

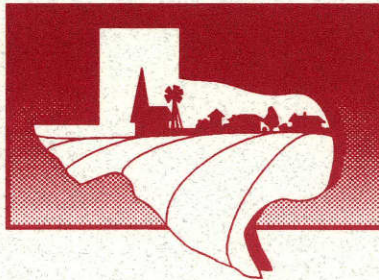
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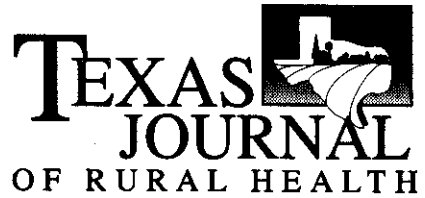
M I S S I O N S T A T E M E N T

The purpose of this journal is to provide a forum for sharing ideas related to rural health.

Authors are encouraged to submit relevant and current research studies as well as legislative and/or health care policy papers. Descriptions of innovative strategies in primary health care settings are especially welcome. Manuscripts will be evaluated for pertinence to the issues on a statewide basis. Response to our articles is also encouraged and will be printed under the section "Letters to the Editor."

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for the Texas Journal of Rural Health

Step One: Submit Manuscript

A manuscript should be presented in the form described in “Manuscript Specifications.”

Step Two: Blind or Masked Review Process

The editor and managing editor reserve the right to invite manuscripts for publication. The editor and managing editor also reserve the right to accept or reject manuscripts outright. Before a manuscript is sent for review, it **must** meet APA specifications. Manuscripts sent for review are read by those considered experts on the subject. Thus, a peer review is conducted. The author’s name does not appear anywhere on the manuscript, providing a fair review.

Step Three: Recommendations from Reviewers

After the manuscript is reviewed, it is forwarded to the managing editor who discusses the reviewer’s recommendations and comments with the editor and members of the editorial board. If a manuscript is rejected during the initial review, every effort is made to encourage the author to proceed with the manuscript to make the article publishable. Reviewers’ remarks are included with the return of the manuscript.

Step Four: Editorial Board

The editorial board has quarterly meetings to discuss the manuscripts recommended by the reviewers. Content is the most important feature discussed at this meeting. Recommendations are to either (a) accept the manuscript, (b) accept the manuscript with revisions, (c) revise and resubmit the manuscript, or (d) reject the manuscript. In all cases, authors are encouraged to continue toward publication and every effort is made to facilitate that process.

Step Five: Getting the Manuscript Ready for Publication

Recommendations are sent to the author. The manuscript is scrutinized for content, accuracy in interpretation and application of referenced material, and for topic completeness.

Step Six: Return of Manuscript to Managing Editor

The manuscript is read to make sure all recommended revisions have been satisfactorily completed. Sometimes, a reviewer will request that the revised manuscript be returned for another reading. When that happens, the reviewer may accept the manuscript or request more changes. If the author has not proven diligent in satisfying the reviewer’s or editorial board’s requests for revisions, the manuscript may be rejected.

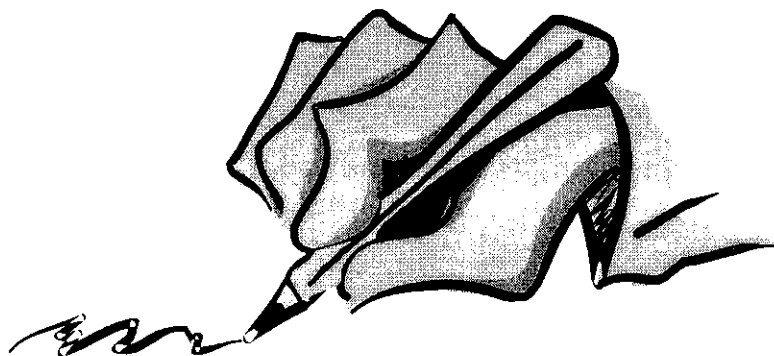
Step Seven: Getting Ready for Publication

The managing editor performs the job of editing, proofing for grammar, syntax, spelling, and word usage and then puts the manuscript into page layout form.

Step Eight: Authors Final Approval

The article will be sent to the author in page-proof (galley) form only if major changes are required within the text. In that event, the author usually signs “approval for printing with/without changes.” Beyond this, no other changes can be made.

Call for Papers



The *Texas Journal of Rural Health* is currently accepting manuscripts for publication on various topics relating to rural health issues. We are looking for articles to go into our new sections:

- Notes From the Field
- Policy and Law
- Research
- Review Articles
- Brief Reports

Some topic examples are listed below:

- Community and Migrant Health Centers
- Critical Access Hospitals
- Rural Health Policy
- Primary and Emergency Care in a Rural Setting
- Current Legislative Issues
- Border Health Issues
- Rural Health Clinic Management

Papers should be submitted to the Managing Editor as outlined in the “Instructions for Authors.” Because of our updated look, we are more than happy to accept manuscripts longer than outlined in the “Instructions.”

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RURAL HEALTH SYSTEMS:
LAGGARDS OR LEADERS?

The health of all populations is influenced by environmental hazards, individual lifestyles, biology, and access to good medical care. When it comes to particular rural populations, the mix of these risk factors may be unique; certainly, implementation of health programs is complicated by the twin problems of distance and small numbers of people served at a particular location.

These problems invalidate some of the organizational approaches developed for the delivery of health services in areas of high population density. For example, the notion that competition between local hospitals will enhance quality of care while forcing down costs simply does not apply in places where the population is too small to support several hospitals. The invisible hand of the market, which appears to be the preferred health policy tool of our generation, cannot be relied upon to assure quality access and efficiency of health services in rural areas. Similarly, prevention of environmental hazards, promotion of healthy lifestyles, and control of biological risks do not just happen by themselves.

On the other hand, rural people do not expect that either the state or the federal government will solve all of their problems for them. That cynical perspective brings with it a sigh of relief, since the notion of control by a government agency may not be very appealing to people who value self-reliance, independence, and privacy.



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If neither the invisible hand of the market nor the heavy hand of government offers a solution, how then can rural health be improved? After all, a civilized society does not require that citizens residing in the smaller hamlets and farms be condemned to preventable disease and disability. Therefore, a middle way, or rather a constellation of "middle ways" will have to be implemented. Sometimes subsidies of rural programs will be necessary, though any subsidized program should be carefully monitored to assure that it is accomplishing its mission. Sometimes regulatory strategies will be appropriate; urban-based regional systems should be held accountable for serving all the people in their

catchment areas, not just those who are easy to reach or highly profitable. Sometimes we may discover new ways to deliver services and protect health, ways that accomplish more with fewer resources. Ultimately, one of our goals should be to show the urban world that there are more efficient and effective ways to run health systems than are dreamt of in their philosophies.

LETTER FROM THE
MANAGING EDITOR

With our last issue, you may have noticed that the *Journal* has taken on a new look. Complete with a redesigned cover and binding, we have introduced formal article sections with the intention to lend clarity to the *Journal's* organization. The Notes From the Field section remains unchanged in its purpose and length. True to its name, the section will host practical information from people in various fields of rural health. Softer in nature than a formal research article, authors are encouraged to share their experiences in the field, both good and bad.

Sometimes it's hard with all the political rhetoric we are faced with each day to make sense of what is going on in the policy-making arena of rural health care. That's one reason why we chose to add a Policy and Law section, to help lend some clarity to otherwise complicated issues. On average, these articles should be 8 to 10 double-spaced pages in length and should be written in understandable language.

Also, please take special notice of a new section we have added to the *Journal* called "Interview." In it we will talk to leaders in the rural health care field (educators, policy makers, researchers, and alike) who are able to shed some light on a wide variety of subjects that we believe will interest you. This is, after all, your journal and we want to address your needs and speak to your concerns. Of course, with each issue we will continue to publish rigorously researched articles in our Research section. Like all the articles in the *Journal*, research articles undergo a blind peer review. Research articles should be approximately 20 to 25 double-spaced pages



Lee Ann Paradise

in length. We want to encourage you to submit articles appropriate for this section. Visit our homepage for Author Instructions at www.tjrh.homestead.com.

Sometimes we will publish shorter versions of a standard research article. These articles will be placed in our Brief Report section. They should be 10 to 15 double-spaced pages in length and should have many of the same characteristics as a research article.

While also looking forward, we know the importance of looking back. Our Review section is intended to be a comprehensive look at the literature. Please feel free to submit articles of this type on any rural health care subject. Review articles should be at least 15 double-spaced pages in length with 20 or more references cited. Your questions and comments are always welcome and my open-door policy is in keeping with the personal touch we associate with rural health.

While always welcoming articles written about rural communities in Texas, we also

embrace articles that are written by people outside our state. In this way, we hope not only to serve the rural communities of Texas, but also to serve rural communities across America by adding to the public discourse.

INTERVIEW WITH GAIL BELLAMY

Lee Ann Paradise
Managing Editor
Texas Journal of Rural Health
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INTERVIEW

Gail R. Bellamy, Ph.D. is the President of the National Rural Health Association. She is the Director of Community Research and Program Development for Scott and White Memorial Hospital in Temple, Texas. Dr. Bellamy is the group leader for the Central Texas Partners in Health, an informal coalition of health and human service providers, employers, government officers, and educators.

LP: What are the two most serious problems you think rural communities face today?

GB: That's a hard question to answer due to the enormous variability in rural communities across Texas and across the nation. However, in grossly oversimplified terms, I believe that the two most serious problems are the continuing threats to many already exceedingly fragile health delivery systems and redistricting.

The most recent threats to the health delivery systems of rural communities are the result of the Balanced Budget Act of 1997. I'm not going to go into any detail on the BBA. Instead I'd refer your readers to the excellent article by Dr. Keith Mueller, published just recently in the *Texas Journal of Rural*

Health. The BBA continues to threaten the health care infrastructure of rural communities across the continuum, from the frontier to those adjacent to urban centers.

Redistricting is a phenomena that accompanies the United States Census and is a threat to rural communities in 2000 because of an anticipated loss of rural congressional districts, translating into a loss of political power in Washington. Much of the success in advocacy that rural communities have recently experienced is due to the rural coalition in the House of Representatives and the rural caucus in the Senate. Senators don't represent discrete districts rather they represent the entire state. As a result, senators all have rural constituents, although the number of rural constituents may be decreasing. The real impact of redistricting is in the number of congressmen who will represent rural districts or have rural constituents in their districts. This is likely to change due to increases in populations in some communities, changing their rural designation to urban.

LP: What can be done to help solve those problems?

GB: An answer, certainly not the only one, is to become better advocates for our communities AND, where possible, to be more proactive in terms of what we need rather than reactive against what will hurt us. To become better advocates or to advocate more effectively, we need to expand our numbers. We must do this by educating and energizing residents of our communities.

However, we must also reach out to those outside our communities; allies who can help strengthen our case and strengthen our voice. To advocate more effectively, we must learn to make our case in terms that others can resonate with to assure that we are heard and understood.

Being proactive requires the expenditure of considerable time and energy with our neighbors, colleagues, and friends to identify, define, and describe what is needed and what is essential for the well being of our community. This is a challenging exercise. Being proactive means acting before there is a crisis. When there is no crisis, it is difficult to persuade people to come together and even more difficult to come to a consensus. Nevertheless, being proactive is an act of affirmation and it places the advocate in a position of strength. "This is what we want. This is why we want it."

LP: As President of the National Rural Health Association you have had the opportunity to speak with health care professionals from all over the country. Do you think that, in general, people feel optimistic about the future of rural communities with regard to health care access?

GB: It depends on who you ask. Providers (both rural and urban) are pessimistic about the future. Although the Balanced Budget Refinement Act redressed some of the more draconian cuts of the BBA 1997, there is still much to be done. The creation of a critical access hospital designation provides a safety net for many hospitals, but this is

still not a step that many administrators want to take.

Health care in America is going through a period of change that will impact patients and providers alike. No one knows just what the future of health care will look like and everyone is filled with a sense of unease. I think that's why you see providers holding on to the way things were, "the devil you know is better than the one you don't."

Community members, the users of health care services, do not appear pessimistic, but are not necessarily optimistic. Consumers don't often pay attention to health care until they have a real need. This is the same reason why public health doesn't make the public's radar screen – why pay for something when nothing is wrong? Unfortunately, for rural and under-served populations, the public may not pay any attention to a provider in crisis until it's too late to help and they've lost access.

LP: How would you describe the rural health forecast for the next five years?

GB: The forecast for the next five years is cloudy! As a nation, I believe we'll be spending the next few years watching the "redistricting" dust settle. All of this will not necessarily be bad for rural health, to the extent that we expand our circle to include more of our neighbors and some new and non-traditional voices to help us advocate for rural health.

I think you can see that I tend to be

optimistic, looking for the opportunity in crisis.

LP: Physician recruitment into rural areas is a constant challenge. What incentives do you believe would help encourage physicians to consider practicing in rural communities?

GB: Physicians need exposure to rural community life. Those physicians who were born and raised in rural or non-urbanized areas already know what it's like to live in a rural area, the good and the not-so-good; this is why policy recommendations always include recruiting students from these areas. However, there are those of us who were born in urban America, who have come to love the rural, small town life through briefer exposures. I moved from Los Angeles, California to Kykotsmovi, Arizona (pop. 800) in 1978. I don't believe that I'm particularly unique. For this reason (supported by research, I might add), I believe in the effectiveness of rural residency and rural tracks for promoting rural practice. Personally, I also believe in the value of the rural scholars program sponsored by the Center for Rural Health Initiatives and in their Health Find Program. The common denominator for both of these programs is community-provider involvement.

Community-provider involvement is only one piece, although I believe it to be a very important piece, that can encourage physicians to enter rural practice.

LP: We often hear that health care starts with the community. Therefore, what advice do you have for people living in

rural communities that want to become rural health care advocates?

GB: The best advice for anyone wanting to advocate on behalf of something or someone is (1) become informed about the issue(s), (2) get involved, and (3) get known. This is not a linear process, moving from getting informed to getting known. The three pieces work together. We learn by getting involved. By getting involved and by being informed, we get known.

To be a rural health advocate in your community, you need to be informed about what the needs are of the people in your community and what services are and are NOT available in your community to meet those needs.

A rural health advocate must get involved. What you get involved in and where you choose to do it are all up to you. Attend and participate in events sponsored by your local health providers. Attend and participate in events with other community members who have shared concerns. Join groups, associations that represent interests you care about. I got involved by joining and actively participating in the Texas Rural Health Association and the National Rural Health Association. I highly recommend both these groups to anyone interested in rural health.

Getting known happens when you are an active, informed person, but this can be helped along by making it a point to meet the elected officials who represent you and who have a say in health care in your community – the mayor, city council members, your county commissioners, the county judge, your state

representatives and state senators, and your federal representatives.

If you are informed about rural health in your community and you are actively involved in working to improve health care in your community, then (1) you have credibility as an advocate, and (2) you are an asset to your elected officials when it comes to providing information and guidance.

LP: Not too long ago you traveled to China and visited a rural hospital outside of Chengdu. What effect did that visit have on your view of medical treatment in the United States, especially in rural communities?

GB: The rural hospital outside Chengdu was a small primary care, short stay facility, primarily for women and children. What sticks with me today about that experience is not the facility. The hospital itself reminded me in some small ways of a rural public health clinic with beds. Instead, I continue to be struck by what rural China has lost as the country moves toward a capitalist economy. China in the 1980's was known for its "barefoot doctors." China was out front seeking to bring care, albeit very basic, to all its citizens using these precursors to our community health workers. China in the millenium sells health care, as we do, and the "barefoot doctor" is no more. [I am curious to see if the marketplace in America will support the community health worker when grant funding ceases.] China in the 1980's provided medical care, although far, far less advanced than the United States, to all

its residents. In the millenium, if you can't pay for hospital care, you die.

In the United States we do so much so well. We should be a model for other nations to follow for so many things, but not, I believe, for how we finance health care, limiting access for a growing number of Americans.

LP: What would you say to people who are seriously opposed to any kind of national health care plan?

GB: There's an old Bob Dylan song called "There But For Fortune" that reminds the listener that any of us could be poor, uninsured, sick, homeless "but for fortune." I would remind Americans that in spite of its promise, the market-place will not bring health care to all Americans. I would remind them that America has been riding the longest economic boom in our history and yet the numbers of uninsured have continued to rise. I would remind them that America ranked 15th among countries around the world on an overall index of health status, while spending more than any other country. Finally, I would remind them of what Winston Churchill said about America and Americans: "Trust Americans to always do the right thing after they have tried everything else."

A national health plan that reaches all Americans cannot help but improve our economy by improving the productivity of our workforce, and the capacity of our children to learn. It is the right thing to do, and we have tried just about everything else.

SMALL AND RURAL HOSPITALS WILL BE IMPACTED HARDEST BY APCs

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■ NOTES FROM THE FIELD

ABSTRACT

Rural hospital margins are thin and will be shrinking further from the effects of Ambulatory Payment Classifications (APCs). The impact on small and rural hospitals will be disproportionate to the impact on larger urban facilities. CEOs, COOs, and CFOs need an action plan for assessing readiness and implementing strategies to cope with the new Outpatient Prospective Payment System (OPPS).

While APCs are here to stay, don't overlook the potential benefits from Congressional pressure regarding a request from the burden of implementation costs, ongoing maintenance, and lower payments combined.

Key words: ambulatory payment classification, cost reduction, HCFA, payment systems, rural hospitals. (Texas Journal of Rural Health 2000; 18(4): 10-15)

INTRODUCTION

The Health Care Financing Administration (HCFA) has been transitioning Medicare from retrospective cost-based reimbursement to a Prospective Payment System (PPS) for all hospital services, as well as other provider

segments. Beginning with the Diagnosis Related Groups (DRGs) for inpatient hospital care in the early 1980s, coupled with the ten-year PPS capital transition which will soon be completed, to more recent changes in home health and skilled nursing payment methods, the transition has finally reached outpatient hospital services. While this was inevitable, the level of complexity embodied by the OPSS was somewhat surprising. Initially, HCFA described the Ambulatory Payment Groups (APGs) in proposed OPSS rules more than five years ago. There was a great deal of research conducted and significant industry comment on the OPSS proposal that led HCFA to make numerous changes and devise a different OPSS system called APC. However, even the APC system underwent substantial modification prior to being issued in its final form on April 7, 2000. Although the ink isn't even dry on the final regulations and neither HCFA claim forms nor the fiscal intermediary claims processing systems are ready, the August 1, 2000 implementation date is already upon us.

Many hospitals have been busy trying to estimate the financial effect of APC implementation on reimbursement. Such analysis requires the use of actual historical outpatient claims data, complex cost report analysis and calculations, and the availability of an APC grouper with payment assumptions. Regardless of the level of analysis and effort employed, the bottom line is that:

- the APC payment system is more likely to reduce payments than increase payments;
- the costs of education, training, business office process redesign, and systems modifications for billing may be substantial;
- the timetable required for implementation will likely extend beyond the

implementation date;

- the risk of noncompliance due to lack of readiness or unintentional errors is huge; and
- potential operations improvement strategies that could result in profits on outpatient services for Medicare beneficiaries which were previously unavailable to providers may be delayed due to the focus on implementation and compliance.

For those small and rural hospitals with over 100 beds that have been struggling with declining operating margins, dramatic increases in the volume of outpatient care, and climbing Medicare utilization of outpatient services, APC implementation spells financial distress. Although HCFA has delayed implementation for small rural hospitals with 100 or fewer beds through January 1, 2004, some of the implementation issues could require management's attention now. Thankfully, Critical Access Hospitals will not be subject to OPSS under the current final regulation. See Figure 1.

The implication for small rural hospitals is more critical than for larger urban hospitals. While a portion of the larger hospitals' operating margin may be at risk in terms of both payment reductions and implementation costs, these same conditions may eliminate the entire bottom line of a small hospital and even cause it to sustain operating losses over the near term. With hospital reserves at minimal levels, the potential for hospital financial distress and closures is inevitable.

By now, you have recognized a "burning platform" which exists and that active steps are required. The information that follows will provide some guidance for hospitals to consider in action plan development for responding to the financial pressures and operations improvement opportunities presented by the OPSS.

FINANCIAL IMPACT CALCULATION

This analysis may be necessary to heighten the awareness within the organization and/or at the Board level. However, the level of accuracy is not what is important, but rather the “directional” information for management decision-making that is critical. For example, does it matter if the annual reimbursement impact will be \$25,000 versus \$27,348? Or that the cost of implementation will be \$123,788 or \$125,000? Focus on the aggregate financial impact. Knowing that should be enough information to spur the organization to take action.

If the financial analysis is performed, try to get detail reports that reflect the impact not only in total, but also by clinical service lines (such as surgery, medicine, etc.), by physician for the top outpatient revenue producers, and by location, if rural health clinics or hospital-based practices exist. For example, group all surgery APCs together as a clinical service line. Then identify physicians by volume of APC cases and revenues. Perform a similar analysis for each of the other significant clinical service lines, such as oncology, ophthalmology, medicine, radiology, laboratory, etc. See Figure 2.

APC READINESS ASSESSMENT

Expert advice and counsel may be required to assist the organization to identify what needs to be done in the quickest and most efficient way. Identify hospital employees and admitting physicians that need education and training about the APC payment system in general. Also, the compliance aspects of clinical documentation, coding, and billing need to be provided to applicable personnel. It is likely that the hospital’s Charge

Description Master (CDM) needs a “tune-up” for APCs and that certain business office processes need some redesign work. Access to an APC grouper is advisable, but not mandatory since the Fiscal Intermediary will conduct the grouping. However, information systems vendors need to provide the organization with updates for producing line item claims and handling additional CPT/HCPCS codes and other CDM revisions. For some hospitals where information systems were “home grown” or utilize a legacy system no longer supported by a vendor, the implementation problems will be substantial. In the worst case scenario, a small hospital may have to purchase an entirely new information system. Thus, it’s not too early to begin the budgeting and strategic planning for an action plan even if APC implementation is ultimately delayed until 2004.

PROCESS REDESIGN AND IMPLEMENTATION

As previously mentioned the HCFA outpatient claims form is being redesigned. As a result, new and different patient demographic, clinical, and financial data elements will need to be captured in the admissions, service delivery, and business coding and billing process. This will require the development of internal processes, procedures, data collection forms, and information systems enhancements. In addition, quality assurance and concurrent review procedures will require modification depending on the APC service groupings.

Based on the financial impact analysis, there may be clinical service lines or clinic locations where additional data gathering will be useful in making management decisions. The clinical resource consumption (e.g., medical supplies, drug formulary, staffing mix and level, etc.) as well as possible admission

protocols to manage the volume or severity of outpatient services delivered within selected clinic service lines are examples of things to consider when making a financial analysis. Such information will become critical to the ultimate success of operations improvement strategies discussed in the following section.

OPERATIONS IMPROVEMENT INITIATIVES

The focus on looming implementation deadlines will likely result in many hospitals feeling pressured to operate under the APC payment system. Without identifying operations improvement strategies, they may incur financial losses or miss financial incentive opportunities. The opportunities for managing supply chain and drug protocols will be significant and critical. Since medical supplies and drugs are “bundled” in APCs,

the resource consumption, should be monitored more closely than ever. Some changes in procedures, policies, and protocols will involve vendor negotiations, training employees, and discussions with physicians.

Other cost reduction strategies involving both labor and nonlabor expenses will require management review and action. Vendor contracts may need to be amended or terminated. Staffing changes may be needed. Analysis of reimbursement implications by physician or clinic location will allow management to tailor solutions to create more efficient and profitable results in those situations. Analysis of financial results by a clinical service line may identify issues revolving around the business decision of whether or not certain services should be continued if unprofitable. Alternatively, expanding other services that are profitable should be considered. The entire disease

Figure 1. Of HCFA's Savings from APCs, Small and Rural Hospitals Will Only Be a Small Fraction



management process should be evaluated for opportunities to achieve efficiencies and lower costs. In a system of prospective payment, these opportunities can create financial outcomes not previously available from cost reimbursed Medicare services.

INFORMATION SYSTEMS MODIFICATIONS

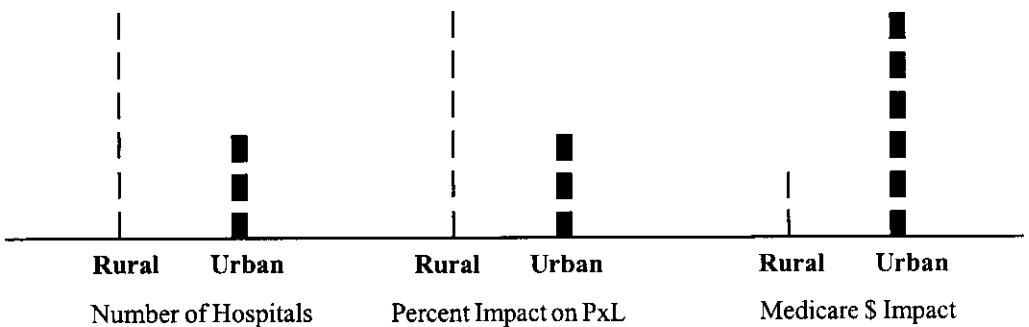
Obtaining vendor agreement within specified time periods to make information systems modifications will be critical to a successful implementation. However, a vendor commitment to have the systems in place prior to the implementation date may be insufficient. Management will need adequate time to understand the business office process changes necessary to link clinical service delivery, medical documentation, coding, and billing. Communications with information systems vendors should begin as early as possible. Otherwise, the patient

billing system will be “turned on” but there will be inadequate data to process.

LEGISLATIVE RELIEF LOBBYING

The financial burden of lost reimbursement and implementation costs will be hardest on the small hospitals that have fewer discretionary dollars to respond to the APC system. Use the local community and advisory board contacts to discuss in detail these implications with congressional contacts. It is not too late to raise these issues and request legislative relief for small hospitals. HCFA has designed the OPSS with more than 600 APCs (almost twice the number of DRGs when inpatient PPS began) for a volume of business that is generally 25% to 40% of hospital operations. As a result, the financial savings from small hospitals to the Medicare program will be minimal. However, the burden on small hospitals will be substantial due to the lower payments,

Figure 2. Negative Impact of APCs on Rural Hospitals



**Note: The above graphs are intended to be illustrative and do not reflect absolute amounts.*

SMALL AND RURAL HOSPITALS

implementation costs, ongoing maintenance, expanded compliance requirements, cash flow delays from lack of HCFA readiness to process claims, and potential burden from Medicare audits and investigations arising from such a complex system.

CULTURAL SENSITIVITY: BaFa BaFa™ CROSS-CULTURAL SIMULATION EXERCISE AND ITS IMPLICATIONS FOR RURAL HEALTH PROFESSIONALS

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ABSTRACT

This article reports the role of culture and its implications for service delivery with a focus on rural communities through the participation in a cross-cultural simulation exercise. The role of culture is defined as it relates to affecting behavior and the overall perception of providers. Key findings from the administration of the BaFa BaFa™ game and their relevance for rural health providers are addressed.

Key words: culture, simulation, rural communities, service delivery, BaFa BaFa™. (Texas Journal of Rural Health 2000; 18(4) 16-21)

OVERVIEW OF CULTURAL SENSITIVITY

During the last decade, “cultural sensitivity” has been the cliché term associated with a major move for all individuals to become knowledgeable about the various cultures and diverse communities that they serve on a daily basis (Cushner & Brislin, 1996). The term has been used to include the awareness of culture as a major independent variable to define access to health care and services. Other terms that have been associated with cultural sensitivity have included cultural competency, cultural awareness, and cultural relevancy among others. Many programs, exercises, seminars, and classroom instruc-

tions have been developed to ensure that the workforce and community residents are sensitive to the needs of their surroundings. Rural communities and health care system providers must be aware of the diversity of their communities if they are to have an impact on the overall health of their populations.

However, the question has still not been answered as to the “long-term” effects of these trainings in sensitizing health care providers to truly understand the dynamics of culture and health. The major test will be to assess the effectiveness of these programs and their impact on service delivery with the diverse minorities that exist in all communities.

CHANGING DEMOGRAPHICS

The need for cultural sensitivity is even more justified with the changing demographics of our communities. As they plan and implement effective health care services and programs, researchers and health care providers must be aware that the “melting pot” syndrome is even more important today. Population data has documented that the United States is becoming a minority-majority population. Certain minority groups are increasing in number while the majority Anglo population is not increasing at the same rate (Day, 1993). The implications for the understanding of various cultures will be mandatory in addressing community needs.

More specifically, rural communities are not immune from these demographic shifts. Many current rural communities have “pockets” of minorities, and the southern part of the United States has many minority communities, especially African-Americans. In addition, the increase in migrant farm communities with large Hispanic populations from various cultures will play an important

role in the delivery of needed health care services (United States Department of Agriculture, 1996). The impact of minority health disparities issues have been documented to show that there are apparent differences in morbidity and mortality in rural communities (Baker & Kotelchuch, 1989; Dansky & Dirani, 1998; Duelberg, 1992; Mueller et al., 1999; Strickland & Strickland, 1996). One of the indicators to these disparities is the role of culture and its impact on the utilization of preventative and treatment services, which must be addressed.

WHY CULTURE?

The main reason to consider involving “culture” as a significant factor in health care delivery systems is that “one-way” of doing things or “one size fits all” is not appropriate for culturally diverse communities. Many individuals believe that a “comprehensive” health program should be conducted based on a set of rigorous research principles and protocol, which tend to overlook the role of culture. However, if the protocol does not include the different cultural dimensions of its communities, it will fail. That is the major crux of why many programs or health care systems cannot reach the so-called “hard to reach” populations. Without reference to an individual’s culture, there will not be an individual who participates in a certain program or initiative.

The question and role of culture and why it is important has been documented in the literature (Kagawa-Singer & Chung, 1994; Geissler, 1998; Gregory & Sanjek, 1996). These studies have documented the role that culture plays in successful participation of minority groups in accessing health care services. For example, belief systems relating to culture affect their participation in preven-

tion and treatment services. Some cultures are more of a “family-oriented” decision-making type model. Therefore, decisions such as to obtain a mammogram or a simple x-ray may have to be discussed with the entire family before permission is given for the procedure to be conducted. The role of family is important to be recognized by health care providers to understand the behavior of certain racial/ethnic minority groups. Another example would be the “fatalistic” view that some cultures exhibit as it relates to their overall health. Dietary change is a major behavior-related process that health care providers promote to limit mortality and morbidity. However, understanding that culture is a very important determinant of someone’s diet and cannot be changed by simple health prevention messages. For example, African-Americans generally have a diet high in fat content, which can lead to a higher risk for cardiovascular disease. Understanding the culture will allow health care providers to “tailor” their health messages and work in partnership with the individuals to modify their dietary habits with healthy substitutes.

BAFa BAFa™ APPLICATIONS

The BAFa BAFa™ cross cultural simulation exercise has been implemented in thousands of communities since it was developed by R. Gary Shirts of the Simulation Training System in 1977. The author has served as the lead facilitator in over 15 trainings for the past seven years. A total of over 300 individuals have participated in the author’s facilitated sessions. Various cofacilitators have assisted the author in these cultural sensitivity trainings. These locations have included the

National Rural Health Association annual conferences, rural community-based health organizations staff and board of directors, non-profit organizations, and classroom groups among others. The classroom exercises have included high school and college students. Most of the organizational presentations have included adult health and human service providers. This article will concentrate on the findings from the administration of the simulation to rural health care providers. As with most rural-urban research, the majority of the implications are relevant in urban settings as well. It must be noted that the author tailors the application of BAFa BAFa™ to “fit”the audience. The major changes to the application include the time of the exercise based on the allotted time by the sponsoring organization. In addition, the evaluation period at the end of the exercise is tailored toward the audience. For example, in conducting the simulation with rural providers, the discussion is geared toward their understanding of the role of their behavior in clinical and community settings. Examples, such as how a rural provider can work with diverse cultures for more inclusion and outreach mechanisms, are discussed. The cultural simulation exercise provides the opportunity for individuals to understand and become sensitive to people from various racial/ethnic backgrounds. The connection between the cultural simulation and cultural sensitivity is evident by the outcome of the exercise and there is an appreciation and understanding of the role of culture in providing needed health care services for diverse populations. This sensitivity allows the participant the opportunity to “view” themselves and their respective cultures, which direct their everyday behavior.

SIMULATION OVERVIEW

Basically, the cross-cultural training simulation was designed to ascertain differences that are inherent in various cultures. The values, belief systems, and customs are introduced to the participants. Cultural determinants such as whether a community is patriarchal or matriarchal are addressed in a two-group process. Other determinants are also discussed such as language barriers and different communication styles, as well as the social intimacy among community members. Interpersonal interactions and the existence of sexism within a community are also discussed. A major component of the exercise is the feedback and discussion session, which is conducted at the end of the training (Shirts, 1977). The simulation exercise can last anywhere from two to three hours. The author has conducted various sessions and has adapted the BAFa BAFa™ framework to fit within the time allotted and is audience specific.

OUTCOMES AND EXPERIENCES

An analysis of the major areas of the cultural sensitivity exercise is evident for readers to understand the importance and relevance to their everyday activities. These activities can be applicable to the delivery of health care services, program enrollment of individuals from various cultures, program evaluation, and others. The key areas, which were repeatedly reported from the training sessions, include:

- the role of culture;
- culture is not race-specific;
- differences are positive; and
- job-specific applications.

Role of Culture

The most important finding from conducting this type of simulation exercise is that participants learned the significance of culture. After post-discussions, the participants were better able to understand the role of culture and its effect on the behavior of the individual. Comments such as the role of the male household figure as the major decision-maker for the family are not peculiar for certain cultures. In addition, the role of culture as it relates to diverse groups is not the same for all minorities. Participants were able to understand that culture determinants cannot be “lumped” together for all individuals of that particular culture. In many cases, there is a “culture within cultures,” which must be denoted and examined before assumptions are made about diverse groups.

Culture is not Race Specific

Many of the perceptions and literature tend to describe culture as synonymous with only racial/ethnic groups. It is a major factor that racial/ethnic minorities have diverse cultures. However, other cultural-related factors such as religion, gender, sexual orientation, and “rurality” are all important. Participants constantly addressed the issues that rural residents have a unique culture in comparison to many urban cultures. This is evident when individuals must describe or defend the behaviors, norms, and beliefs of rural residents, which is contrary to their urban counterparts in most cases. For example, the rural determinant of “isolation,” according to rural providers who participated in the trainings, has been seen as a negative concept. However, some rural residents see it as a positive aspect of rural life. The role of gender is even more evident as it relates to

their participation in health care services such as preventative services. For example, the “macho” attitude held by some men can limit their participation in preventative services, which is a factor for both rural and urban residents. It is also important to understand that a minority individual from a rural setting will be somewhat different than one from an urban. The role of exposure and access to information and resources are more available in an urban setting, which would change the behavior of the individual. In this case, cultural factors include not only the role of race but also place of residence. These findings address the role of “aggregating” individuals from a certain racial/ethnic background. Individuals tend to believe that the “color” of someone’s skin automatically will denote their cultural dimensions without recognizing that there are cultures within cultures.

Differences are Positive

The recognition that cultural differences are acceptable and must be addressed by all communities was a positive outcome from the simulation exercise. Participants felt that after the trainings, they had a greater appreciation for various cultures. In addition, the understanding that not all rural populations are the same added credence to their claim that differences exist within the cultural context of rural residents as it does for ethnic minorities. These differences should not be viewed as hindrances to the delivery of health care services for rural residents, but rather embraced.

Job-specific Relevance

Lastly, the overall significance and “gist” of the simulation exercise is its relevance to

their everyday jobs. The aforementioned findings all point to how this information should be processed and used in work settings. Many of the providers, after participation in the trainings, were able to see how it “fits” within their respective duties. In rural communities, they recognized the lack of minority health care providers. Their understanding and attempt to recognize the role of culture and the need to apply it to their delivery of health care services is evident. Realistically, the participants recognized that they are not able to know all cultures and all of their norms and practices. However, through improved needs assessments and participation of culturally diverse populations, they would be able to address the role of culture.

IMPLICATIONS FOR RURAL COMMUNITIES

The rationale of a cross-cultural simulation exercise is to increase cultural sensitivity and understanding among its participants. It must be noted that this type of exercise does not make someone a cultural expert. Some researchers believe that an exercise is not the most effective tool to address cultural competence. However, a game or “simulation exercise” provides a non-threatening environment that gathers participants in a “role-playing” setting where their true perceptions and biases are brought to the forefront. More importantly, discussion and feedback allow participants to actually interact with their colleagues to see that their feelings are not much different from the overall group.

The implications of this program can be associated with the need for rural health care providers to be aware of the diversity within their community. More importantly, we must move from awareness to understanding,

which will lead to more inclusion. It is no secret that the majority of rural health providers are not members of minority groups. The first goal is to increase the number of minorities from culturally diverse backgrounds in the rural health delivery systems. However, realistically, there is not enough time to wait for the changing demographics of the rural workforce. Cultural sensitivity must be implemented with constant training and reinforcement, if we are to seriously address the health disparities in our rural communities. It must not be used as a “cliché,” but more as a common practice for all rural providers.

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THE NATIONAL RURAL HEALTH ASSOCIATION'S
MIGRANT HEALTH CARE FELLOWSHIP PROGRAM

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■■■■■■■■■■ ABSTRACT

An estimated three to five million migrant and seasonal farmworkers travel the "migrant stream" each year from Florida, Texas, and California. They follow the progression of the growing season, planting, picking, and cultivating America's fruits and vegetables. Migrant farmworkers tend to be either newly arrived immigrants or individuals with limited skills or opportunities. Although American agriculture depends on the labor of these workers, employment is usually of short duration and requires frequent moves.

Migrant farmworkers are predominately Latino, but African-Americans, Caribbeans, Asians, and Caucasians are also represented. Almost half of the farmworkers have less than a ninth grade education and many speak little or no English. Children of migrant farmworkers often change schools several times a year.

Farm work is considered to be second only to mining in the rating of most hazardous occupations. There is a high exposure to pesticides through topical exposure, inhalation, and ingestion, which results in the highest rate of toxic chemical injuries of any group in the United States. Farm injuries, exposure to heat and sun, and poor sanitation in the fields are other factors that contribute to the dangers of this work.

Regulations attempt to provide decent living conditions, but housing often contin-

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ues to be overcrowded, poorly maintained, and lacking in ventilation, bathing facilities, and safe drinking water.

Providing health care to the migrant farmworkers presents a number of unique challenges. This transient population is not only difficult to serve in the context of the traditional health care system, but the factors of poverty, mobility, and difficult living and working conditions all make farmworkers more at risk for illness and injury. Those who work with migrant farmworkers find that, not only do common conditions occur more frequently, but they are also more severe since they are allowed to progress to more advanced stages before accessing care.

Key words: fellowship program, health center, migrant farmworkers, rural, Texas. (Texas Journal of Rural Health 2000; 18(4): 22-28)

INTRODUCTION

In 1962, President Kennedy authorized the creation of a system of health care services specifically for farmworkers. The Migrant Health Program continues to be administered as part of the Bureau of Primary Health Care within the Health Services and Resources Administration, and consists of a national network of migrant health clinics. Studies have found, however, that these services are reaching less than 15% of the farmworkers in the United States.

Migrant health centers work to provide health care services which are sensitive to the unique cultural, financial, and occupational needs of farmworkers. Staff must be able to communicate in the languages of the farmworkers. Clinic services must be offered in the evening, since farmworkers will not risk loss of wages or employment by seeking care during work hours. Transportation services

are often an essential component of migrant health programs.

Providing continuity of care is a constant focus in migrant health care programs. Especially in northern locations, a farmworker may only be in one location a few weeks or months. Portable records with detailed treatment information are often given to farmworkers to present to health care facilities as they travel.

A problem often cited as an obstacle to the provision of care is the difficulty of recruiting physicians to work in isolated, often seasonal, and relatively low-paying positions. A number of programs have successfully implemented a variety of multidisciplinary collaborative models. Outreach programs are employed to make services more available to farmworker patients. Lay health advisors are often recruited from the ranks of the farmworker population and trained in basic preventative medicine. Many migrant health clinicians travel to farmworker camps in the evenings to access and triage health problems. Primary care services are often provided in migrant health centers by nurse practitioners, physician assistants, and midwives, with physicians providing consultation, inpatient care, and outpatient management of complex medical cases.

ABOUT THE MIGRANT HEALTH CARE FELLOWSHIP PROGRAM

Migrant health centers are typically understaffed and often employ non-physician providers, making these settings ideal for new clinicians interested in working with the under-served. Recruitment and retention of clinicians are ongoing problems for these centers, and many see fellowships as a means of accessing new providers. The National

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Rural Health Association's Migrant Health Care Fellowship Program, now in its tenth year, has been highly successful in increasing the pool of health professionals trained in migrant care. Therefore, the program is available to provide appropriate health services in rural and under-served communities. Since 1991, 26 academic institutions, 31 migrant health centers, 26 physician assistants, 18 family nurse practitioners, and 6 certified nurse midwives have participated in the fellowship. Of the 50 fellows, 9 physician's assistants, 10 family nurse practitioners, and 2 certified nurse midwives remained in migrant health centers after completing the fellowship. The remainder of the fellows have continued to work with under-served populations in other settings.

The NRHA's Migrant Health Care Fellowship Program was developed in 1990 through a grant from the Bureau of Primary Health Care and the federal Migrant Health Program. The fellowship program provides a four-month work experience in a migrant health center for nurse practitioners, physician assistants, and nurse midwives. Most of the fellows are recent graduates of their academic programs and the experience offers a supervised transition from the student role to that of the independent clinician. Fellow placements are determined by availability of migrant health center sites in each of the three migrant streams—East, Midwest, and West. Ideally, fellows are dispersed nationally, with attention to quality of clinical experience, availability of skilled clinical preceptors, academic program affiliation, professional discipline needed, and geographic location.

The long-term goal of the program is to encourage these new clinicians to plan a career providing health care to migrant farmworkers or other under-served

populations. The more immediate goals of the program are:

- To provide exposure to the field of migrant health to well-qualified nurse practitioners, physician assistants, and nurse-midwives;
- To sensitize providers to the demands of providing care to a mobile multicultural population;
- To increase the fellow's understanding of migrant health care issues as they consider careers working with under-served populations;
- To provide high quality supervised clinical practice experience for advance practice providers who have an interest in challenges and opportunities of primary health care for migrant and seasonal farmworkers; and
- To cultivate national awareness of the demographic, socio-cultural, economic, environmental, historical, geographical, and epidemiological issues impacting the health of the migrant and seasonal farmworkers.

Fellowship opportunities are created through collaborative efforts between migrant health centers and clinical training programs. Through such efforts, the fellowship program encourages the development of sound and lasting relationships between these institutions. Participation is solicited from accredited physician assistant, nurse practitioner, and certified nurse midwife programs that are willing to make a commitment to the fellowship program. This commitment involves establishing a relationship with a selected migrant health center, designating a fellowship advisor, providing relevant graduate-level course

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work, and arranging for academic credit for the fellow, if necessary.

While the training program provides academic support for the fellow, clinical experience with the migrant farmworker population is gained through placement in a migrant health center whose staff is responsible for the orientation and clinical supervision of the fellow. The selected fellow establishes a relationship with a migrant health center where clinical experience is obtained under the preceptorship of a provider in his or her discipline.

Each year, over 3,000 applications are mailed to physician assistant, nurse practitioner, and nurse midwife graduates for a selection of up to eight fellows. The fellows are selected from over 100 applications by an advisory committee of professionals with experience in migrant health. This selection process includes a review of the application, goal statements, and recommendations from the program director of the training program from which the applicant has graduated or will graduate. Fellows are matched to participating centers and academic programs in the area of the center. An important part of the matching process is timing—the migrant season must be underway to achieve the goals of the program. An orientation meeting is held each May for all the fellows to learn about the sites and program faculties to get a clear understanding of their roles and responsibilities during the four-month fellowship. Fellows are required to send monthly progress reports and develop an educational project by the end of the fellowship. The project is agreed upon by the fellow and the center and must meet a need in the center as well as the community. Examples of some of the projects include: AIDS prevention; breastfeeding education; language development delays in preschool migrant children; prevention of unplanned pregnancy; clinical care guidelines for

asthma; community education on women's health; laboring under the threat of INS raids; and childhood lead screening guidelines. The fellowship's duration is four months and stipends of \$15,000 are provided. The stipends are intended to cover tuition, fees, books, and living expenses for the duration of the fellowship.

The program, sponsored by the National Rural Health Association (NRHA), is funded by the Bureau of Primary Health Care (BPHC), Health Resources and Services Administration (HRSA). Other cosponsors include the American Academy of Physician Assistants, Association of Physician Assistant Programs, and the Migrant Health Program, BPHC/HRSA. Participating partners for the fellowship program are: migrant health centers, accredited clinical training programs, physician assistant programs, nurse practitioner programs, and certified nurse midwife programs.

THE PLIGHT OF MIGRANT FARMWORKERS

"Migrant farmworkers are the people who harvest the food America eats. But they themselves often go hungry, and they lack many of the things the rest of the nation takes for granted. The fruits of their labor are a lifetime of poverty and ill health. Poverty itself is perhaps the greatest health problem of migrant farmworkers since it causes them to live in conditions that breed illness. Most farmworkers live in substandard housing, in areas not served by adequate potable water or drainage facilities. Compounding the situation, farmworkers are exposed to extremely hazardous working conditions," says Frank Vasquez, Executive Director, of the Hildago County Health Care Corp., Pharr, Texas (Vasquez, 1991). "They are three times as likely as other Americans to experience a

disabling accident, are frequently exposed to toxic pesticides, and when ill, find that there is no sick leave in their sunup-to-sundown work schedule. Areas where farmworkers work and live suffer from an acute shortage of health manpower and health resources. The most compelling issue before us with respect to the plight of migrant farmworkers is the urgent need to provide culturally relevant primary care to the many thousands who live in these dire conditions.”

Because prevention is more cost-effective than medical treatment or rehabilitation once illness or injury occurs, priority must be placed on preventative services targeted to the total farmworker environment, including the workplace, living quarters, and school in order to promote a healthier farmworker population and to prevent the suffering and pain of acute illness and chronic disability, as well as reduced income from lost wages. Preventative measures such as housing and water quality improvement, sewage control; elimination of overcrowded living conditions and workplace hazards; health education; and safety training should be given a high priority. Other preventative health services such as dental, hearing, family planning, pre- and post-natal care, and hypertension and diabetes screening, combined with the preventive measures will improve the health and well-being of farmworkers and their families.

MEETING THE NEEDS OF MIGRANT FARMWORKERS IN TEXAS

Hidalgo County Health Care in Pharr, Texas, had the privilege of hosting two physician assistant fellows in 1991, the first year of the fellowship, and in 1994; the Cotulla Clinic in Cotulla, Texas, hosted a physician

assistant fellow in 1995; and the W. K. Kellogg Clinics in El Paso, Texas, hosted a nurse midwife fellow in 1996. Following are excerpts of these fellows’ experiences:

- “The fellowship provided me the opportunity to hone up on history taking skills, compliance, to teach, and learn what indigent care is all about, which had a lot of rewards in it.”
- “During the fellowship I realized the migrant community needed information on AIDS in order to begin to talk about and deal with the issue. This realization was why I decided to do my project on HIV/AIDS. The project *HIV Assessment and Treatment in the Hispanic Migrant Community* is a patient management protocol to be used by primary care providers to screen, assess, evaluate, educate, manage, and provide follow-up for someone being tested, or has already tested positive for the HIV virus.”
- “Migrant health or border health: an identity crisis? This was an understandable mix-up because El Paso identifies itself more as a border community than a migrant community. As much as I am focused on migrant health as my career, I believe that the time spent on the border was rich in opportunities to expand my understanding of migrant health and migrant issues.”

THE FELLOWSHIP’S IMPACT ON THE CAREER GOALS OF FELLOWS

Following are excerpts from a recent survey of fellowship alumni on their experiences and the impact the fellowship has on their career goals:

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- “The experience committed me to work in migrant health care, and currently I am working at a pediatrician’s office in Gresham, Oregon.”
 - “The fellowship helped incorporate information gleaned from the experience with migrant workers into teaching, and provided a great opportunity, which contributed to a number of publications I have authored.”
 - “The fellowship reinforced my interests and desires to work with the migrant population.
 - Because of the fellowship, I chose to work with under-served patients, as well as teaching physician assistants and encouraging them to apply for the fellowship.”
 - “The fellowship solidified my belief that a career of service to the migrant population was what I wanted to pursue.”
 - “During my time in the fellowship I came to realize that many people must come together to make complete care possible for migrant workers.”
 - “The fellowship was an excellent learning experience and helped strengthen my commitment to working with under-served women.”
 - “The fellowship gave a first-hand view of the many cultural and social barriers which exist in providing quality health care to this population and as a new practitioner, I have just begun to scratch the surface, but hope to continue in this field long after the fellowship is over.”
 - “The fellowship is designed to foster better understanding of the dynamics concerning migrant workers and their families and the need to work together as a society to help maintain adequate levels of assistance for this population.
- I am proud to begin my career in migrant health care.”
- “The fellowship and the site in particular, helped me cultivate an awareness and learning how to be effective as a provider for migrant and seasonal farmworkers. I was exposed to all different ethnicities, cultures and living/working situations, and understand more now how living conditions, housing, crowding, etc. impact the health of farmworkers and their families. I was introduced to many of the health practices and beliefs that impact farmworker health and became aware how a practitioner should keep them in mind when interacting with patients and formulating a treatment plan. My fellowship experience has reaffirmed my desire to stay in migrant health care as a career.”
 - “My most memorable fellowship experience was not as a clinician, but as a volunteer translator for the women’s health birth center. The patient was a Guatemalan in labor with her second child, lots of complications, and a very scary delivery. In the midst of all the technical mayhem of the delivery while doing my best to translate words, I was strongly reminded that language barriers are a very serious threat to health and can make negotiating a foreign health care system a terrifying experience. I understood more clearly why my migrant patients, when I ask them what we can do to improve their health, almost universally answer “teach me English.”
 - “I love the work I’m doing, sometimes it feels overwhelming because the population needs so much and the resources are so very limited. I have learned that there is more to the

MIGRANT HEALTH CARE FELLOWSHIP PROGRAM

provision of care for migrant health than the provision of clinical services. Sometimes the patients get lost in the bureaucratic paperwork that sometimes has to be completed prior to any services being rendered, and if there is no interpreter available at the moment, the patients wait and wait and wait. I am always impressed by the fortitude exhibited by the migrant worker in waiting to be seen. I've never seen impatience or a severe word to the provider. One of the things I've realized about working with the migrant community is that success comes in very small steps. I won't see dramatic changes in behavior, but I will see small changes that may be insignificant to many, but to me they are milestones because of the many obstacles faced by this population. What becomes challenging for both provider and patient in this particular population is how best to communicate so that the patients' needs are met. This takes time and commitment on everyone's part."

THE FUTURE OF THE MIGRANT HEALTH CARE FELLOWSHIP PROGRAM

The fellowship program has been successful in providing skilled health professionals to migrant health facilities throughout the United States. During its ten-year history, the fellowship program has averaged six migrant site placements per year. In the interest of enhancing its benefit to migrant stream health care, every effort will be made to expand this number to an average of eight to ten placements.

Plans for the future will focus on sites that have the greatest need for fellowship

placements. The number of fellows placed will be expanded and there are plans to possibly expand the types of providers selected, such as dental technicians, etc. Alternative funding opportunities and scholarships will also be explored.

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THE TEXAS PHYSICIAN BARGAINING RULES

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■■■■■ POLICY AND LAW

ABSTRACT

A major obstacle to individual physicians gaining bargaining power in negotiations with health plans has been the antitrust prohibition against competitors jointly setting or negotiating prices, known as “price fixing.” However, an exception to antitrust enforcement exists for individuals acting under a clearly articulated state policy. A 1999 Texas statute attempts to use the state action exception to remedy the problem by allowing independent physicians to come together to bargain collectively with health plans. The Texas Office of the Attorney General (OAG) recently adopted regulations regarding the details of physician bargaining. These regulations are intended to give the OAG the authority to supervise and control the joint negotiation process so that participating physicians can receive state action immunity from federal antitrust liability. However, because of the level of supervision required, the process may prove too burdensome for many physicians.

Key words: antitrust, IPG, IPA, physician bargaining, Texas statute, Texas Attorney General, negotiations. (*Texas Journal of Rural Health* 2000; 18(4): 29-34)

In 1999, the Texas Legislature passed a new law allowing independent physicians to bargain collectively on certain fee-related terms and other conditions of contracts with health plans (S.B. 1468, 1999). The Legislature found that while joint negotiations over fee-related terms might in some circumstances yield anticompetitive effects, there are also instances “in which health plans dominate the market to such a degree that fair negotiations between physicians and the plan are unobtainable absent any joint action on behalf of physicians” and where health plans can “virtually dictate the terms of the contracts they offer physicians” (Tex. Ins. Code, 1999a).

One of the major issues in the debate over the Texas physician bargaining statute has been whether the implementation of the statute would satisfy the state action doctrine without making the process overly burdensome for physicians. The Sherman Act contains a “per se” restriction on price fixing, which prohibits competitors, such as independent physicians in the same specialty, from jointly setting prices. However, antitrust law also provides for a protection from antitrust liability under the “state action” doctrine. State action immunity shields state-authorized, private conduct that would otherwise be a violation of federal antitrust laws where the state has clearly articulated a policy to displace competition with regulation and actively supervised the conduct. The Texas Office of the Attorney General (OAG) has recently adopted rules which are intended to enable the OAG to supervise and exercise control over the joint negotiation process in order to provide physicians with state action immunity from federal antitrust liability (25 Tex. Reg. 5301, 2000).

Under the physician bargaining statute, competing physicians within the service area

of a health benefit plan may meet and communicate for the purpose of jointly negotiating the following terms and conditions of contracts with a health benefit plan:

- 1) Practices and procedures to assess and improve the delivery of effective, cost-efficient preventive health care services, including childhood immunizations, prenatal care, and mammograms and other cancer screening tests or procedures;
- 2) Practices and procedures to encourage early detection and effective, cost-efficient management of diseases and illnesses in children;
- 3) Practices and procedures to assess and improve the delivery of women’s medical and health care, including menopause and osteoporosis;
- 4) Clinical criteria for effective, cost-efficient disease management programs, including diabetes, asthma, and cardiovascular disease;
- 5) Practices and procedures to encourage and promote patient education and treatment compliance, including parental involvement with their children’s health care;
- 6) Practices and procedures to identify, correct, and prevent potentially fraudulent activities;
- 7) Practices and procedures for the effective, cost-efficient use of outpatient surgery;
- 8) Clinical practice guidelines and coverage criteria;
- 9) Administrative procedures, including methods and timing of physician payment for services;
- 10) Dispute resolution procedures relating to disputes between health benefit plans and physicians;

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- 11) Patient referral procedures;
- 12) Formulation and application of physician reimbursement methodology;
- 13) Quality assurance programs;
- 14) Health service utilization review procedures;
- 15) Health benefit plan physician selection and termination criteria; and
- 16) The inclusion or alteration of terms and conditions to the extent they are the subject of government regulation prohibiting or requiring the particular term or condition in question (Tex. Ins. Code, 1999b).

Physicians may jointly negotiate the following fee-related terms and conditions only where the health benefit plan has substantial market power and those terms and conditions have already adversely affected or threaten to adversely affect the quality and availability of patient care:

- 1) The fees or prices for services, including those arrived at by applying any reimbursement methodology;
- 2) The conversion factors in a resource-based relative value scale reimbursement methodology or similar methodologies;
- 3) The amount of any discount on the price of services to be rendered by physicians; and
- 4) The dollar amount of capitation or fixed payment for health services rendered by physicians to health benefit plan enrollees (Tex. Ins. Code, 1999c).

The physician bargaining statute grants the OAG the authority to approve or disapprove proposed joint negotiations and proposed contracts (Tex. Ins. Code, 1999d) and charges the OAG with promulgating rules

necessary to establish a filing and approval process (Tex. Ins. Code, 1999e). The OAG is required to determine whether applicants have demonstrated that the likely benefits resulting from a joint negotiation or proposed contract outweigh the disadvantages attributable to a reduction in competition. When fees are being negotiated, the OAG is required to determine whether the health benefit plan has substantial market power and whether the contract terms adversely affect quality of care.

The OAG has determined that in order to immunize physicians from the antitrust laws, it must collect and analyze detailed information about the applicants, the proposed negotiations, and proposed contracts before approving them. This information is intended to allow the OAG to supervise the joint negotiation process and to specify parameters for conducting the negotiations and implementing the contracts. According to the OAG, the provisions of the physician collective bargaining rules "establish a regulatory structure that will enable the OAG to exercise the requisite level of active supervision to immunize joint negotiations from the antitrust laws" (25 Tex. Reg. 5302, 2000).

Under the new rules, there is a \$4000 fee for each application submitted to the OAG that proposes a fee-related negotiation. Each contract submitted to the OAG which is a product of a fee-related negotiation must be accompanied by a \$1000 fee. Applications proposing only non-fee-related negotiations carry a \$2000 fee, while there is a \$500 fee for each non-fee-related contract submitted to the OAG. Physician's representatives must submit a \$500 fee to act as a representative (1 Tex. Admin. Code, 2000a) The OAG maintains that such fees are justified because of the intensive analysis it must perform in reviewing an application or proposed contract.

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Physicians proposing to enter into joint negotiations with health benefit plans are required to submit an application to the OAG (1 Tex. Admin. Code, 2000b). A single application may propose joint negotiations with more than one health benefit plan, but a separate application is required for each negotiation group (1 Tex. Admin. Code, 2000c). The OAG rules spell out the information which the application must contain:

- 1) *Information about the Physician's Representative*, including name, occupation and experience in health care; past or pending investigations or proceedings related to price fixing or other antitrust violations or health care fraud or abuse; contracts for acting as a physician's representative, including compensation; legal and business relationships between the representative and the physicians; the representative's pecuniary interest, if any, in the contracts to be negotiated; any other physician groups the representative has represented, is representing, or plans to represent (1 Tex. Admin. Code, 2000d).
- 2) *Information about the Participating Physicians*, including name, specialties, primary practice areas, clinic affiliations and active hospital staff privileges; each integrated practice group (IPG) or independent practice association (IPA) to which the physician belongs; whether the physician is a provider for the health plan through any IPG or IPA; type of organization of the negotiation group; names of persons other than the representative authorized to represent the physicians or IPG in proposed joint negotiations; whether the physician or IPG has had a contract with the relevant health plan(s) within the last three years, a copy of any such contracts, and any correspondence within the past year concerning renewal, termination or modification of those contracts; and any past or pending investigations or proceedings related to price fixing or other antitrust violations or health care fraud or abuse involving the physician or IPG (1 Tex. Admin. Code, 2000e).
- 3) *Information about the Market for Physician Services*, including the number and descriptor of the ten CPT codes, excluding office visit codes, which comprise the largest portion of the physicians' revenues or billed charges (with an exception for non-fee-related negotiations by groups consisting of less than 15% of the physicians in the same specialty in the county); if a significant portion of the physicians' patients come from outside their county of practice, which geographic area those patients come from; number of physicians, by specialty, who compete with the participating physicians in the county or relevant geographic area; the most recent provider directory in the physicians' possession for each product for which negotiations are proposed (1 Tex. Admin. Code, 2000f).
- 4) *Information about the Proposed Negotiations*, including the products intended for negotiation; the proposed subject matter to be negotiated, the impetus for such negotiations, and previous attempts made by physicians or IPGs to achieve these goals by negotiating independently; the specific contract terms and conditions to be negotiated; the proposed time line of the negotiations; the expected impact on quality of

patient care, competition and consumers; the benefits of a contract between the health plan and physicians; the identity of any health care providers, other than the representative and participating physicians, who will be parties to and share risk in the contracts to be negotiated (1 Tex. Admin. Code, 2000g).

- 5) *Representative's Plan of Operation and Procedures to Ensure Compliance* (1 Tex. Admin. Code, 2000h).
- 6) *Information regarding Fee-related Negotiations*, including information demonstrating that each of the fee-related terms and conditions have already affected or threaten to adversely affect the quality of availability of patient care; names of health benefit plans, by product, which collectively account for 80% of each participating physician's or IPG's business in the last year; the effective dates of each contract currently in effect for each health plan in question, the termination dates for each contract terminated in the past three years, and the reason for each of those terminations; a "Contract Information Form" published by the OAG; any other information demonstrating that the health plan has substantial market power in the purchase of physician services (1 Tex. Admin. Code, 2000i).

The OAG has stated that it recognizes that the application requirements impose a burden on physicians seeking permission to enter into joint negotiations but that the requirements are not more burdensome than necessary to immunize the participants in joint

negotiations from antitrust liability. It is unclear at this time whether physicians will be willing to use the OAG's process for joint negotiations with health benefit plans. In preparing the required fiscal impact statement for the proposed physician bargaining rules, the OAG stated its assumption that approximately 112 initial applications would be filed each year (24 Tex. Reg. 10263, 1999). This estimate was based on the assumption that at least one physician group would want to negotiate with each health benefit plan in Texas and more with the larger plans. However, given the amount of work required in assembling the information which the OAG has deemed necessary, in addition to the OAG's fee, it is likely that the actual number of filings will be much lower. Because the OAG requires so much information in order to provide the level of supervision necessary under the state action doctrine, it is questionable whether the physician bargaining statute will prove to be of much practical benefit to physicians in their dealings with health plans.

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RURAL RESIDENCE, HISPANIC ETHNICITY, AND PERCEIVED ACCESSIBILITY OF MEDICAL CARE

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ABSTRACT

One indicator of health system performance is satisfaction with the accessibility of health services. Of particular concern in West Texas is the potential inadequate access among two historically vulnerable groups, rural residents and Hispanic-Americans. This study examined whether differences in satisfaction with several dimensions of accessibility exist between rural and urban residents as well as Hispanic, non-Hispanic white, and other racial/ethnic groups. Data were collected through a telephone survey of a random sample of residents of Odessa and eight surrounding rural communities. The findings suggest that rural residents are less satisfied with the accessibility of medical and hospital care, but no ethnic differences were found. Implications for health management and policy are discussed.

Key words: access, ethnicity, health status, Hispanic, Mexican ethnicity, rural health. (*Texas Journal of Rural Health* 2000; 18(4): 35-47)

INTRODUCTION

Health system managers and health policy makers need information on access to medical

care to effectively organize health care services and appropriately allocate scarce resources across market areas. Numerous studies have examined the determinants of realized access, often measured as the number of physician visits over a six-month or one-year period, among residents of rural areas. Previous research has shown that both social and economic factors, including age, occupation, income, ethnicity, education, and health status are related to physician service use by rural residents (Aday & Andersen, 1984; Freeman et al., 1987; Bashshur, Homan, & Smith, 1994; Himes & Rutrough, 1994; Rohrer, Urdaneta, Vaughn, & Merchant, 1998). However, because many of the studies of rural health care have been conducted in the southeastern or upper midwestern United States, the generalizability of their findings is limited to localities that have similar population and health system characteristics. Questions remain about access in rural areas with a high percentage of Hispanics, such as West Texas.

A review of the general health services literature suggests that a variety of financial and non-financial factors are associated with Hispanics' use of health services. Not surprisingly, a lack of health insurance coverage has been shown to be negatively associated with Hispanics' access to medical care (Estrada, Trevino, & Ray, 1990; Trevino, Moyer, Valdez, & Stroup-Benham, 1991). Income, gender, family size, having a usual source of care, level of acculturation, and health status are among the other factors that have been shown to contribute to their use of physician services (Schur, Bernstein, & Berk, 1987; Wells, Golding, Hough, Burnam, & Karno, 1989; Burnette & Mui, 1999; Markides, Levin, & Ray, 1985).

The goal of this study was to determine if rural residence and Hispanic ethnicity were associated with perceived accessibility of

medical care. Several dimensions of accessibility were considered, including satisfaction with the accessibility of medical care overall, the accessibility of hospital care, appointment waiting times, and doctors' office hours. An improved understanding of the potential rural/urban and ethnic differences in these aspects of accessibility could better equip health policy makers and managers to evaluate rural health system performance and plan health services which meet the needs of rural populations.

METHODS

Sample

The sample was based on a random-digit telephone survey of 3,000 heads-of-households residing in West Texas. Sampling was proportional to the population in each of nine communities: Odessa, Ft. Stockton, Kermit, Monahans, Ozona, Pecos, Stanton, Crane, and McCamey. Telephone calls were placed to each phone number in the sample on Monday through Thursday evenings, between 6 p.m. to 9 p.m. local (Central zone) time, during October and November 1998. The questionnaire consisted of 96 items measuring a multitude of health status, health services utilization, demographic, and socioeconomic variables as well as perceptions of the accessibility of health services. The questionnaire was administered via a scripted interview conducted by a trained graduate student. English and Spanish-language versions were validated in smaller groups of clients served by Title V (Maternal & Child Health) programs in Lubbock and Hale counties during the previous year. Participants in this study were offered the questionnaire in Spanish, but none felt they needed a Spanish-language interview. Most

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interviewees required approximately eight minutes to complete the questionnaire via telephone.

Of the 3,000 calls attempted, 622 were either unanswered or had telephones that were disconnected. A total of 1,024 adults agreed to participate in the study, yielding a 34% response rate. Accounting for the 622 unanswered or disconnected telephones, the response rate was 43%.

Demographics and physician supply characteristics for the counties in which the sample communities are located are displayed in Table 1 (Texas Department of Health, 2000). Approximately 21% of the study participants identified themselves as Hispanic or Mexican-American, whereas more than 35% of the population of each community included in the sampling frame is Hispanic. Thus, participation rates could have been lower among

Hispanics. It is possible that some of the Hispanics in these communities are seasonal residents and are less likely to have a telephone. If this is the case, they could not have been a member of the sampling frame.

Dependent Variables

Rather than using measures of realized access, such as the number of physician visits, the present study focused on consumer perceptions of accessibility. Realized access measures capture whether an individual gains entry into the health care system and the frequency of service use. However, realized access measures do not adequately tap consumers' attitudes about their local health care systems. As an example, an individual who is able to visit a physician, but must wait three weeks for an appointment, is

Table 1: Selected Facts for Sample Counties (1997 data)

County (community)	Population Estimate	Hispanic Population	Population/Sq. Mile	Population/Physician
Ector (Odessa)	123,795	35.2%	137.4	878
Crane (Crane)	4,603	39.4%	5.9	921
Crockett (Ozona)	4,652	50.6%	1.7	2,326
Martin (Stanton)	5,123	42.7%	5.6	1,708
Pecos (Ft. Stockton)	15,883	58.1%	3.3	1,764
Reeves (Pecos)	15,329	79.8%	5.8	2,190
Upton (McCamey)	4,061	44.4%	3.3	677
Ward (Monahans)	12,797	41.0%	15.3	1,280
Winkler (Kermit)	8,335	42.7%	9.9	1,667

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unlikely to be satisfied with the accessibility of medical care.

Single item questions were used to measure four dimensions of perceived accessibility of health services. The first item assessed individuals' overall perceived accessibility of medical care. Additional items measured perceptions of access to hospital care, the hours when doctors' offices were open, and the length of time between making an appointment and the day of the visit. For each item, respondents were asked to rate whether accessibility was excellent, good, fair, poor, or they did not know. Responses were collapsed into dichotomous categories to represent excellent versus good, fair, and poor ratings of accessibility. Individuals who responded "don't know" as well as non-responses were included in the comparison group (good/fair/poor). Responses were dichotomized for two reasons. First, acquiescence response bias is common when individuals are asked to rate their satisfaction with health services. Second, assuming that health system managers strive to provide excellent health care, they should be most interested in the factors associated with excellent ratings.

Independent Variables

Andersen's Behavioral Model of Health Services Use was employed to guide the conceptualization of relationships (Andersen, 1995). Accordingly, predisposing, enabling, and need characteristics were hypothesized to impact perceived accessibility. The operationalization of each independent variable is explained in more detail below.

Predisposing variables included age, gender, race/ethnicity, and rural residence. Age was categorized as young (18 to 34 years), middle-aged (35 to 54), and near elderly/elderly (55 years and over). Race and ethnicity were not separated in the survey.

Therefore, race/ethnicity was categorized as white non-Hispanic, Hispanic/Mexican American, and all others (Black, Asian or Pacific Islander, American Indian/Native American, and other). Respondents who resided in Ft. Stockton, Kermit, Monahans, Ozona, Pecos, Stanton, Crane, or McCamey were considered rural residents; Odessa was considered urban. A categorization of the number of persons in the household, including the respondent, was included under the hypothesis that household size may be related to increased social support, which could foster the use of health services and, subsequently, affect perceived accessibility. Household size was categorized as small (one person), medium (two persons), and large (more than two persons). Finally, educational status was categorized as some college education versus elementary or high school education.

Enabling variables included annual household income level, employment status, and whether the individual had been uninsured in the past three years. Household income was categorized as low (\$25,000 or less), medium (\$26,000 to \$50,000), and high (\$51,000 or higher). Employment status was categorized as full-time, part-time, or unemployed, which included retirees, students, and homemakers. Unfortunately, type of insurance coverage was not included in the survey. However, whether the respondent had continuous insurance coverage for the past three years was accounted for.

Several measures of need for health care were included. Overall perceived health status was assessed using a single item that asked individuals to rate their health as excellent, good, fair, or poor. Responses were categorized as excellent, good (the comparison group), and fair or poor. Psychological functioning was measured using a single item that asked respondents if emotional problems

Table 2: Relationships of Predisposing, Enabling, and Need Factors to Accessibility of Medical Care and Hospital Care

Characteristic	Medical Care	Medical Care	Hospital Care	Hospital Care	Total
	Excellent (n = 317) %	Good/Fair/Poor (n = 707) %	Excellent (n = 344) %	Good/Fair/Poor (n = 680) %	
<i>Predisposing</i>					
Age category					
Young (18-34)	25.2	23.8	25.0	23.8	24.2
Middle-aged (35-44)	40.7	43.7	40.7	43.8	42.8
Older (55 or more)	34.1	32.5	34.3	32.4	33.0
Male	33.4	33.1	31.4	34.1	33.2
Rural resident	30.3***	41.0	28.5****	42.4	37.7
Race/ethnicity					
Mexican/Hispanic	16.7	22.2	16.0**	22.8	20.5
White, non-Hispanic	77.6	71.4	77.6	71.2	73.3
Other race	5.7	6.4	6.4	6.0	6.2
Household size					
Low (one person)	20.2	17.8	17.2	19.3	18.6
Medium (two persons)	36.9	34.1	35.5	34.7	35.0
High (more than two persons)	42.9	48.1	47.4	46.0	46.5
College education	45.4	50.9	55.8**	48.2	50.8
<i>Enabling</i>					
Income category					
Low (\leq \$25,000)	24.3	33.0	25.6**	32.7	30.3
Medium (\$26 to \$50,000)	36.6	34.4	32.6	36.3	35.1
High (\$51,000 or more)	39.1	32.7	41.9	31.0	34.7
Employment status					
Full-time worker	54.3	50.8	54.7	50.4	51.9
Part-time worker	7.3	9.5	9.0	8.7	8.8
Unemployed	38.5	39.8	36.3	40.9	39.4
Continuous insurance	78.6	73.7	78.5	73.5	75.2
<i>Need</i>					
Perceived health status					
Excellent	36.9****	17.4	33.7****	18.2	23.4
Good	40.4	58.3	45.1	56.6	52.7
Fair/poor	22.7	24.3	21.2	25.2	23.8
Emotional problems	11.4	15.6	14.0	14.4	14.3
Hospitalized in last year	16.1	14.9	16.6	13.5	14.6
No. of diseases & disorders					
Zero diseases	20.2	23.1	19.5	23.5	16.5
One disease	19.9	15.0	16.6	16.5	22.2
Two or more diseases	59.9	62.0	64.0	60.0	61.3

*p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

in the past four weeks limited their work or other activities. Whether an individual was hospitalized in the last year was also included as a measure of need. Individuals who have been hospitalized should have more experience with the medical care system, which may influence their perceptions of accessibility. Finally, individuals were asked to report if they had a lifetime history of a list of defined disorders (hypertension, heart attack, heart failure or enlarged heart, diabetes or high blood sugar, angina, skin cancer, any other type of cancer, migraines or severe headaches, asthma, and emphysema or chronic bronchitis) as well as a current diagnosis of a second list of defined disorders (chronic allergies or sinus trouble, arthritis or rheumatism, sciatica or back problems, blindness or trouble seeing with one or both eyes, dermatitis or chronic skin rash, deafness or trouble hearing with one or both ears, limitation in the use of an arm or leg, rheumatic heart disease, and hardening of the arteries or arteriosclerosis). The total number of diseases and disorders an individual reported having was categorized as none (the comparison group), one, and two or more.

ANALYSIS

All respondents were included in the analysis to maximize the sample size. Missing values for dichotomous independent variables were imputed using a cold-deck imputation technique (Aday, 1996). In cold-deck imputation, a missing value is replaced by its most plausible or reasonable substitute. For example, if the respondent failed to report if he/she had been hospitalized in the last year (Hospitalized = 1), that respondent was included in the comparison group (Hospitalized = 0). Misclassification is possible under this method, but would lower

the chance of falsely finding an association.

The chi-square test was used to test for associations between each of the independent and dependent variables. Logistic regression was used to conduct multivariate analyses. All predisposing, enabling, and need variables were retained in the multivariate analyses to control for potential confounding.

RESULTS

Descriptive Results

Table 2 presents the relationship of predisposing, enabling, and need factors to perceived accessibility of medical care and hospital care. Rural residence was associated with perceived accessibility of both medical and hospital care. Race/ethnicity, college education, and income level were associated with ratings of accessibility of hospital care, but were not associated with ratings of accessibility of medical care. Subjective health status was related to perceived accessibility of both medical care and hospital care.

Table 3 presents the relationship of predisposing, enabling, and need factors to satisfaction with the time between making an appointment and the day of the visit and doctors' office hours. Rural residence was not associated with satisfaction with waiting times nor doctors' office hours. Race/ethnicity and household size were associated with ratings of appointment waiting times, but not with ratings of office hours. Never being uninsured over the last three years was related to satisfaction with office hours. Finally, subjective health status was associated with satisfaction with appointment waiting times as well as office hours.

Table 3: Relationships of Predisposing, Enabling, and Need Factors to Satisfaction with Appointment Waiting Times and Doctor Office Hours (Percentage)

Characteristic	Appt. Waiting Times Excellent (n = 191)	Appt. Times Good/Fair/Poor (n = 833)	Office Hours Excellent (n = 226)	Office Hours Good, Fair, Poor (n = 798)
<i>Predisposing</i>				
Age category				
Young (18-34)	25.1	24.0	24.3	24.2
Middle-aged (35-44)	36.7	44.2	39.4	43.7
Older (55 or more)	38.2	31.8	36.3	32.1
Male	35.1	32.8	33.6	33.1
Rural resident	39.3	37.3	34.5	38.6
Race/ethnicity				
Mexican/Hispanic	13.1**	22.1	16.8	21.6
White, non-Hispanic	78.5	72.2	75.2	72.8
Other race	8.4	5.6	8.0	5.6
Household size				
Low (one person)	23.6*	17.4	20.4	18.1
Medium (two persons)	37.2	34.5	36.7	34.5
High (more than two persons)	39.3	48.1	42.9	47.5
College education	56.0	49.6	52.7	50.3
<i>Enabling</i>				
Income category				
Low (<\$25,000)	25.7	31.3	29.2	30.6
Medium (\$26 to \$50,000)	34.6	35.2	31.4	36.1
High (\$51,000 or more)	39.8	33.5	39.4	33.3
Employment status				
Full-time worker	51.8	51.9	49.6	52.5
Part-time worker	5.2	9.6	11.1	8.2
Unemployed	42.9	38.5	39.4	39.4
Continuous insurance	77.5	74.7	81.4**	73.4
<i>Need</i>				
Perceived health status				
Excellent	39.3****	19.8	38.9****	19.1
Good	36.7	56.4	36.3	57.4
Fair/poor	24.1	23.8	24.8	23.6
Emotional problems	11.5	14.9	14.2	14.3
Hospitalized in last year	15.7	14.3	14.2	14.7
No. of diseases & disorders				
Zero diseases	15.7	16.7	19.0	15.8
One disease	22.0	22.2	19.5	22.9
Two or more diseases	62.3	61.1	61.5	61.3

*p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

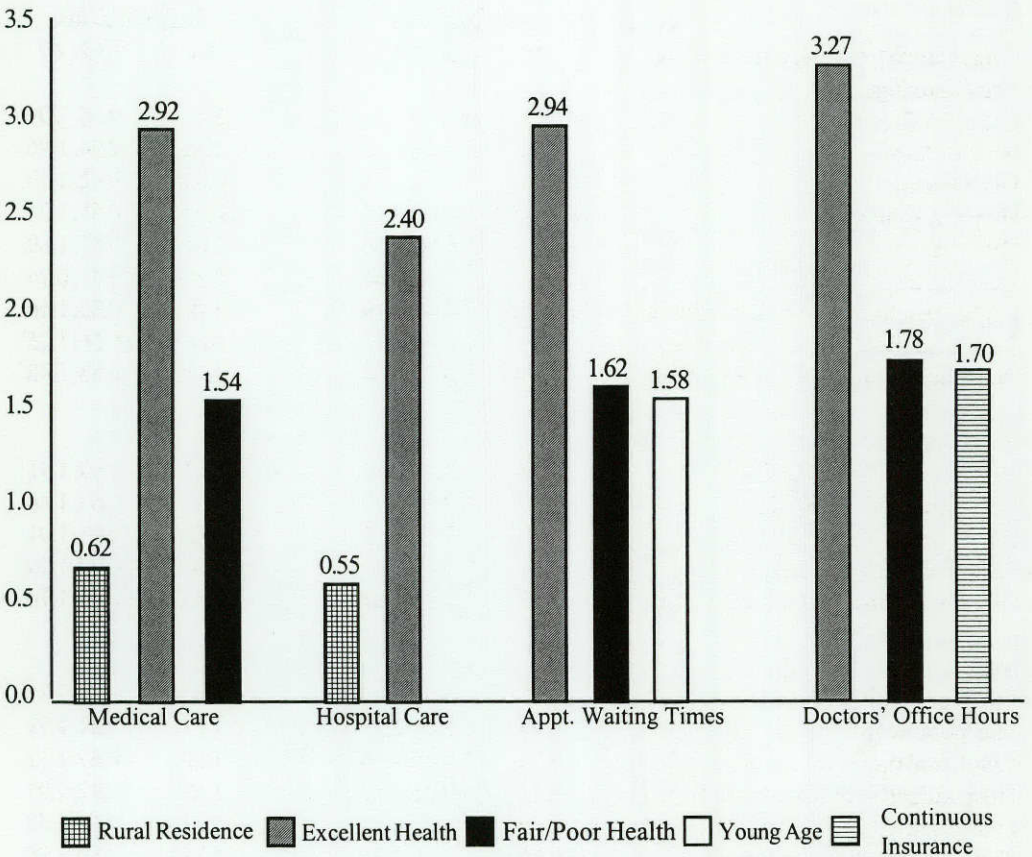
Regression Results

Significant odds ratios for the logistic regressions on the accessibility of medical care and accessibility of hospital care are displayed in Figure 1. The full estimations, both of which were highly significant, are displayed in Table 4. First, in regard to medical care, rural residents were 38% less likely to rate their accessibility as excellent, controlling for predisposing, enabling, and need factors. Individuals who perceived their

health as excellent were almost three times more likely than individuals who perceived their health status as good to rate the accessibility of medical care as excellent. To some surprise, persons who perceived their health status as fair/poor were also more likely (54%) than those who perceived their health status as good to rate the accessibility of medical care as excellent.

In regard to the hospital care, rural residents were 45% less likely to rate their accessibility as excellent. As was the case for

Figure 1: Adjusted Odds Ratios for Variables Associated with Satisfaction with Accessibility



PERCEIVED ACCESSIBILITY OF MEDICAL CARE

medical care, individuals who perceived their health status as excellent were much more likely to rate have a highly positive rating of hospital care accessibility. One other factor, high income, approached significance ($p < 0.06$).

Significant odds ratios for the logistic regressions on satisfaction with the time from appointment to the day of the visit and satisfaction with doctors' office hours are

also displayed in Figure 1. (The full logistic regression estimation is presented in Table 5). Younger individuals were 58% more likely than middle-aged persons to rate appointment waiting times as excellent. Again, health status was shown to be associated with perceptions of accessibility, as those persons who perceived their health status as excellent were approximately three times more likely to have excellent ratings of appointment waiting

Table 4: Logistic Regression on Accessibility of Medical Care and Accessibility of Hospital Care (n = 1,024)

Characteristic (reference group)	Accessibility of Medical Care		Accessibility of Hospital Care	
	OR	95% CI	OR	95% CI
<i>Predisposing</i>				
Older (35-54)	1.09	0.73, 1.63	1.41	0.95, 2.09
Young (35-54)	1.34	0.94, 1.95	1.36	0.94, 1.96
Male (female)	0.95	0.70, 1.28	0.84	0.62, 1.13
Hispanic (white)	0.91	0.61, 1.36	0.82	0.55, 1.21
Other race (white)	0.97	0.53, 1.76	1.07	0.61, 1.89
Rural resident (urban)	0.62	0.46, 0.84	0.55	0.41, 0.74
High household size (> 2 persons)	0.85	0.60, 1.19	1.19	0.85, 1.66
Low household size (\leq 2 persons)	1.04	0.70, 1.55	0.84	0.56, 1.25
Some college education (none)	1.04	0.77, 1.40	1.11	0.83, 1.48
<i>Enabling</i>				
High income (\$26-\$50,000)	1.05	0.75, 1.46	1.37	0.99, 1.91
Low income (\$26-\$50,000)	0.77	0.53, 1.12	0.97	0.67, 1.40
Full-time worker (unemployed)	1.09	0.76, 1.55	1.35	0.95, 1.91
Part-time worker (unemployed)	0.81	0.47, 1.40	1.20	0.72, 1.99
Continuous insurance (uninsured)	1.17	0.82, 1.67	1.20	0.85, 1.70
<i>Need</i>				
Excellent health (good)	2.92	2.08, 4.09	2.40	1.72, 3.35
Fair/poor health (good)	1.54	1.07, 2.22	1.19	0.84, 1.71
Emotional problems (none)	0.74	0.48, 1.14	1.01	0.67, 1.51
Hospitalized (not hospitalized)	1.26	0.86, 1.87	1.35	0.92, 1.97
One disease/disorder (no diseases)	0.76	0.48, 1.19	0.97	0.62, 1.52
Two or more diseases/disorders	0.90	0.60, 1.34	1.34	0.89, 1.99

PERCEIVED ACCESSIBILITY OF MEDICAL CARE

times. Moreover, individuals who rated their health status as fair/poor were 62% more likely to rate appointment waiting times as excellent. Part-time employment approached being a significant factor ($p < 0.06$), with part-time workers being about half as likely to be satisfied with appointment waiting times as unemployed persons.

Rural residence was not significant in the model of satisfaction with doctor's office

hours. However, health status, in addition to continuous insurance coverage, were found to be associated with excellent ratings of office hours. Respondents who had continuous insurance coverage over the last three years were 70% more likely to have an excellent rating as those who were uninsured at some point over this time period. Respondents who perceived their health status as excellent were over three times as likely to rate

Table 5: Logistic Regression on Satisfaction with Time from Appointment to Visit and Accessibility of Office Hours (n = 1,024)

Characteristic (reference group)	Time from <u>Appt. to Visit</u>		Accessibility of <u>Office Hours</u>	
	OR	95% CI	OR	95% CI
<i>Predisposing</i>				
Older (35-54)	1.25	0.78, 1.99	1.15	0.74, 1.79
Young (35-54)	1.58	1.01, 2.47	1.30	0.86, 1.97
Male (female)	1.06	0.74, 1.51	1.05	0.75, 1.47
Hispanic (white)	0.69	0.42, 0.51	0.98	0.63, 1.54
Other race (white)	1.62	0.86, 3.04	1.63	0.89, 2.99
Rural resident (urban)	1.14	0.81, 1.61	0.84	0.60, 1.16
High household size (> 2 persons)	0.91	0.61, 1.37	0.89	0.60, 1.30
Low household size (\leq 2 persons)	1.27	0.82, 1.99	0.93	0.60, 1.44
Some college education (none)	1.17	0.82, 1.66	0.98	0.71, 1.36
<i>Enabling</i>				
High income (\$26-\$50,000)	1.16	0.78, 1.72	1.27	0.87, 1.86
Low income (\$26-\$50,000)	0.86	0.55, 1.34	1.14	0.75, 1.73
Full-time worker (unemployed)	0.89	0.55, 1.34	0.91	0.61, 1.36
Part-time worker (unemployed)	0.50	0.24, 1.04	1.43	0.83, 2.48
Continuous insurance (uninsured)	0.99	0.65, 1.50	1.70	1.13, 2.55
<i>Need</i>				
Excellent health (good)	2.94	1.99, 4.34	3.27	2.26, 4.74
Fair/poor health (good)	1.62	1.05, 2.50	1.78	1.19, 2.67
Emotional problems (none)	0.82	0.49, 1.37	1.08	0.69, 1.71
Hospitalized (not hospitalized)	1.10	0.70, 1.74	0.96	0.62, 1.51
One disease/disorder (no diseases)	1.11	0.65, 1.92	0.79	0.48, 1.31
Two or more diseases/disorders	1.23	0.75, 2.00	0.94	0.60, 1.46

the accessibility of office hours as excellent. Moreover, those who perceived their health status as fair poor were 78% more likely to rate doctors' office hours as excellent.

DISCUSSION

Before discussing the interpretations of our findings, several study limitations should be addressed. First, the generalizability of the results may be limited to Odessa and the surrounding rural region. Second, potentially important variables were excluded from the survey. In particular, information about the type and extent of insurance coverage was not available. It is widely recognized that insurance coverage influences the use of health care services. It could also, theoretically, affect individuals' perceptions of accessibility. However, because insurance coverage is associated with employment status and income, and these two variables were accounted for in the analyses, the inclusion of additional insurance variables may not have had a substantial effect on our results. Despite such limitations, the findings of this study do have implications for rural health management and policy, particularly because few previous studies have been based on samples comprised of both rural and Hispanic populations.

To some surprise, the present study found no relationship between Mexican or Hispanic ethnicity and satisfaction with the accessibility of health care services. There are several explanations for these findings. First, while Hispanics may be less likely to use medical care (e.g., visit physicians), they may not be less satisfied with accessibility. Some researchers have suggested that Mexican-Americans, particularly those who are less acculturated into American society, do not

view medical care as beneficial. Rather than utilizing standard medical care, a small percentage of Mexican-Americans may choose to visit folk healers (Higginbotham, Trevino, & Ray, 1990). If this is the case, then Mexican Americans may not perceive impediments to the access of health services as problematic. Of course, there are undoubtedly other explanations for our failure to find ethnic differences in service use.

Whether an individual resided in one of the eight rural communities comprising the sample, rather than Odessa, was negatively associated with perceived accessibility of medical care overall and hospital services. Controlling for other factors, rural residents were much less likely to rate the accessibility of medical care or appointment waiting times as excellent. Thus, the health systems serving these rural areas may not be meeting their consumers' needs. More focused analyses are warranted, however, to ascertain exactly how existing health services could be reorganized or what new health services need to be offered to improve these rural residents' access to care. On the other hand, the availability and convenience of services may be satisfactory, but rural residents may encounter other access barriers. These could include financial barriers, such as inadequate insurance coverage, or transportation barriers, to name a few.

In addition to rural residence, health status was found to be associated with each dimension of accessibility, underscoring the importance of taking into account health status when evaluating health system performance. Individuals who rated their health as excellent were consistently two to three times more likely than those who rated their health as good to appraise their satisfaction of accessibility of medical care, hospital care, appointment waiting times, and doctors' office hours as excellent. One

explanation for these findings is that healthier individuals do not need to use as much medical care and, thus, have not encountered access barriers. Individuals who rated their health status as fair or poor also tended to be more satisfied with accessibility. Sicker individuals may require more medical care and may be forced to overcome barriers to access. Once they become experienced in dealing with the medical care system, they may be more satisfied than those with good health. It should be noted, however, that the differences in satisfaction with accessibility are much greater between those with excellent and good health than the differences between those with fair/poor health and good health.

Health system managers should take into account the effects of health status on individuals' ratings of health system performance when they conduct similar surveys of access and satisfaction. Failure to do so could lead to false conclusions and, subsequently, inappropriate management decisions. For example, assume that an administrator of a regional health system compares ratings of satisfaction with health services between urban and rural-based clinics. If the urban clinics have a higher proportion of healthy patients than the rural clinics, their performance ratings may appear falsely inflated.

Other variables were less consistently related to accessibility. As compared to middle-aged persons (age 35 to 54), younger individuals (age 18 to 34) were more satisfied with appointment waiting times. Younger individuals may have different expectations about how long they should have to wait to see a doctor. Continuous insurance coverage was associated with excellent ratings of doctors' office hours, but more research is needed to determine how the type and extent of insurance coverage may influence this and other dimensions of accessibility among rural

and Hispanic populations.

In summary, the results of this study imply that differences in satisfaction with accessibility to medical care exist between residents of the rural areas surrounding Odessa and Odessa itself, but not between Hispanics and non-Hispanic whites. As health systems become more competitive, health care managers should take notice of such differences in consumer perceptions. Traditionally, health care services have been planned to meet the needs of health care providers, rather than consumers (Rohrer, 2000). However, in an era of increased competition and managed care, health systems must become more responsive to consumer needs and preferences. Failure to satisfy the preferences of rural consumers may cause them to travel outside of their local market areas for health services (Borders, Rohrer, Hilsenrath, & Ward, 2000) and, consequently, undermine the financial viability of rural health systems as well as rural communities.

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THE RELATIONSHIP OF PHYSICAL ACTIVITY TO PSYCHOLOGICAL HEALTH,
SATISFACTION WITH LIFE, AND LIMITATION DUE TO SECONDARY
CONDITIONS IN ADULTS WITH PHYSICAL DISABILITIES

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ABSTRACT

Disabilities are recognized as one of the nation's largest public health issues. According to recent Congressional estimates there are now more than 49 million Americans with disabilities. Many are sedentary and engage in behaviors which place them at risk for further disabling conditions. Path analytic techniques were used to examine the relationships between physical activity, life satisfaction, disability due to secondary conditions, and psychological health among 119 persons with severe physical disabilities primarily from rural areas. An explanatory model is presented testing the hypothesis that life satisfaction may be a linking variable between health (psychological health and disability due to secondary conditions) and physical activity. A recursive path model is also presented illustrating circular relationships leading to the development of potential interventions. Results suggest that future research should include larger numbers of participants and more measures of relevant health and psychosocial measures.

Key words: health promotion, physical disability, secondary conditions, prevention, path analysis. (Texas Journal of Rural Health 2000; 18(4): 48-60)

INTRODUCTION

In the past 15 years, exciting new evidence of the health benefits of an active lifestyle has been presented for general populations (Bouchard, Shephard, Stephens, Sutton, & McPherson, 1990), minority populations (Larson & Bruce, 1987; Lewis et al., 1993), older Americans (Gorman & Posner, 1988; Larson & Bruce, 1987) and women (Yeager & Macera, 1994). It is interesting to note, however, that the vast majority of the population does not engage in any form of regular activity (Godin & Shephard, 1990) and are more likely to become deconditioned in their later years (Vorhies & Riley, 1993). At this time, only 20% of the people in the United States are involved in physical activity at an intensity high enough to afford health benefits (United States Department of Health and Human Services, 1996). In 1990, six out of ten adults in the United States reported little or no leisure-time physical activity (Centers for Disease Control, 1993). This highlights one of the most distressing findings regarding exercise behavior. It is extremely difficult to begin and maintain.

There is a growing literature on the benefits of physical activity and its advantages for people with disabilities (Morrison & Melton, 1993; Vorhies & Riley, 1993). However, the majority of this literature does not address how secondary conditions (e.g., muscle atrophy, decubitus ulcers, osteoporosis, and contractures) experienced by people with disabilities, such as spinal cord injury (SCI), might be prevented or the symptoms managed with regular physical activity (Corbet, 1994; Seekins, Clay, & Ravesloot, 1994) even though this is common lore in rehabilitation settings (Sullivan, 1996). Much of the existing research on the benefits of

physical activity on adults with mobility impairments has targeted physiological benefits that occur after the physical activity has taken place (Santiago, Coyle, & Kinney, 1993).

Very few studies have examined the relationship between levels of physical activity, psychological health, and other activity determinants for people with disabilities (Dubbert, 1992). It is important to examine these relationships because health related behaviors and practices such as physical activity are "not simply individually determined but rather social products which are subject to complex structural and interactional constraints" (Watson, 1995). For people without disabilities, several factors have been shown to be related to adherence to a physically active lifestyle. These include percent of body fat, self-motivation, and body weight (Shifflett, Cator, & Megginson, 1994), self-efficacy (Garcia, & King, 1991), self-monitored attendance (Dunnagan, Haynes, & Noland, 1999), and social influence and support (Robertson, Mellor, Hughes, & Sanderson, 1988). Social influence constructs include the determinants of subjective norm, social support, and cohesion which are important cognitive indicators of the relationships between social influence and exercise (Courneya & McAuley, 1996; Dishman & Sallis, 1993).

Interestingly, Cushman and Hassett (1992) found that there were no relationships between quality of life, limitation due to secondary conditions, and exercise in a quality of life study they conducted with 43 persons with SCI. However, participants who did engage in a regular exercise program were less likely to say that they had changed their daily routine due to fatigue. As a whole, these are puzzling findings, because if regular physical activity has all of the benefits

attributed to it, such as improved cardiovascular health, increased weight control, and decreased limitation due to secondary conditions, variables such as quality of life should be enhanced.

The purpose of this study is to investigate and report the physical activity levels of adults with SCI and other severe physical disabilities and suggest a model that may describe the relationships between physical activity, health, and other psychological variables.

METHOD

Participants and Setting

Surveys were sent to 212 people with mobility impairments in the states of Montana, Kansas, and Missouri in 1994. Lists of 180 potential participants were supplied by Independent Living Centers in Kansas, Missouri, and Montana. All persons listed were sent surveys. Thirty-two persons having handicapped parking permits who had participated in previous research in Montana were also sent surveys. One-hundred nineteen people (56%) elected to respond, 101 from Independent Living Centers in Kansas, Missouri, and Montana, and 18 handicap parking permit holders from state of Montana. Thirty-five (34%) of the responding participants resided in metropolitan areas, while 79 (66%) resided in non-metropolitan, rural areas, making the sample primarily rural residents. Of these, 63 were men, 53 were women, and 3 did not identify their gender. Most participants had severe mobility impairments. Table 1 presents the numbers people with each type of disability. Twelve participants reported the presence of more than one type of disabling condition.

Participants had an average of 13 years of education. The mean age of respondents in the study was 43. Eighty-six percent of the participants were white, 6% were black, 1% were Asian, and 7% were Native-American. Most of the participants were non-smokers (N= 74), with the remaining smoking an average of 14 cigarettes per day. Seventy-five percent (N= 84) of the participants reported experiencing some limitation due to mobility problems, which would further limit their access to physical activity. Sixty-three percent of the participants exercised once or less per week, with the remaining 37% exercising two or more times per week.

Procedures and Measures

Each participant was mailed a 57-page questionnaire with a request to complete it and return it to the researchers for a \$15.00 reimbursement. The questionnaire was divided into three parts. The first part assessed the amount of functional limitation due to secondary conditions that participants reported experiencing. The second part measured behavioral factors that might be associated with the onset of secondary conditions. The third part contained standardized tests designed to assess psychological factors that might be associated with the onset of secondary conditions. Each of these three sections is briefly described below. The psychometric properties of each instrument have been published previously and will not be repeated here.

Functional Limitation Due to Secondary Conditions (Surveillance Instrument of Secondary Conditions-SCSI)

Participants were asked to indicate how many hours per week (rarely or never = 0; 1 to

5 hours = 1; 6 to 10 hours = 2; and 11 or more hours = 3) they experienced activity limitations caused by each of the 43 different secondary conditions (e.g., chronic pain, sleep disturbance, spasticity, contractures). The consumers rated these secondary conditions according to how limited they were in terms of activities in which they wished to participate. For example, difficulty falling or staying asleep and/or difficulty staying awake during the day in order to pursue other activities would warrant a rating of 1, 2, or 3 for sleep disturbances. The ratings for each

of the conditions were summed to form the score for limitation due to secondary conditions called the Sum of Secondary Conditions. Seekins et al. (1994) reported internal consistency for the SCSI of 0.88. Construct validity of the SCSI has been supported by factor analytic studies demonstrating its use (Ravesloot, Seekins, & Walsh, 1997). Finally, the total summed SCSI score correlates 0.41 with the Craig Handicap Assessment and Reporting Technique (Whiteneck, Charlifue, Gerhart, Overholser, & Richardson, 1992), a measure of disability outcome.

Table 1: Types of Disabilities of Study Participants

Type of Disability	Number of Participants
Spinal Cord Injury	73
Multiple Sclerosis	15
Cerebral Palsy	9
Traumatic Brain Injury	6
Arthritis	6
Stroke	5
Muscular Dystrophy	4
Amputation	3
Parkinson's Disease	2
Polio	1
Spina Bifida	1
Did Not Report Disability Type	6
Total	131

Behavioral Factors

From among the many behavioral factors that were assessed in this study, three were most significant: overall health, overall independence, and physical activity. The variables of overall health and overall independence were measured with items that asked the participants to rate their health and independence over the past 12 months using a four-point scale. In order for the direction of the scale to be the same as that of the functional limitation due to the secondary conditions scale, "Excellent" was given a ranking of 0, and "Poor" was given a ranking of 3. Physical activity was measured using the Exercise Sub-scale of the Health-promoting Lifestyle Scale (Walker, Sechrist, & Pender, 1987), which measures how regularly a person engages in various levels of physical activity.

Psychological Factors

Four measures of psychological health were used for this study. These include Orientation to Life - Sense of Coherence (SOC) (Antonovsky, 1987); The Hope Scale (Snyder, Harris, Anderson, & Holleran, 1991);

The Center for Epidemiologic Studies-Depression (CES-D) (Radloff, 1977); and Satisfaction with Life (Deiner, Emmons, Larsen, & Griffin, 1985). Each of these measures will be briefly described.

The SOC is a global orientation measure that expresses the extent to which one has a pervasive and enduring feeling of confidence that one's internal and external environment are predictable and that things will work out as well as can reasonably be expected. The participants' SOC was measured with 29 different items on a seven-point scale, with an anchoring statement at each end (e.g., never have this feeling to always have this feeling). Internal consistency of the SOC assessed by Cronbach alpha ranges between 0.84 and 0.93 (Antonovsky, 1987). Hope was measured using a twelve-item scale (Snyder et al., 1991) to measure sense of goal-directed activity and

goal-pursuing strategies. Test-retest coefficients for the scale have ranged from 0.73 to 0.82. Depression was measured using the CES-D scale, a short self-report symptom checklist, which emphasizes the affective components of depressed moods.

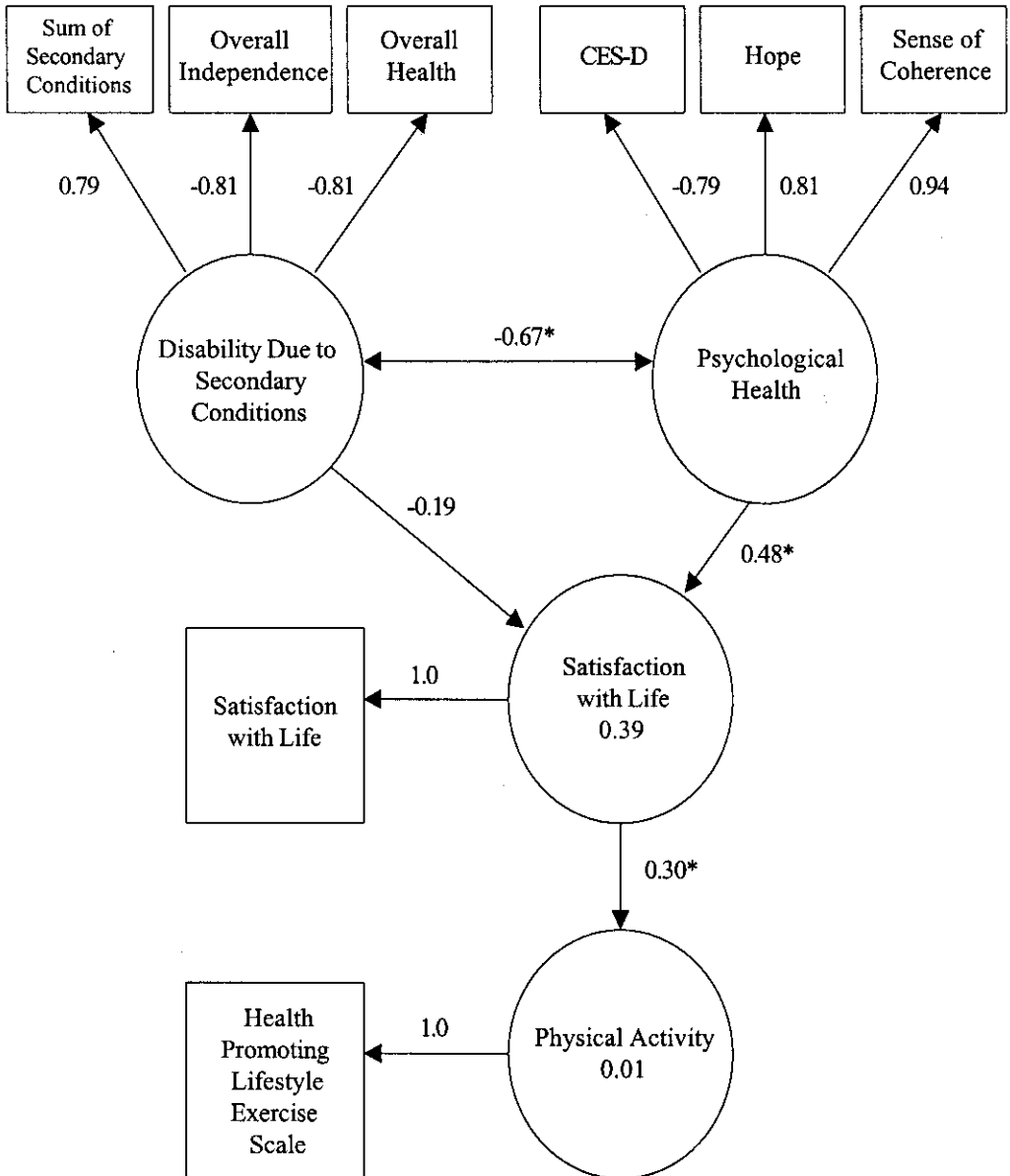
Life satisfaction was measured using The Satisfaction With Life Scale (Deiner et al., 1985), and was treated as a separate latent variable because it represents a more spiritual dimension to health than is frequently measured with psychologically oriented standardized scales. It consists of five questions designed to provide a global assessment of a person's quality of life according to their chosen criteria. Deiner et al. (1985) report a coefficient Alpha of 0.87 for the Satisfaction with Life Scale, and a two-month test-retest stability coefficient of 0.82.

Table 2: Mean Scale Scores of Persons with Mobility Impairments

<u>Scale</u>	<u>M</u>	<u>SD</u>	<u>n</u>
Limitation Due to Secondary Conditions	33.28	19.35	109.00
Overall Health	1.31	0.83	118.00
Overall Independence	1.61	0.98	117.00
Health Promoting Lifestyles Exercise Subcale	9.20	3.30	112.00
Orientation to Life	133.03	26.03	109.00
Hope	23.50	4.60	111.00
CES-D	16.05	11.50	112.00
Satisfaction with Life	18.96	6.50	114.00

Proportion of Persons Physically Active: 28%

Figure 1. Influences on Physical Activity (Model A)



N=119, Chi-squared with 17 Degrees of Freedom= 33.96 (P<0.005), Chi-squared: Degrees of Freedom= 1.99, Adjusted Goodness of Fit Index= 0.868, Root Mean Square Residual= 0.052

Limitations in Data Collection

Clearly, the major limitation in the collection of this data is the self-selection of study participants. Another limitation is the length of the survey. Clearly, completing 57 pages of survey material may have presented a burden for some participants compounding the self-selection bias. However, participants were advised that they should take breaks whenever they felt fatigue, and that it was acceptable to complete different sections of the survey on different days.

RESULTS

Table 2 displays score means and standard deviations of the variables described above. The mean score for limitation due to secondary conditions was 33.28, with a SD of 19.35. The mean rating for overall health was 1.31 out of a possible 3.00 (SD= 0.83). Overall independence had a mean rating of 1.61 out of a possible 3.00 (SD= 0.98), while the mean score for the Health Promoting Lifestyle: Exercise Sub-scale was 9.2 out of a possible 15, with a standard deviation of 3.30. The SOC scale had a mean of 133.03 (SD=26.03). The mean of the Hope inventory was 23.5 (SD=4.60) while the mean for the Satisfaction with Life inventory was 18.96 (SD=6.58). Finally, the mean for the CES-D was 16.05 (SD=11.5).

Description of Patterns of Activity

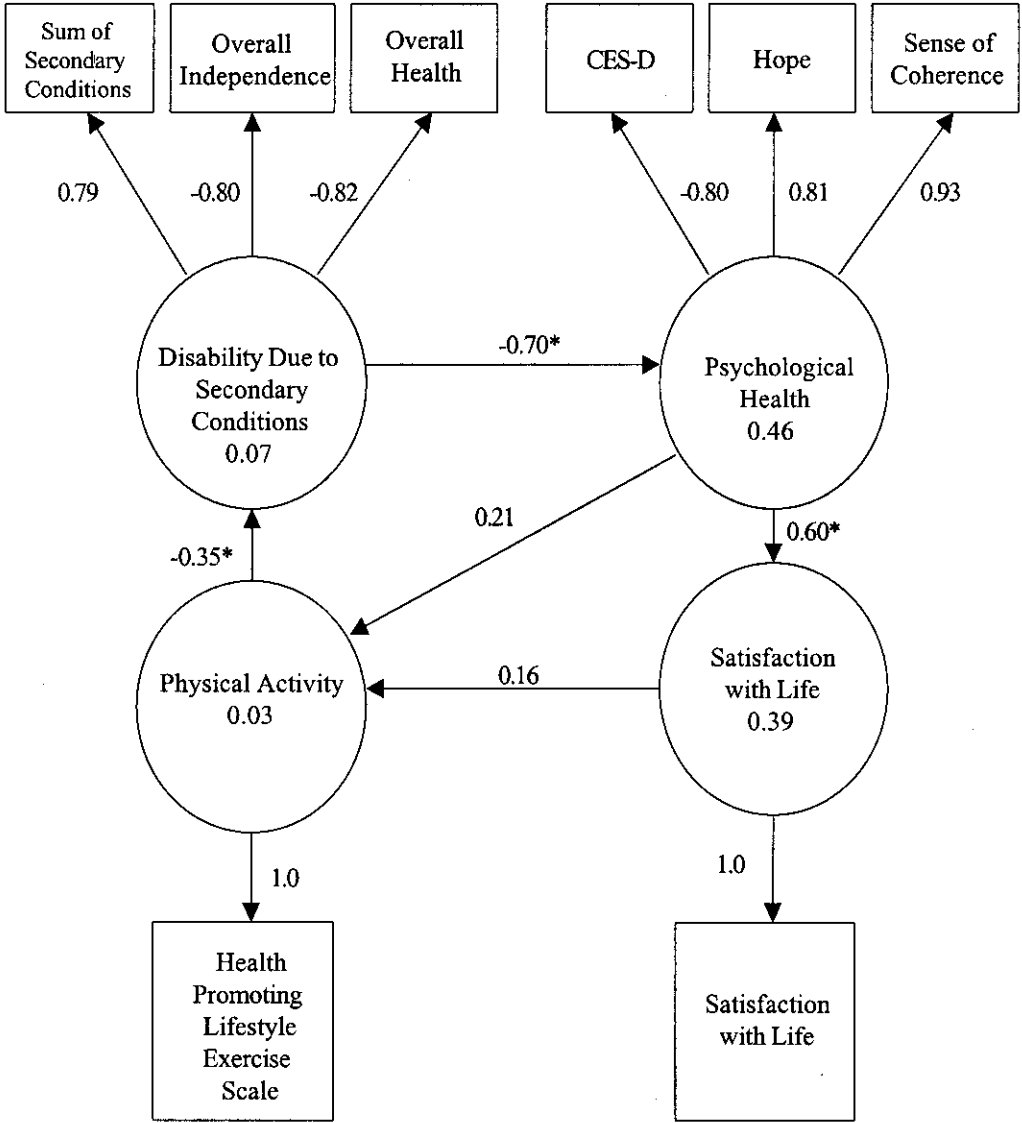
Sixty-one participants (51%) reported not engaging in any physical activity that would “increase your heart or breathing rate” while 32 (27%) participants reported exercising between one and three days per week and 22 (18%) said they exercised four or more days per week. Of the 54 participants that did

report some physical activity, only 33 reported exercising for 20 minutes or more per session. In other words, only 28% of the participants in this study exercised in accordance with the guidelines established by the American College of Sports Medicine (1990). As a comparison, the 1985 National Health Interview Survey (Caspersen, Christensen, & Pollard, 1986) indicates that 25% of men and 30% of women in the general population report that they do not participate in any activity. In addition, only approximately 30% of the general population are active on a regular enough basis to achieve weight control, cardiovascular, and other health benefit (Bouchard, Shephard, & Stephens, 1994).

In order to examine each the relationships between Physical Activity (as measured by the Health Promoting Lifestyles: Exercise Sub-scale) and the other variables, the data were further analyzed using path analysis. Path analysis is a statistical technique used to analyze multiple variables, some of which are latent or unobserved. Causality in a path model is assumed to indicate that a change in the variable at the tail of the arrow will result in a change in the variable at the head of the arrow, all else being equal (Loehlin, 1987). The path coefficients, which are standardized beta weights, are presented in Figure 1. The latent variable Psychological Health is measured by SOC, Hope, and the CES-D scales. The latent variable, Disability Due to Secondary Conditions is measured by Overall Health, Overall Independence, and the Sum of Secondary Conditions. Satisfaction with Life is measured by a single manifest variable, the Satisfaction with Life Scale. Physical activity is measured by a single manifest variable as well, the Health Promoting Lifestyle: Exercise Sub-scale.

The proportion of variance in Physical Activity explained by the model is a disappointing 0.01. The proportion of variance in

Figure 2. Physical Activity as Related to Psychological Health and Satisfaction with Life (Model B)



N=119, Chi-squared with 17 Degrees of Freedom=33.96 (P<0.05), Chi-squared: Degrees of Freedom= 1.79, Adjusted Goodness of Fit Index= 0.87, Root Mean Square Residual= 0.042

Satisfaction with Life explained by the model is 0.39. The path coefficient between Psychological Health and Satisfaction with Life is 0.48, $p < 0.05$, indicating a strong predictive relationship. The path coefficient between Disability Due to Secondary Conditions and Satisfaction with Life is -0.19 (NS), indicating a weak, negative relationship. The path coefficient between Satisfaction with Life and Physical Activity is 0.30, $p < 0.05$, indicating a strong, predictive relationship.

While this model is interesting, much of the variance in physical activity remains unexplained. Additionally, this model does not suggest good intervention strategies. In order to examine possible intervention points, Figure 2 displays a recursive model generated using path analysis techniques. A Simplex model was used which defines all latent variables as downstream variables, allowing them to predict each other. The latent variables are measured with the same manifest variables as in the previous model. However, changing the direction of the paths slightly changes the variance accounted in each of the latent variables. Variance accounted for in Psychological Health by the model is 0.46, in Satisfaction with life is 0.39, in Physical Activity is 0.03, and in Disability Due to Secondary Conditions the variance is 0.07.

While not statistically compelling, this model illustrates the interactive nature of the latent variables, and suggests that intervention could occur at any point in the recursive loop. A change in any one of the variables will result in changes in the others. Therefore, changing the level of Physical Activity would affect any of the other variables. In addition, affecting physical activity at any point in time could theoretically affect it at a future point in time.

DISCUSSION

With this study, we have explored several determinants of physical activity, and suggest that psychological health, life satisfaction, and disability due to secondary conditions are factors that may well be influenced by as well as influence physical activity.

In addition, we analyzed a recursive path model which suggests that interventions targeting psychological health, life satisfaction, secondary conditions and/or physical activity may enhance any or all of the other variables. This model indicates that all of these variables are important in affecting overall health, and that each cannot be compartmentalized and changed in isolation. Further, interventions that target all four of these important variables may be the most successful in equipping people to live healthier lives.

Path analysis was chosen as the analytic method because of its capacity to include multiple variables, some of which are unobserved (latent). Path analysis is just one of many multiple-latent-variable models. However, it is unique in its ability to represent causal relationships in the data. In path analysis, cause can be defined as the assumption that a change in the variable at the tail of the arrow will result in a change in the variable at the head of the arrow. For example, in the recursive model presented, change in any variable will result in a change in all of the variables. In path analysis, the notion of completeness in path diagrams should not be taken to mean that the ideal path diagram is one containing as many variables as possible connected by as many arrows as possible (Loehlin, 1987). In fact, the smallest number of variables connected by the smallest number of arrows is the exemplary path model,

providing a way of representing in a clear, straightforward fashion the relationships between the variables. We chose the variables in each of the models with this in mind. Since we were attempting to understand the many dimensions and precursors of physical fitness, we included variables that in our estimation were related. Model A (Figure 1) attempts (somewhat unsuccessfully) to explain the variance in physical activity with the other variables collected with our survey. While not statistically compelling in terms of the variance explained, it supports the analysis described with Model B (Figure 2) because it supports the notion that physical activity is not an end in itself. It should be part of a holistic approach to health that includes physical, psychological, and spiritual dimensions.

Our study suggests the possibility that the presence of secondary conditions is a significant barrier to participation in increased levels of leisure-time physical activity. Although reduced levels of physical activity have been shown to be associated with increased risks of secondary conditions, our data suggest that efforts to address other primary risk factors for secondary conditions, such as the use of assistive technology and regular pressure release routines, may indeed enhance the opportunity for persons with physical disabilities to engage in greater levels of leisure-time physical activity, and thereby take advantage of some of the health-enhancing qualities of this intervention. However, for consumers in rural areas, some important avenues for attaining assistive technology devices as well as helpful and correct exercise information may be lacking. Additionally, it is possible that knowledgeable and appropriate health care providers may not be available in rural areas

to treat secondary conditions when they occur. Therefore, it is important that consumers and health care providers in rural areas be made aware of the health enhancing effects of regular physical activity. This is a public health activity, and would best be addressed by local public health departments.

While it is vitally important to understand the physical effects and benefits of physical activity, it is equally important to understand the precursors to activity behavior (Dubbett, 1992). In other words, it is of the utmost importance to investigate the problem of lack of physical activity and exercise adherence, and to propose and investigate interventions designed to increase these behaviors.

Future research should target holistic approaches that take the entire lifestyle of the individual into consideration. Variables such as perceived quality of life and psychological health should be measured and intervened upon. In addition, more empirically controlled studies should be conducted on person-environmental interactions and their effects on intensity, duration and frequency of physical activity. For persons with disabilities, physiological limitations, compounded with environmental barriers present formidable challenges to regular participation in physical activities. Lack of physical activity for people with disabilities is a major public health problem (Heath & Fentem, 1997). Further investigations should be conducted to determine interventions that would make physical activity more likely more likely for everyone.

ACKNOWLEDGEMENTS

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HEALTH-RELATED QUALITY OF LIFE IN THE 1990S

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ABSTRACT

The 1990s were a period of health reform in Kentucky. While the legislature attempted to rectify problems of health insurance coverage, providers began to treat more people who were likely to be insured through various forms of managed care, and the state initiated a managed care system for Medicaid-eligible persons.

The Kentucky Health Surveys conducted by the University of Kentucky (UK) Survey Research Center contained a battery of questions on health-related quality of life during the five years from 1993 through 1997. Each year approximately 650 adults were surveyed by telephone. This battery of 20 questions, known as the Medical Outcomes Study Short Form-20, or SF-20, allowed tracking of health-related quality of life (QOL) for different sub-groups of Kentuckians. Nationally-recognized researchers developed these measures for use in large-scale health outcome studies. Their reliability and validity have been well-documented, and the SF-20 has been used extensively for national studies of health outcomes (Ware, Sherburne, & Davies, 1992; Stewart, Hayes, & Ware, 1988; Stewart et al., 1989; Wells et al., 1989).

Using the data from the Kentucky Health Surveys, it was found that while the health-related QOL of Kentuckians did not change

from 1993 through 1997, major deficits remained between subgroups of Kentuckians with less access to care.

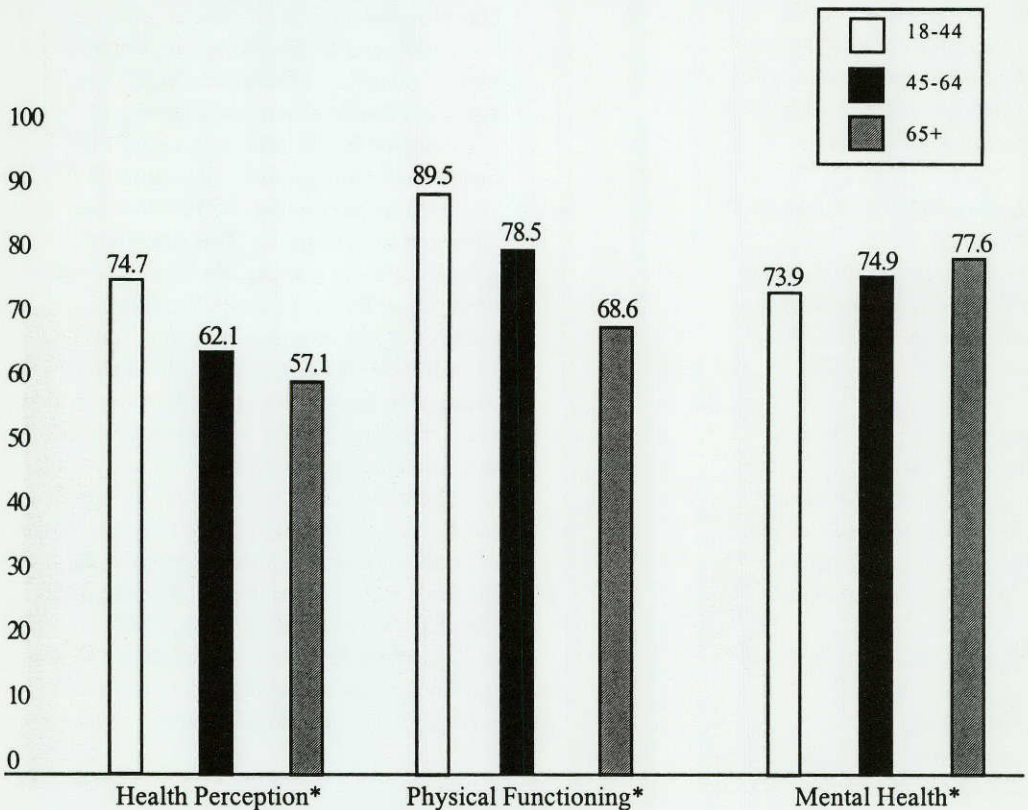
Key words: Appalachian, Kentucky, quality of life, rural, survey. (Texas Journal of Rural Health 2000; 18(4): 61-70)

MEASURES OF HEALTH-RELATED QUALITY OF LIFE

The questions cover a range of health-related quality of life (QOL); three measures

are reported in this health policy brief, including health perception, functioning in physical activities, and mental health. All questions were worded as prescribed by the Medical Outcomes Study, and appropriate algorithms were used to calculate scores. Questions were grouped and scored from 0 to 100, with 0 indicating worst health-related QOL and 100 being best health-related QOL. Scores were analyzed by age for adult respondents, using groupings of younger (18-44); middle age (45-64); and older adults (65+); and for males and females. Comparisons also were made between urban and rural residents,

Figure 1. Health-Related Quality of Life Scores by Age Group, 1993-1997



* Difference between scores based on age group is statistically significant.

and rural Appalachian and rural non-Appalachian residents. Finally, scores were compared by health insurance status. The following is a description of the questions included in each type of QOL score.

Health Perception

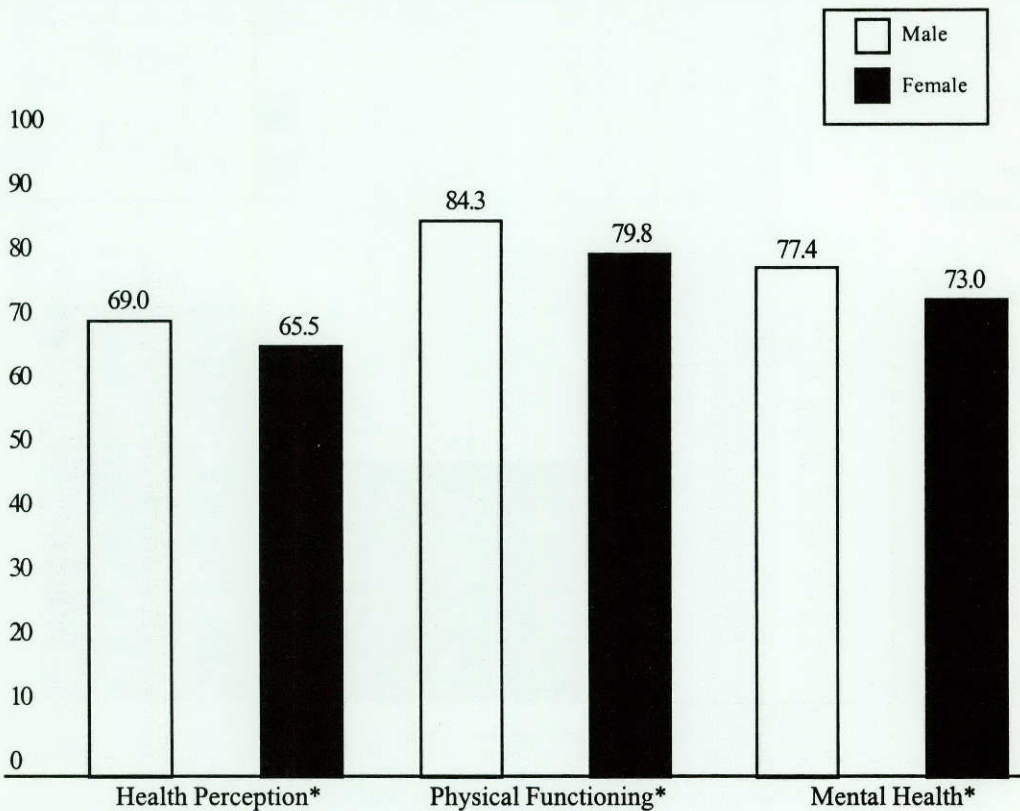
Health Perception questions have been used in many studies, and are considered by national researchers as good predictors of health care use. The health perception score included five questions about health:

1. "I'm as healthy as anybody I know;"
2. "I am somewhat ill;"
3. "I have been feeling bad lately;"
4. "My health is excellent;" and
5. "In general my health is excellent/very good/good/fair/poor."

Physical Function

The Physical Function score was computed using questions asking whether an individual is limited in several physical activities, including:

Figure 2. Health-Related Quality of Life Scores by Sex, 1993-1997



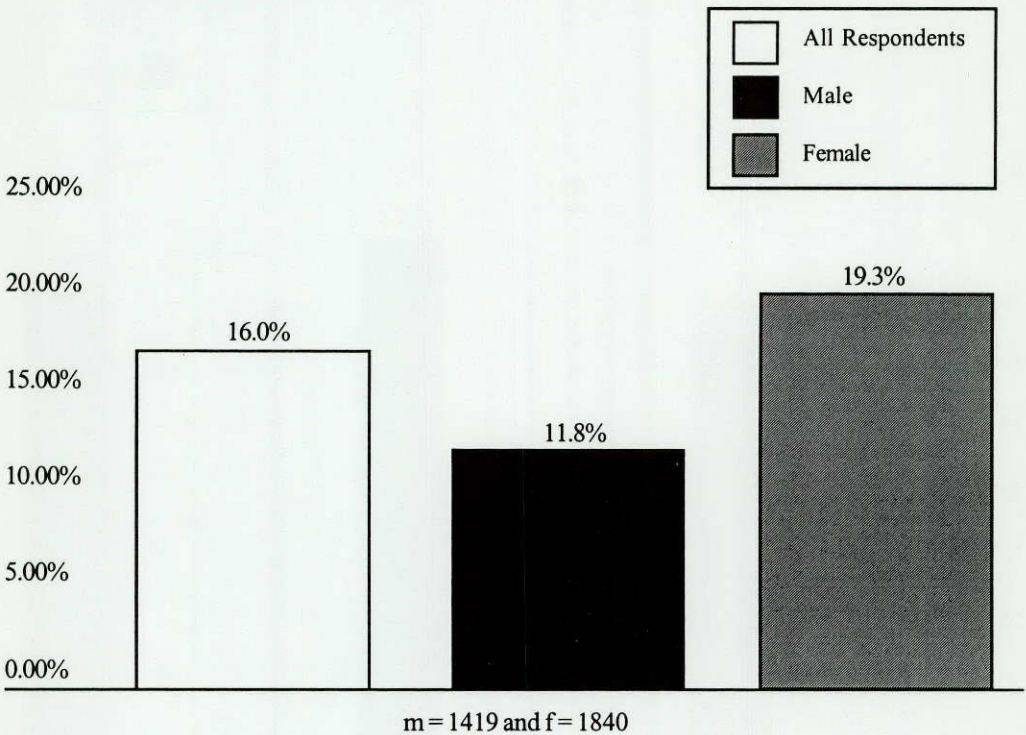
* Difference between scores based on sex is statistically significant.

- Vigorous activity;
 - Moderate activity;
 - Climbing stairs;
 - Bending;
 - Walking; and
 - Dressing.
- Calm;
 - Blue;
 - Downhearted;
 - Happy;
 - In the dumps; or
 - Nervous.

Mental Health

Mental Health was scored from a combination of questions about the amount of time during the last month an individual felt:

Figure 3. Proportion of Respondents with Mental Health at Depression Level,* Kentucky, by Sex, 1993-1997



*Depression is defined as mental score of 52 or below.

Note: "m" denotes the sample size for males; "f" denotes the sample size for females.

HEALTH-RELATED QUALITY OF LIFE
BY AGE AND SEX

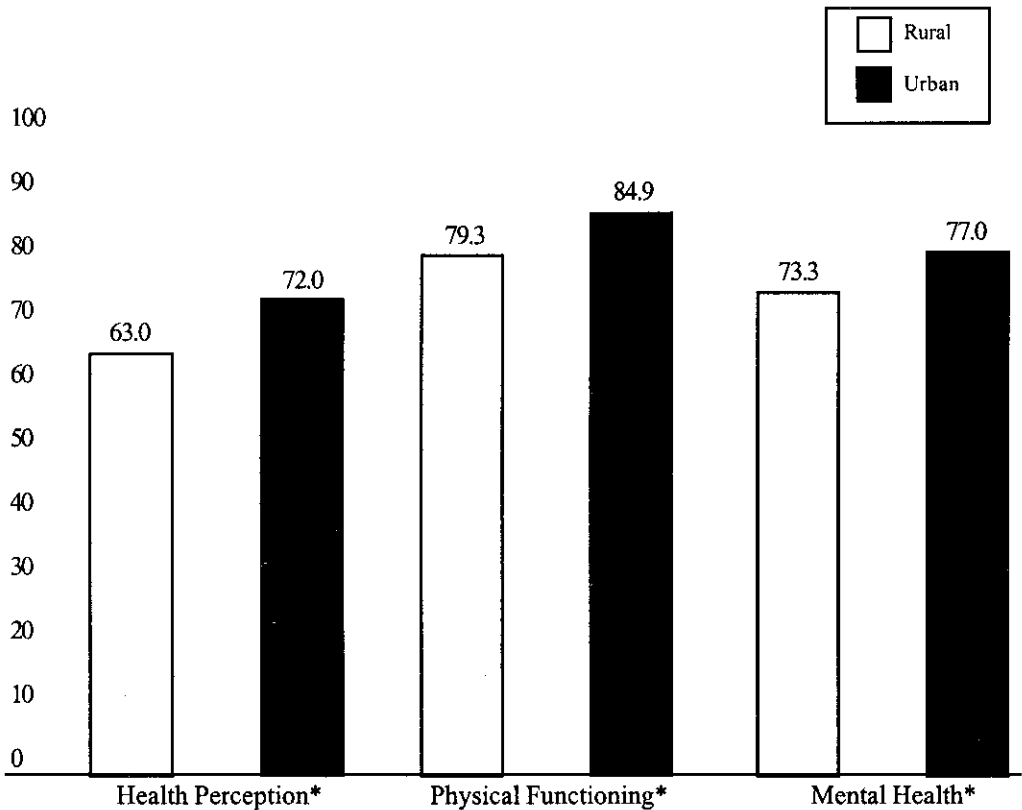
Age

Figure 1 is a display of age differences for each health-related QOL measure, representing about 3,300 respondents in all age groups. The average health perception score for all age groups was 67.5. As expected, Kentuckians' health perception scores fell as age increased from 75 (age 18-44) to 62 (age 45-64) to 57 (age 65+).

Respondents reported an average score of 83.1 on physical function. Younger age groups reported better functioning in physical activities, with a score of 90, 78 for the 45-64 age group, and 69 for those 65 and older.

In contrast to the other two scores, however, mental health scores improved for successively older respondents. Although scores remained very close, they were statistically different, with the youngest respondents scoring 74, the middle age group scoring 75, and those 65 and older scoring 78.

Figure 4. Health-Related Quality of Life Scores by Rural and Urban Residence, 1993-1997



* Difference between scores based on residence status is statistically significant.

Sex

Males and females differed statistically in all measures of health-related QOL, as shown in Figure 2. Females had significantly lower health perception (66 versus 69), physical functioning (80 versus 84), and mental health scores (73 versus 77).

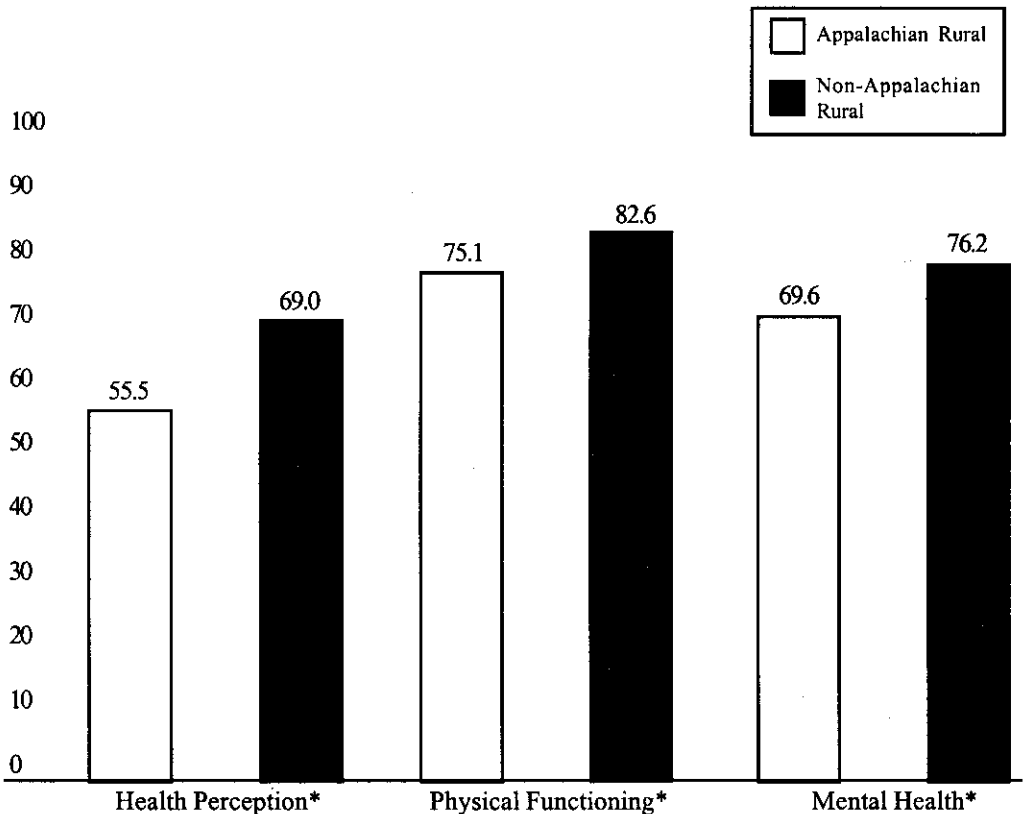
Figure 3 is a chart showing the percent of respondents with depression. "Depression" has been defined as a mental health score of 52 or lower. By this definition, about 20% of the females and 12% of the males had

depression-level scores. The proportion of females with depression-level scores ranged from 20% to 24% across years; the proportion of males with depression scores ranged from 8.5% to 15%.

QUALITY OF LIFE FOR
LOW-ACCESS GROUPS

The health-related quality of life for subgroups of Kentuckians with historically

Figure 5. Health-Related Quality of Life Scores by Appalachian and Non-Appalachian Rural Residence, 1993-1997.



* Difference between scores based on sex is statistically significant.

less access to care was analyzed, including rural, rural Appalachian, and uninsured.

Rural

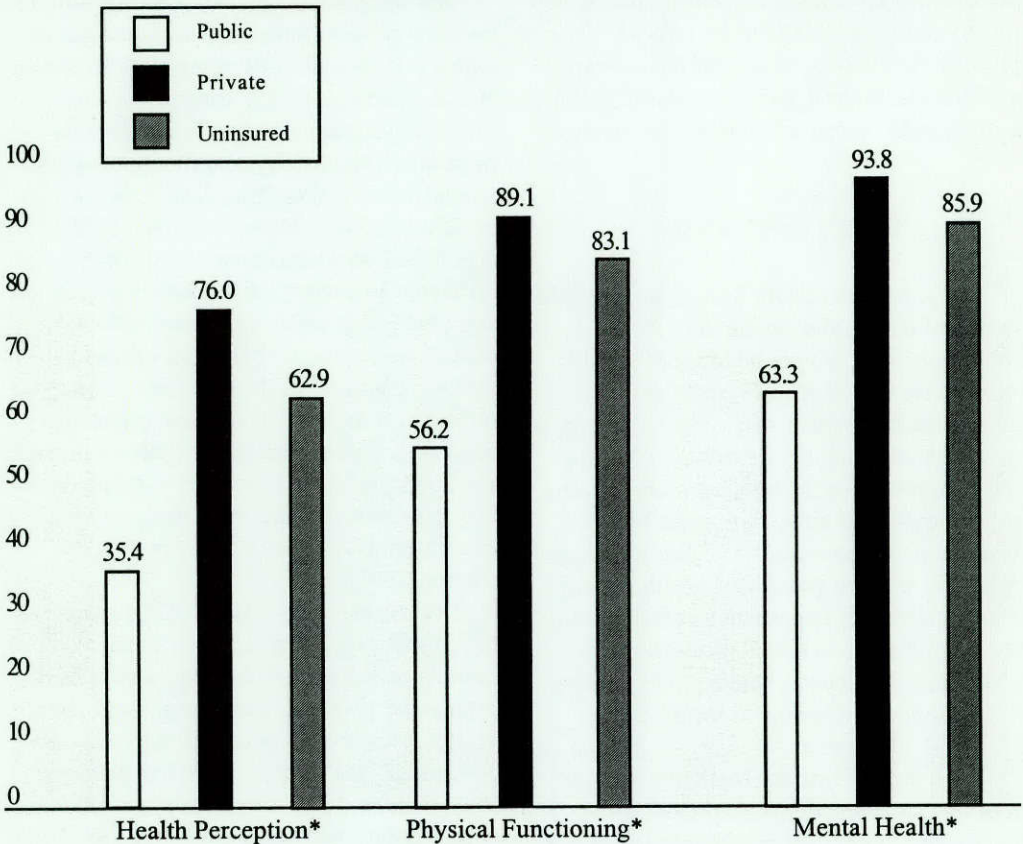
In Figure 4, rural residents had consistently lower health-related QOL scores. Their health perception QOL score was 63, compared to the urban residents' score of 72. Rural residents scored 79 for physical functioning, while urban residents scored about 85. Mental health score for rural

residents was 73; urban residents' score was 77.

Appalachian Rural

Similar findings for rural residents in Appalachian counties are shown in Figure 5 compared to those in non-Appalachian counties. The Appalachian rural residents' health perception score was 55.5 versus 69 for non-Appalachian; physical function score was 75 versus 83; and their mental health score was 70 versus 76.

Figure 6. Health-Related Quality of Life Scores by Insurance Status, Respondents Age 18-64, 1993-1997.



* Difference between scores based on insurance status is statistically significant.

Insurance Status

Analysis of insurance status focused on the working-age population only, including privately insured, publicly insured (predominantly Medicaid recipients), and the uninsured (see Figure 6). As expected, because one must meet health criteria to receive Medicaid, the publicly-insured group consistently had the lowest health-related QOL scores of the three groups. The health perception score of 35 for the publicly insured was about half that of the insured, 79. Their physical functioning score was 56 compared to 89 for the insured, and their mental health score was 63 compared to 94 for the insured.

Next in order of health-related QOL scores belonged to the uninsured. Health perception was 63 compared to 76 for the insured. Their physical functioning score was 83 compared to 89 for the insured, and their mental health score was 86 compared to 94 for the insured.

POLICY IMPLICATIONS

The Kentucky Health Survey was the sole source of continuous health data for the entire state over this period of time. Until recently the University of Kentucky (UK) funded the survey annually. The university is no longer undertaking the survey's funding and administration, so another source of data on the health of Kentuckians must be developed. Reliable and valid data are needed to be able to track health and health system changes and their impact on Kentuckians to provide information for decision-making. Without such a source, health policy making will continue to develop on the basis of anecdotal information.

From these Kentucky Health Surveys, it appears that the health-related QOL of Kentuckians living in the community has

remained constant since 1993. Health perceptions and physical functioning were lower for those in older age groups, as would be expected. The fact that the same survey questions were asked in the same order each year gives additional validity to the data and this conclusion.

Mental health scores improved slightly, but statistically, for older age groups. This may be an artifact of the types of older persons living in their homes who answer the survey, or some other characteristic of the respondents to the Kentucky Health Surveys. More research is needed to understand the relationship between age and the mental health scores of non-institutionalized persons.

Women's health-related QOL was found to be lower across all the measures, consistent with a previous analysis of the 1997 Kentucky Health Survey, in which Kentucky women scored lower than men on the health questions that form the physical functioning and mental health scores (Beaulieu, Johnson, Scutchfield, Smith-Mello, & Lomax, 1998). Age differences may explain some of the difference in women's lower health perception and physical functioning scores, although women do use more of all types of health services than men of the same age. The findings for depression are also reflected in national and state data showing that women are diagnosed more frequently with depression than men, and are more likely to have lower incomes and to be living in poverty (Horton, 1998).

Deficits in health-related QOL continue to be found for rural Kentuckians, especially rural Appalachian Kentuckians, across health perception, physical functioning, and mental health. This is consistent with regional data on Kentuckians' health. National statistics show that the Appalachian region of the United States, with high levels of poverty and

unemployment and low levels of education, continues to be a region of concern for public policy.

Finally, groups containing Medicaid publicly funded and uninsured persons continue to exhibit worse health-related QOL than the insured Kentuckians during the 1990s. Access to care, especially for uninsured persons, continues to be a concern, given their lower scores in health perception, physical functioning, and mental health.

DATA SOURCES

The Kentucky data are drawn from the 1993 to 1997 Kentucky Health Surveys administered by the UK Survey Research Center. Response rates were: 45.2% in 1993; 54.9% in 1994; 55.4% in 1995; 48.4% in 1996; and 50.6% in 1997. The samples included 662 persons in 1993 (margin of error $\pm 3.81\%$), 649 in 1994 (margin of error $\pm 3.85\%$), 654 in 1995 (margin of error $\pm 3.83\%$), 652 in 1996 (margin of error $\pm 3.84\%$), and 677 in 1997 (margin of error $\pm 3.77\%$). All respondents were adults 18 years of age or older. Participants were contacted by telephone using a random-digit dialing method that gave every residential telephone line in Kentucky an equal probability of being called. The surveys were supported by funds from the UK Vice President of Research and Graduate Studies and the Vice Chancellor of the Medical Center for Research and Graduate Studies.

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HEALTH-RELATED QOL IN THE 1990S

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the American Medical Association*, 262,
3298-3302.

ON-LINE NURSING EDUCATION FOR RURAL NURSES: POTHOLES IN THE INFORMATION HIGHWAY

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REVIEW

ABSTRACT

This article describes the relevance of on-line education for nurses in rural settings. Key points addressed are issues in on-line education, overall on-line course development, faculty and student concerns, and successful implementation of on-line courses. While the challenges are great, requiring change and flexibility of both faculty and students, the rewards are also great. These experiences can be helpful to educators planning credit courses or continuing education for rural nurses.

Key words: access, internet, on-line education, rural nurses, web-based learning, web-course development. (Texas Journal of Rural Health 2000; 18(4): 71-79)

INTRODUCTION

In Texas, approximately 20% of the population is classified as rural and two-thirds of the counties in Texas have a shortage of health care professionals. To meet health care needs of this population, hospitals have been established in small rural communities. These hospitals and health agencies have had a difficult time recruiting and retaining nurses

(Center for Rural Health Initiatives, 1999; Ricketts, Johnson-Webb, & Taylor, 1998; Tuli, 2000).

ISSUES IN ON-LINE EDUCATION

On-line education is a way for nurses in rural areas to access both formal and continuing education for professional development. It is ideal for nurses at distant sites who work irregular hours, have multiple responsibilities at home and at work, and who want to study any time at their convenience. Baer and Smith (1999) have identified that distance education techniques have the potential to increase the training of nurses in rural areas. They emphasize that such programs in rural and under-served communities might be particularly valuable in the recruitment and retention of nurses in sparsely populated areas.

Closing the Distance

Traveling to distant sites for continuing education offerings or credit course work often proves difficult or impossible due to travel time and expense, work scheduling problems, or family situations. Additional travel problems exist for nurses who live in rural areas where roads may not be conducive to driving alone at night or in uncertain weather (Huch, 1999). In traditional formats, classes may not be offered when the potential student can take them. Agency-provided continuing education, commonly available during daytime hours, often requires rearrangement of hours for staff on other shifts or overtime for day staff to repeat the offerings.

“Virtual education” is a significant way to overcome many of the problems rural nurses

face in meeting their educational needs at a time when nursing and faculty shortages are predicted and both recruitment and retention of nurses in rural areas are critical. For hospitals or other agencies in rural areas, web-based courses can be important marketing strategies for recruitment and retention. Computer use in on-line courses increases skills and motivation to use computers at work with less employer time needed for orientation to information technology (American Association of Colleges of Nursing White Paper, 2000; Bachman & Panzarine, 1998; Billings, 2000; O’Brien & Renner, 2000; Cravener, 1999; Huch, 1999).

Driving Forces for On-line Education

With the rapidly changing health care knowledge base and delivery systems, nurses must be skilled and knowledgeable in the use of information technology and be able to obtain, process, and communicate the most current information for handling complex clinical problems. Distinction among the nursing educational levels is becoming increasingly important in community practice settings. There is a need for baccalaureate prepared nurses skilled in critical thinking, creative problem solving, communicating across disciplines, and in education of patients and their families, who belong to an increasingly diversified population (American Association of Colleges of Nursing White Paper, 2000; O’Brien & Renner, 2000).

The increased use of advanced practice nurses as primary care providers is expected to improve health care access for under-served populations. This is, in fact, one of the strategies in both state and federal access goals. Nurses already in under-served areas are the most probable group to need Internet education for graduate, advanced practice

degrees (O'Brien & Renner, 2000). Health care facilities have traditionally strongly supported educational programs that facilitate nurses remaining in the rural setting (Leasure, Davis, & Thievon, 2000).

Two significant concerns about distance education are that the special connection that happens between student and teacher in the classroom will be lost and that on-line education will be below standards of in-class education. Billings (2000) reported results from numerous studies of learning outcomes in distance education in nursing. These studies revealed no significant differences in learning outcomes when compared with in-class courses, regardless of the type of technology used.

Students, particularly returning adults, are demanding relevant courses, applicable skills, and value for their time and money. Web-based courses can promote productive use of student time. On-line nursing education for licensed/professional nurses facilitates seamless education for nurses returning for additional formal education. Nurse educators will be challenged to structure learning experiences in an environment of rapidly changing technology for an increasingly diverse student group with differing learning styles and goals, and to prepare these nurses to provide care to an increasingly diverse population (Billings, 2000; Chaffee, 2000; Leasure et al., 2000; Lindeman, 2000).

AVOIDING AND FILLING THE POTHoles

Schools and agencies interested in providing Internet education should be aware of potential potholes in the information super highway. A smooth ride for faculty and students depends on student access to

computers, access to course-appropriate software, and adequate technical support. It is impossible to avoid all of the potholes in the information highway since technical problems are inevitable. The following are some problems and solutions to consider in the development, delivery, and evaluation of on-line courses.

Meeting Student On-line Learning Needs

Computer literacy is a major problem in on-line nursing education. Many students must concurrently learn basic computer skills, appropriate communication skills, and course content as well as juggling work and home responsibilities. On-line courses that include basic instruction in computer usage help students overcome fear of computers and increase technical competency (Billings, 2000; Murdock, Morran, La Coursiere & Scrivener, 2000; O'Brien & Renner, 2000). This can be done through repetition of computer skills used in completing course assignments.

Potholes can occur due to erosion of privacy, professional socialization issues, inappropriate literature searches, and textbook inadequacies. Issues of confidentiality, respect of individual rights, control of personal information, and freedom of speech are of concern with the increase of traffic on the information superhighway. Inclusion of cyber ethics content along with traditional legal/ethical content in on-line nursing education is imperative (Bachman & Panzarine, 1998; American Association of Colleges of Nursing White Paper, 2000). Assignments to address ethical issues can include exploration of the Internet for information on cyber ethics as well as specific ethical dilemmas for nurses as well as written work that requires appropriate, correct citations and recognition and avoidance of plagiarism.

Teaching of content involving nursing professional socialization is perceived as being difficult or impossible to do on-line. Development of professional roles, values, and practices can be addressed through written assignments that are designed to reflect certain attitudes and behavior and that require critical thinking, as well as assignments involve on-site practice with faculty or preceptors.

Inappropriate literature searches can be a problem, with students depending more on a variety of web site summary information rather than doing CINAHL and MEDLINE literature searches. Internet students must evaluate web based health care information to determine if it is accurate and valid (Hodson-Carlton & Dorer, 1999; Pravikoff, 2000). On-line content emphasis must be placed on the criteria for professional literature searches. Faculty in Internet courses need to be sure to require at least one complete journal article and research article citation for course papers (Leasure et al., 2000). A decrease in the reading of research articles can result in the lack of research-based decision-making in practice (Pravikoff, 2000; Huch, 1999).

A comprehensive on-line textbook that has professional transition content and addresses trouble-shooting for computer/Internet problems has not been available.

Textbook inadequacies require that faculty spend a significant amount of time developing supplemental course material and finding and maintaining current Web links. This could be a significant roadblock for agencies with limited staff and resources.

Classes using the Internet as a teaching medium differ from traditional classes, with a shift in emphasis from lecturing to guidance and facilitation. Principles of adult learning are inherent in on-line courses. Learner indepen-

dence is fostered through participation in course activities, as students are expected to be self-directed and to draw from their life experiences. Scheduling is flexible enough to allow students to make decisions about their best use of the course material and to work at their own pace, a major advantage of on-line education. These benefits are increasingly crucial for larger numbers of students who juggle responsibilities in the workplace and home and for those at distant sites (Huch, 1999; Langford & Hardin, 1999; Bachman & Panzarine, 1998).

Internet classes enhance opportunities for student-faculty communication and connectedness and provide opportunity for discussion that might not occur in the classroom. In traditional classrooms, interactions most frequently occur with the more verbal students. In Internet classes, all students will have ongoing communication with the faculty (Billings, 2000).

The greatest need on-line students have, other than computer competency, is self-direction and motivation to complete the course work. This is less of a problem with nurses, as adult learners who are motivated by increased self-esteem from accomplishments and recognition of the usefulness of Internet learning in real life (O'Brien & Renner, 2000; Huch, 1999; Soon, Sook, Jung, & Im, 2000). Working with students to encourage their growth through this educational process may be a very rough road for some and smooth access to others.

Distance learning courses demand more student involvement, independence and responsibility than traditional in-class courses. Students have to write more in on-line courses than in on-campus courses in which the teacher is present when the learning opportunity is presented. An

advantage is that the on-line student has increased opportunities to become more proficient in articulating thoughts in writing (Huch, 1999).

Students who access on-line course work from home must have, in addition to their computer and Internet server, the software required to be able to successfully complete course assignments and send them in a format faculty can access. Internet servers can be a problem, especially in rural communities due to costs, availability, and reliability.

Student Orientation to Web-based Learning

An orientation to web-based learning is essential. It can take place both as an Internet tutorial and as hands-on experience in a computer lab. An introductory on-campus orientation session is strongly encouraged. It has the advantage of in-person introductions and faculty support for initial computer course work. This orientation should emphasize student responsibilities for successful completion of an on-line course (Billings, 2000; Huch, 1999). Recommended orientation topics are:

- Student computer and Internet access requirements;
- Software compatibility required to successfully complete course assignments in a format that faculty can access;
- Access to on-campus or distant site computer labs and on-line library access;
- Purchase of books and course materials on-line;
- Syllabus overview with course requirements and procedures;
- Use of e-mail and software;

- Downloading course information;
- Explanation of suggested symbols to communicate gestures and emotions; and
- Communication and writing skills.

Students with limited computer literacy may need additional help in conducting on-line searches and accessing and using databases.

When students perform an assignment in the orientation session, it initiates active involvement in course work. This can be accomplished by creating an original word document, saving it, creating an e-mail message to faculty, attaching the message, and sending it (Bachman & Panzarine, 1998; Billings, 2000).

Faculty Concerns in Web-course Development and Maintenance

Much of what faculty know about designing and developing instructional materials for classroom teaching needs to be re-evaluated for Internet teaching (O'Brien & Renner, 2000). Workshops and one-on-one consultation, with hands-on experience provided by web consultants, is essential. Some assistance in creating web sites, web teaching strategies, class discussions, and effective handling of e-mail communication may be found on the web at sites such as www.Blackboard.com, www.academia.com, and others.

Traditional formats for syllabi, lecture notes, and audio-visuials require significant modification. Content must be presented in manageable segments to facilitate learner engagement in the process. Initial on-line educational offerings may rely on lecture

notes, Power Point presentations and e-mail discussions to ensure that all students have the ability to access course content and complete the assignments. Based on student feedback, faculty should avoid long Power Point presentations. Having separate lecture notes rather than putting notes on the Power Point slides make it easier for students to download content. Faculty should be aware that some home computers do not have the capacity to download extensive material. More elaborate teaching tools such as audio lectures, CD course material, video clips, and discussion forums may be added later. Guest presenters may be invited to participate on-line in PowerPoint and/or notes presentations, short videos, or in discussion forums.

Case studies and scenarios with critical thinking, compare/contrast, and opinion questions that require application of knowledge to real life situations are effective teaching strategies for adult learners (O'Brien & Renner, 2000). These activities help prepare for the realities of practice and can be presented as both individual written assignments and discussion forum topics. Activities such as the teaching/learning assignments, which required the student to develop a teaching project for an actual identified population in his/her practice area, received favorable comments from the students (Billings, 2000).

Students may be assigned to work in small groups of three to four to complete some assignments. Research supports that sharing of knowledge and backgrounds in student group work is a more powerful learning tool for this kind of assignment than having students work alone. Because of the isolating effects of studying alone, nurses in rural areas may want to form on-line study groups (Billings, 2000; Mills, 2000; O'Brien & Renner, 2000).

On-line students interact more with faculty by e-mail and discussion forums than in-classroom students. On-line written communication tends to be more formal and less spontaneous and may seem more impersonal than face-to-face interactions (Cravener, 1999). Parker, Parker, and Hough (1997) propose humanizing distance education. On-line presentations and e-mail communication may be made more informal by using less technical language, more expressions such as "You're going in the right direction" and substituting symbols for gestures and emotions, for example, smile [J].

Exams may be on-line or proctored at prearranged locations (Huch, 1999).

Critical thinking essay questions, based on case studies or nursing practice situations are appropriate for adult learners. Students are on the honor system when taking these tests at home or office and these tests are scored manually (Mills, 2000).

Teaching a web-based course requires more faculty time than traditional classroom instruction. It is more time consuming and labor intensive than classroom teaching and it is more difficult to keep up with individual student progress on-line (Bachman & Panzarine, 1998; Billings, 2000; Cravener, 1999). The additional written work assigned on-line greatly increases faculty time needed to grade course assignments. Faculty must also plan time to post course material, monitor discussion forums and respond to e-mails. Written messages to clarify information or ask questions are more time consuming than classroom responses to students. Students often need more feedback than faculty can give in a timely manner. Team teaching and teaching assistants could help alleviate delays and lack of feedback (Soon et al, 2000). Working with on-line students to encourage their educational growth can be a daunting challenge for the instructor.

Success in Internet Courses

Success in Internet courses depends more on student personality and learner autonomy than on the instructor. Shifting from teacher-centered to learner-centered practices requires surrendering more control to the learner and may be a problem for some faculty. Nurse educators must learn to exchange notions of control and predictability for an enjoyment of change and ambiguity (Billings, 2000; Cravener, 1999; Lindeman, 2000). Cultural differences in students at distant sites may mean additional challenges in providing relevant instructional examples and analogies. Through thoughtful course design that is mindful of diverse backgrounds, interests, and learning practices of students, Internet courses increase learning options and become more attractive to adult learners from various culture and geographical locations. This also meets the demand for more culturally competent providers and greater representation of minority groups in nursing (Cravener, 1999).

One benefit of on-line instruction that is not often mentioned is more individualized attention for the learner. Web-based courses allow individual student progression, and the opportunity to slow down and review material is especially helpful for learners with English as a second language or for the faster learner to complete work more quickly (Cravener, 1999; Huch, 1999).

Adequate infrastructure and technical support must be in place for a successful web-based course. Technical support for course development includes establishing a password system, access restrictions (if desired), and software programs for continued development and maintenance. Faculty will need to resolve difficulties students are having with the mechanics of the course rather than delaying while waiting for web master assistance.

EVALUATION

Evaluation of a web-based course should be ongoing, with the course coordinator taking notes for course review of problem areas noted, difficulties encountered, student comments, and solutions to problems in a new web-based offering. Revising as needed and trying new interactive strategies is a part of an on-going process of course development and delivery. On-line students need to know that their constructive evaluative comments are expected and valued. Students in an on-line transition course reported that feelings of being overwhelmed by and frustrated with computers decreased after taking the Internet course and that computer skills gained in the course transferred to other computer use situations. Students were also aware that the faculty were learning new techniques and changing their usual teaching style, which provided a clear model of changing behavior and adjusting to the demands of the changing health workplace.

Students who are successful are usually self-directed, independent learners who are able to seek assistance and network with faculty and other students (Billings, 2000; O'Brien & Renner, 2000). Students who fairly quickly mastered rudimentary computer skills necessary to complete learning activities were generally satisfied with the Internet course. These students had the ability to maintain their own pace and expressed satisfaction with the freedom that the course allowed them in their lives and expressed interest in taking additional web-based courses.

Those students who did not communicate regularly with faculty and did not complete assigned learning activities in a timely manner expressed dissatisfaction with the course. Students who delayed completing unit assignments often did not take sufficient time for abstract thinking, with poor results on their written work.

CONCLUSION

In the rapidly changing health care scene, nurses' knowledge of the relevancy and use of the information highway is crucial. Internet courses are changing ways of teaching and learning, of accessing, using and disseminating knowledge, and of accomplishing nursing skills of effective communication, creative and critical thinking, and time management. Through the use of information technology, nursing faculty and practitioners in health care agencies can work together to promote nursing scholarship and learning of skills to assure success in the workplace by providing continuing education and educational mobility for nurses in diverse geographical locations.

On-line course work is a way for rural nurses to travel the information highway and avoid the potholes. Part of the adventure is taking the detours and finding a different perspective on the same scenery, especially in rural areas.

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