal, Northeastern, and Southeastern districts. These were the results for the rural mountain region optometrists (fig. 4&5): PC 42.0%, CL 17.7%, BV/VT 1.1%, LV 1.1%, PEDS 8.9%, OD 21.8%, PRE & POST-OP 7.3%, solo practice 33.33%, partnership/group 33.3%, and ophthalmologist 22.2%, and co-management center 11.1%. The results for the rural central region optometrists were: PC 48.0%, CL 19.8%, BV/VT .7%, LV .7%, PEDS 4.2%, OD 20.3%, PRE & POST-OP 6.3%, solo practice 42.9%, partnership/group 28.6%, franchise owner 9.5%, associateship 14.3%, and ophthalmologist 4.8%. The results for the rural coastal region were as follows: PC 39.2%, CL 16.0%, BV/VT .6%, LV .1%, PEDS 5.6%, OD 31.6%, PRE & POST-OP 7.8%, solo practice 69.2%, partnership/group 7.7%,

associateship 15.4%, and corporate 7.7%. These were the results for the urban mountain region optometrists (fig. 6&7): PC 53.6%, CL 23.0%, BV/VT .6%, LV 0.0%, PEDS 10.4%, OD 7.4%, PRE & POST-OP 5.0%, solo practice 33.33%, partnership/group 22.2%, shared expense arrangement 11.1%, independent contractor 11.1% and associateship 22.2%. The results for the urban central region optometrists were: PC 44.4%, CL 25.1%, BV/VT .5%, LV 1.5%, PEDS 5.4%, OD 14.1%, PRE & POST-OP 8.9%, solo practice 35.1%, partnership/group 32.4%, franchise owner 2.7%, independent contractor 8.1%, associateship 10.8%, academia 2.7%, and ophthalmologist 8.1%. The results for the urban coastal region were as follows: PC 51.2%, CL 21.2%, BV/VT 0.0%, LV 0.0%, PEDS 4.7%, OD 16.7%, PRE & POST-OP 5.5%, solo practice 28.62%, partnership/group 14.3%, franchise owner 7.1%, associateship 14.3%, ophthalmologist 7.1%, and corporate 28.6%.

When comparing the rural optometrists within the three regions for services provided the numbers are very similar except in the area of ocular disease. The coastal rural optometrists were doing approximately 10% more disease work. The modes of practice for rural regions were a little different. The results seemed to be a little scattered. A lot of this was probably due to the small sample size and do not reflect actual results. This caused some of the less popular modes of practice not to be present in some regions while present in others. The biggest, most dramatic, and significant difference was in the solo practice mode of the Coastal region. The result was 69.2% solo practice with a low percent in the partnership/group mode of practice. Compared to the other two regions that were in the low forties and thirties for solo practice with a higher partnership percentage.

The comparisons for the results of the three urban regions were very similar for services provided. The significant difference was in mode of practice. The central region had a higher percentage in the associateship practices than both the mountain and coastal region. Also of importance was the higher number of optometrists working in the corporate setting for the coastal region. The rest of the difference were minor and probably skewed to the small sample size and were not taken into account.

Survey 1

name _____

working address _____

_____

check and fill in all that applies

1. area where practicing:

urban __ rural __

2. services provided and approximate percentage dedicated to each:

PC _____%

CL _____%

BV/VT _____%

LV _____%

PEDS _____%

OCULAR DISEASE _____%

PRE/POST-OP _____%

3. mode of practice involved in:

SELF-EMPLOYED:

Solo Practice __

Partnership/Group __

Shared Expense Arrangement __

Franchise Owner __

Independent Contractor __

EMPLOYED:

Associateship __

Academia __

Military __

HMO __

Ophthalmologist __

Corporate __

Industry __

Residency __

VA __

Public Health Services __

CO-Management Center __

FIGURE 1

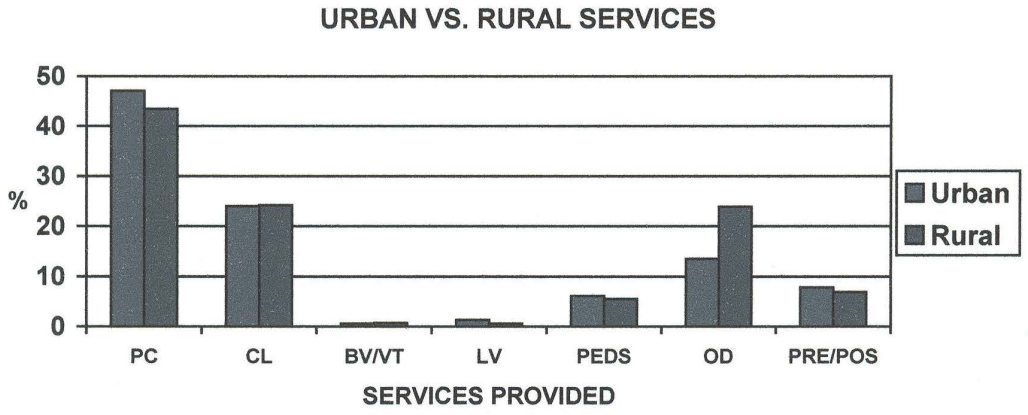

FIGURE 2

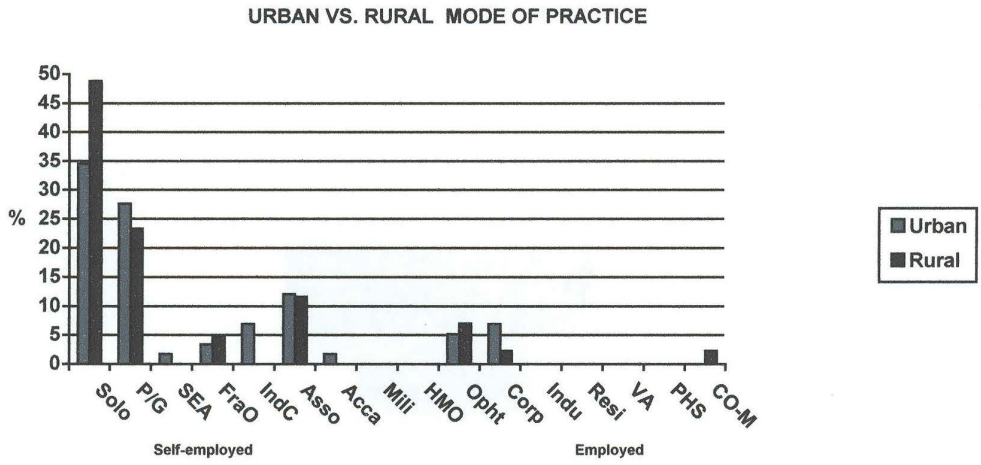

FIGURE 3

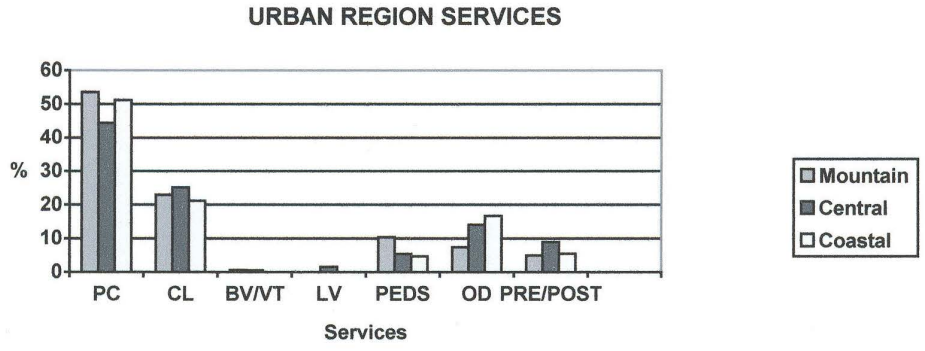

FIGURE 4

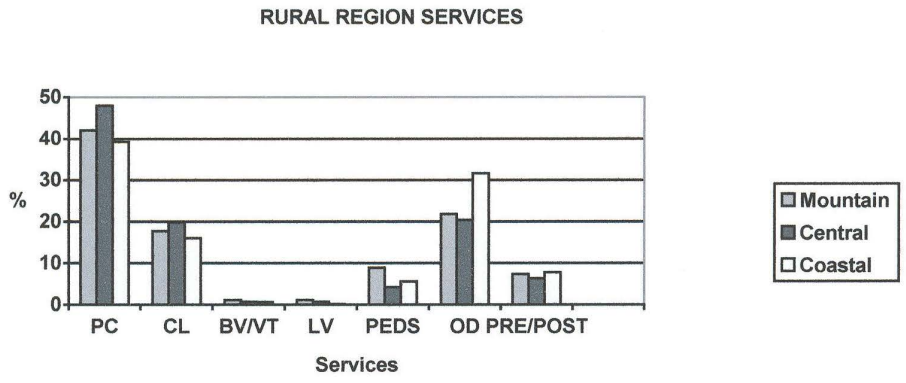

FIGURE 5

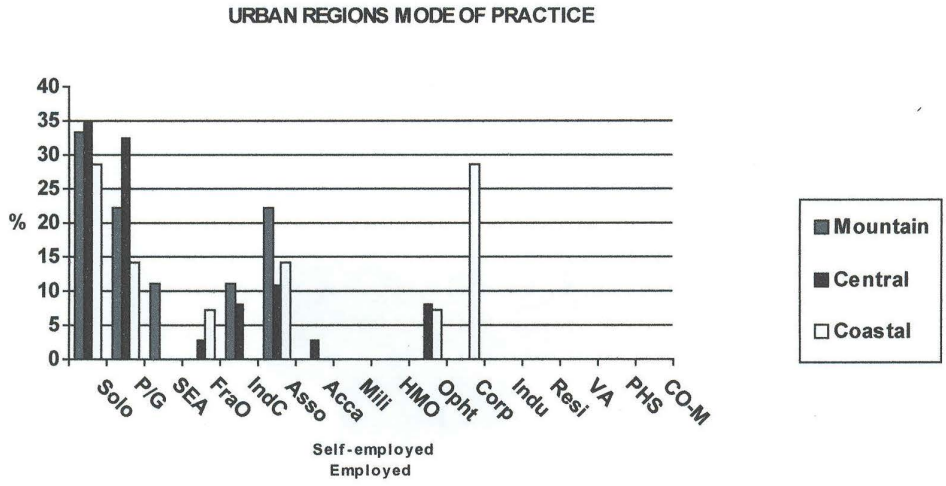

FIGURE 6

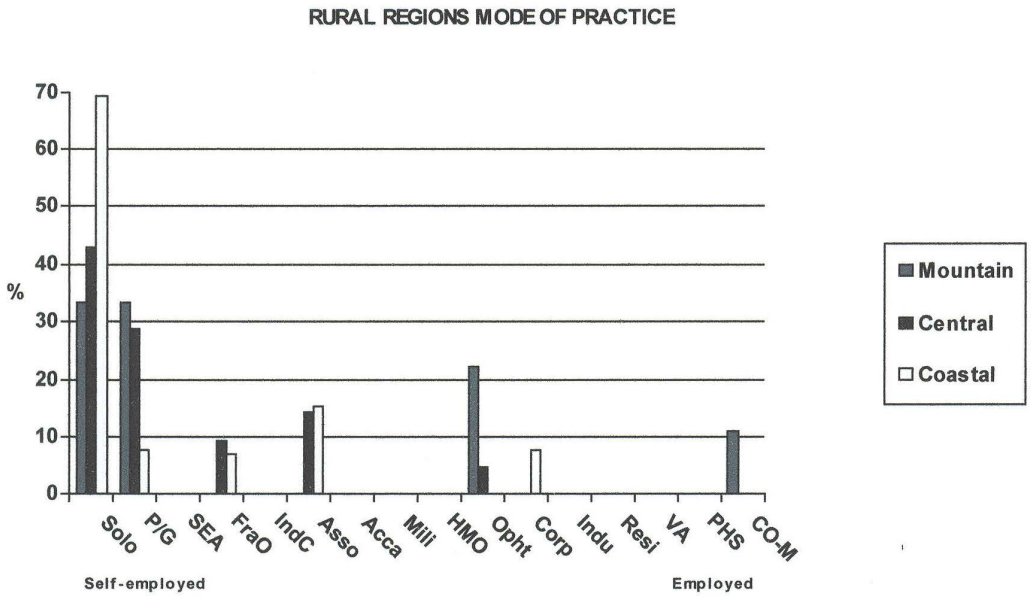
RURAL REGIONS MODE OF PRACTICE
70
60
50
40
%
30
20
10
0
Solo
P/G
SEA
FraO
IndC
Asso
Acca
Miii
HMO
Opht
Corp
Indu
Resi
VA
PHS
CO-M
Self-employed
Employed
Mountain
Central
Coastal

FIGURE 7

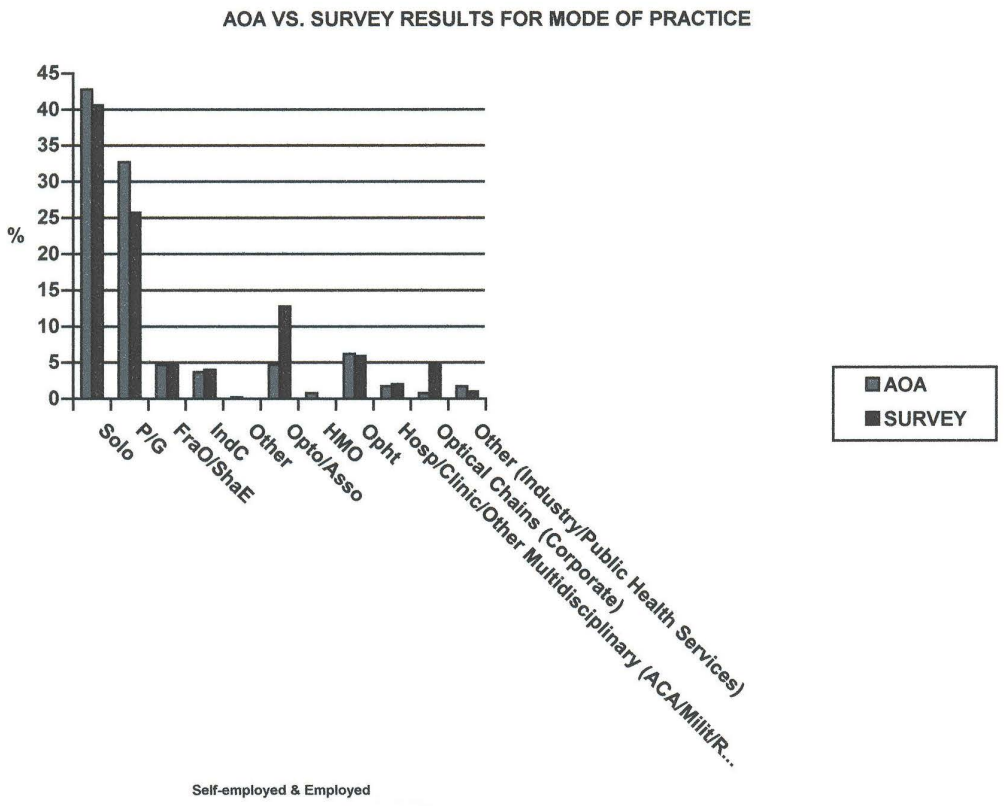
AOA VS. SURVEY RESULTS FOR MODE OF PRACTICE
45
40
35
30
25
20
15
10
5
0
%
Solo
P/G
FraO/ShaE
IndC
Other
Opto/Asso
HMO
Opht
Hosp/Clinic/Other Multidisciplinary (ACA/Milit/R...
Optical Chains (Corporate)
Other (Industry/Public Health Services)
AOA
SURVEY
Self-employed & Employed

FIGURE 8