Quality of Life, Chronic Pain, and Issues for Healthcare Professionals in Rural Communities

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Abstract

The purpose of this pilot study was to examine differences that existed in the perception of individuals with chronic pain concerning quality of life in two groups: (1) a group who had an intervention for chronic pain (2) and a group who had not had any intervention. No existing literature was found that compared any difference in perceptions of quality of life in individuals who had an intervention for chronic pain and those who had not had an intervention for chronic pain. Thirty-six individuals' scores on the Ferrans and Power's Quality of Life Index were analyzed. Data analysis revealed that both groups in this pilot study perceived their quality of life as decreased, but no statistically significant differences were found in the perception of either group (t = -1.65, p= .108). Although not statistically significant in this sample, the group (n=16) who had received an intervention program reported less perceived quality of life. Issues of concern for healthcare professionals in rural communities and ideas for further research are presented.

Keywords: chronic pain, quality of life, rural healthcare

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There has been considerable attention paid to understanding the medical, economic, and social effects of chronic pain over the last several years. The complexity of the nature of pain has led to treatment programs that target both the psychological and physical aspects of pain. Alternative treatment models that have incorporated behavioral-oriented programs, multi-disciplinary pain management programs, and pharmacological and non-pharmacological interventions have been used (Tyre, Walworth, & Tyre, 1994). The purpose of this paper is to present the results of a pilot study on perception of quality of life in individuals with chronic pain, as well as to raise awareness of issues connected to chronic pain and to encourage future research into this area.

Problem Significance

Chronic pain has affected over 10% of the population worldwide (Tota-Faucette, Gil, Williams, Keefe, & Goli, 1993; Williams et al. 1993). Clear-cut pathology often cannot be documented (Tota-Faucette et al. 1993). Frequently, causes of pain cannot be fully understood, and this lack of understanding and treatment of chronic pain has continued to be a challenge for healthcare professionals and rehabilitation counselors (Ahmedzai, 1995). Many sufferers of chronic pain have developed a disabled state characterized by persistent pain that outlasts the normal duration of healing or resolution post injury (Williams et al. 1993). Approximately 1% of individuals with chronic pain are severely disabled, and have difficulty in coping with the pain and associated psychological and social problems (Beck, 1985; Jensen & Karoly, 1991; Jenson, Turner, & Romano, 1994).

Definitions of success or failure of treatment have often reflected the agenda and relative values of individuals conducting the evaluation, and not the individual with chronic pain. Individuals with pain may define success or failure of the treatment quite differently from program evaluators. An individual may define a substantial reduction in pain severity as success, but a third-party payment source (one type of program evaluation) may choose to focus on whether the individual has returned to gainful employment (Turk, Rudy, & Sorking, 1993). Parallels may be drawn when individuals with pain are encouraged only to focus on pain reduction and not take into account any improvements in functional ability, reduction in medication, and mood improvements that have led to greater harmony and satisfaction within the family. No one measure of efficacy is better than another. Each measure must be reviewed within the appropriate context.

Purpose

The purpose of this pilot study was to examine differences that exist in the perception of individuals who had received an intervention for chronic pain and those who not in reporting had perceived levels of quality of life. The aim of this pilot study was not to evaluate the type of intervention or the efficacy of the intervention in the treatment of chronic pain.

Literature Review

A review of the literature on chronic pain treatment revealed that studies have concentrated on certain types of treatment protocols, return-to-work criteria, and evaluation of outpatient and inpatient programs (Cutler, Fishbain, Lu, Rosomoff, & Rosomoff, 1994; Cutler, Fishbain, Rosomoff et al. 1994; Fishbain et al. 1993; Jenson & Karoly, 1991; Keefe, Gill, & Rose, 1986; Sweet, 1995; Turk et al. Tyre et al. 1994; Williams et al. 1993). No existing literature was found that compared any differences in perception of quality of life between individuals beginning or completing a pain treatment program. The following literature review addressed characteristics of rural communities, characteristics of individuals residing in rural settings, profiles of individuals with chronic pain, treatment of chronic pain, and quality of life.

Characteristics of Rural Communities

Unique to rural communities has been their combination of structural characteristics. Structural characteristics have included: (1) population size, (2) population composition, (3) human and economic resources, (4) employment patterns, (5) density norms, and (6) cultural norms (Lopez-De Fede, 1998; Luloff, 1990). It must be remembered that there is no singular rural America. Such an assumption would omit important segments of Americans. Despite a history of dependence on farming and differences in family size, lifestyle and politics; rural communities have changed dramatically over the recent years. Changes have occurred due to the influence of increased access to transportation and communication systems, move of rural residents to urban centers, and the move away from an economy based in farming (Lopez-De Fede, 1998).

General disadvantages of living in rural communities have often been centered on lack of access to or isolation from more urban resources. Recently, this isolation has been easier to overcome by improved transportation. Communities located on or served by high-quality highway systems have better access to healthcare and other services not easily found within the rural community itself (Lopez-De Fede, 1998; Ricketts, JohnsonWebb, & Randolph, 1999). In addition to differences in rural communities based on the fact of being less populated, the rural population is not evenly distributed across the United States.

In 1990 the census reported that the Southern region of the United States had the largest proportion of the rural population (29.1%) (Bureau of the Census, 1994). As reported by

Ricketts et al. (1999), individuals living in the southern region of the United States are 79.2% non-white (predominately black), 28.9% between the ages of 25-44, 14.6% greater than the age 65, with a median age of 33.8 years, 10.6% female head of households, and with 68.4% children living with two parents. Incomes generally in rural communities have been lower, with decreasing dependence on farming incomes. Other occupations that have been seen in rural communities (e.g. agriculture, forestry and fishing) have also decreased in recent years (Ricketts et al. 1999; Lopez-De Fede, 1998). A growth of the rural underclass and an increasing population of individuals with disabilities residing in rural communities has also affected employment statistics in these areas.

Characteristics of Individuals Residing in Rural Settings

Lack of employment opportunities in rural areas has specifically affected young adults and non-minorities, thus resulting in the growth of what has been termed the rural "underclass". These individuals have been described (Lopez-De Fede, 1998; Ricketts et al. 1999) as high school dropouts, on public assistance, unmarried mothers, or males who have suffered long-term unemployment. Twenty eight percent of individuals classed as "underclass" have been reported to live in rural communities as compared 3.4% in cities and 1.1% in suburbs (Lopez-De Fede, 1998). Disability has also been reported to be associated with lower incomes and increased chances of living in poverty (Smart & Smart, 1997). According to Lopez-De Fede (1998), a higher rate of limitation in activities has existed for individuals residing in rural communities as compared to urban communities. Rural areas have also reported higher rates of chronic disease, infant mortality, and injuries related to occupational hazards. Almost two-thirds of this rural "underclass" is reported (Lopez-De Fede, 1998) to be concentrated in the South.

An important policy issue has been and continues to be equitable access to healthcare particularly those considered to be vulnerable populations. Individuals in rural communities have been considered a vulnerable population in terms of access to healthcare due to poorly developed and fragile structures for development of care in isolated areas, chronic illness and disability, socioeconomic disparities, and physical barriers. These physical barriers have included: (1) distance from high quality care, (2) transportation issues, and or (3) lack of resources for acute, chronic and rehabilitative services (Schur & Franco, 1999). Mortality associated with trauma, specifically motor vehicle accidents and gun-related accidents has also been reported to be higher (Chen, B., Maio, R. R., Green, P. E., & Burney, R. E., 1995; Ricketts et al. 1999).

Individuals with Chronic Pain

Typical profiles of individuals with chronic pain are similar in all environments, rural or urban. Individuals with chronic pain suffer from unremitting pain, overuse of narcotic analgesics, reactive depression, and frequent use of and dependence on the healthcare system (Tyre et al. 1994). Based on this type of image of a typical individual with chronic pain, literature revealed that a uniform myth existed that presented individuals with chronic pain as homogeneous (Tyre et al. 1994). This myth has often caused psychological factors that vary across individuals to be ignored. A strong relationship between psychological factors, pain, and disability was found to exist. Improvement in coping strategies after outpatient pain management treatment has been reported to be associated with reductions in pain ratings, and psychological disability (Gil, Williams, Keefe, & Beckham, 1990; Tota-Faucette et al. 1993).

Generally, neck and back injuries have reportedly accounted for an appreciable proportion of individuals with workers compensation injuries in rural occupations such as logging and other physically demanding occupations (Smith, de Hoop, Marx, & Pine, 1999). Psychosocial aspects of rehabilitation from these types of injury have greatly affected successful rehabilitation. A major documented factor in the success of treatment (as measured by return to work criteria) has been compensation related pain and non-compensation related pain with soft tissue injuries. This relationship has continued to underscore the strong involvement of non-medical issues in the onset and outcomes of complaints of a chronic nature. Research has and needs to continue to address the nonphysical aspects of chronic pain (Smith, 1998; Smith et al. 1999).

Treatment of Chronic Pain

Pain has been described as complex in nature, and interdisciplinary treatment programs have been developed to target psychological as well as physical aspects of pain. These programs have included traditional treatments consisting of pharmacological treatment and physical therapy and, recently, programs have added marital and family therapy, cognitive-behavioral strategies, assertiveness and communication skills training, biofeedback and relaxation training, and operant conditioning techniques. Comprehensive approaches have gained popularity and are believed to be more effective than the traditional approaches (Cutler, Fishbain, Lu et al. 1994; Cutler, Fishbain, Rosomoff et al. 1994; Fishbain et al. 1993; Reinking, Tempkin, & Tempkin, 1995; Tota-Faucette et al. 1993; Tyre et al. 1994). Despite changes and increasing awareness of variables in chronic pain treatment, there has been and still is a great variety of individual responsiveness to treatment.

Improvement in coping strategies after treatment has been associated with reduction in pain ratings, and psychological disability in pain patients (Keefe et al. 1986; Spinhoven & Linssen, 1991; Turner & Clancy, 1986). Conflict and control issues within the family have been reported as related to increased distress and pain ratings (Gil, Keefe, Crisson, & Van Dalfsen, 1987; Flor, Turk, & Rudy, 1987; Payne, & Norfleet, 1986). Tota-Faucette et al. (1993) studied predictors of admission to a pain management program. Family environments and patients' cognitive status on admission were reported (Tota-Faucette et al. 1993) as significant predictors of variability in outcomes. Patients with families who were poorly organized, emphasized control and dependence, and had a high amount of conflict with little commitment to and support for each other were at risk for a poorer response to treatment. The second group found to be at risk for less than optimal outcomes included patients who engaged in negative and irrational thinking, and made little effort to control pain through active cognitive and behavioral strategies. Complete initial assessment of individuals' psychological factors could lead to strategies that target individuals at risk with different treatment modalities.

Quality of Life

Pain has traditionally been considered a physical symptom, but it has also been a sensation which can cause a decrease in an individual’s general well-being, overwhelm the individual, and interact with many aspects of daily living. Pain has tended to cross cultural boundaries, particularly when connected with cancer (Ahmedzai, 1995; Ferrell, 1995). The concepts of pain and quality of life (QOL) emerged as early as 1982 as central themes in hospice and palliative care in the care of individuals with cancer (Flanagan, 1982; Guyatt, Feeny, & Patrick, 1993; Moinpour, 1994; Sorkness, 1990). Literature between 1992 and 1996 revealed more than 4,000 health-related articles focused on quality of life (King et al. 1997). Medical and psychological interventions used to treat pain can also impact QOL. The social and spiritual aspects of pain have been the least understood (Padilla, Ferrell, Grant, & Rhiner, 1990).

Quality of life, as previously applied in the medical literature, may not have had a distinctive or unique meaning. Researchers have appeared to substitute the term quality of life for various terms intended to describe an individual’s health. Gill and Feinstein (1994) defined quality of life as the reflection of the way that patients' perceive and react to their health status and to nonmedical aspects of their lives. Perceptions of and reactions to quality of life were reported (Gill & Feinstein, 1994) when individuals were asked directly to rate their overall quality of life and the importance of individual items affecting their quality of life. Gill and Feinstein (1994) stated that overall quality of life included not only health-related factors but also non-health-related elements, such as jobs, family, friends, and life circumstances.

Ferrans (1990) and Ferrell (1995) described models with similar domains that reflect quality of life. Both researchers have included physical, psychological, spiritual, and social domains that were reported as influenced by pain and, therefore, affected perception of quality of life. Ferrans' (1990) domains of family and socioeconomic status were reflected in Ferrell's (1995) domain of social well-being. These researchers (Ferrans, 1990; Ferrell, 1995) have taken into account the value of perceptions, particularly in individuals dealing with cancer pain. Literature (Ferrans, 1990; Ferrell, 1995; Ferrell, Rhiner, & Ferrell, 1993; Padilla et al. 1990) strongly suggested that accurate assessment of individuals' perceptions will assist human service professionals in the development of interventions designed to improve quality of life.

Methodology

Methodology used for this pilot study was focused to uncover differences that exist in individuals' perceptions of quality of life. It was designed to reflect individuals’ perception of quality of life who had received an intervention for chronic pain and those who had not received an intervention. Since the definitions of success or failure of treatment varied according to the literature (Fishbain et al. 1993; Jensen et al. 1994; Tota-Faucette et al. 1993; Turk et al. 1993; Tyre et al. 1994), this pilot study made no attempt to evaluate or discuss success or failure of the treatment program. Additionally, for this particular pilot study, no attempt was made to match individuals' severity of pain ratings to their perception of quality of life.

Study Design

The approach for this pilot study was non-experimental, causal-comparative (Gall, Borg & Gall, 1996). This method of analyzing data was aimed at the discovery of differences that existed between perceptions of quality of life between two groups of individuals with chronic pain. A major advantage of a causal-comparative research design was that it allowed the researchers to study cause and effect relationships under conditions where experimental manipulation was impossible. This method allowed the researchers to study the effects of something that was present with one group and not present in another group (Gall et al. 1996). In this particular study, the effects of a pain management treatment program on the perception of quality of life were of interest to the researchers, not the specific intervention program. The major difficulty with this type of design was that determining causal patterns with any degree of certainty was difficult and findings needed to be interpreted with caution (Gall et al. 1996). Additionally, researchers needed to be constantly aware that data could lead to strong inferences about the perceptions of individuals receiving an intervention for chronic pain. Recommendations could result that were not valid. In this particular pilot study, the results statistically support that there was no difference in perception of quality of life, despite an intervention for chronic pain.

Sample

This pilot study's sample consisted of two groups of individuals (n=36), residing in the southeastern area of the United States, who were measured on their perception of quality of life. One group of individuals (n=16) had received an intervention for chronic pain, in this case, enrollment and completion, as document by program staff of a multidisciplinary chronic pain management program. A second group of individuals (n=20) consisted of those who had not received an intervention related to chronic pain, but who had been initially screened and met the criteria for referral to the pain management program. The sample was a convenience sample of individuals with varied diagnosis or causes of chronic pain. This sample was recruited from a multidisciplinary comprehensive pain management program that included pharmacological management, physical therapy, psychological therapy, and family counseling, operating in the southeastern United States. Each individual was administered the Quality of Life Index (Ferrans & Powers, 1985) by the principal investigator or a trained assistant. With the sample size being small, no attempt was made to match diagnosis, gender, or age. Results, with a small sample size, must be interpreted carefully, and not generalized to any other groups but the sample (Gall et al. 1996).

This sample had a mean duration of pain of five years, a mean age of 50 (range 16 to 77 years), and was primarily female. Sources of pain varied and included: first, a predominance of back pain; secondly, neck, shoulder and leg pain; thirdly, pain from burns; and least prevalent, pain in feet and abdomen. Only 2% of this sample was employed, retirement was an issue for a small number of the participants, with the remainder unemployed due to self-reported inability to work as a result of chronic pain. No mention was made by any study participants of any pending litigation issues. Sample reflected many of the characteristics of individuals living in rural communities.

Instrument

The Quality of Life Index (QLI) was developed to measure the quality of life of healthy individuals, as well as those experiencing an illness. QLI has been reported to measure satisfaction with, and perceived importance of, various domains of life. These domains included healthcare, marriage, children, job, leisure, personal faith, and life goals. It consisted of 64 self-report items in a 6-point Likert like scale format. Subscales addressed health and functioning, socioeconomic factors, psychological/spiritual factors, and family factors (Ferrans, 1990; Ferrans & Powers, 1985; Oleson, 1990).

Quality of life scores were determined by an adjustment of satisfaction responses for the importance responses. This adjustment reflected not only satisfaction but the value of a domain for that particular individual. Rationale for this adjustment was based on the idea that people who are highly satisfied with important areas of their life perceive a higher quality of life than those who are very dissatisfied with important aspects of their life (Ferrans & Powers, 1985).

Ferrans and Powers (1985) reported that the content validity of the QLI was derived from the subjective judgment that the items were representative of the content area. It was supported by the literature review and reports of individuals who completed the instrument. Construct validity was assessed using the known groups technique. Standard deviations were reported for pain, depression, and coping with stress. Criterion-related validity was reported as a correlation with the assessment of life satisfaction at 0.80. Two week test-retest correlations were reported at 0.87 with 0.81 at a one month test-retest correlation. Cronbach's alphas were calculated to assess internal consistency reliability. These were 0.95 for the entire instrument, 0.90 for the health and functioning subscale, 0.84 for the socioeconomic subscale, 0.93 for the psychological/spiritual subscale, and 0.66 for the family subscale.

Hypothesis

The research question centered around perceptions. The hypothesis was: Individuals who had not received an intervention for chronic pain would report less perceived quality of life than those who had received an intervention for chronic pain. The rationale for this directional hypothesis was based in the literature on comprehensive approaches to pain management being the more effective treatment protocol (Cutler, Fishbain, Lu et al. 1994; Cutler, Fishbain, Rosomoff et al. 1994; Fishbain et al. 1993, Reinking et al. 1995; Tota-Faucette et al. 1993; Tyre et al. 1994).

Results

Since the sample size was small, no attempt was made in the data analysis to separate the participants into any groups except those who had received an intervention and those who had not.

Data was analyzed using an independent t-Test. Power of this t-Test result rested in the fact that a directional hypothesis was used with the level of significance set at 0.05. With very large samples, the potential exists for misusing the directional hypothesis; a tenable hypothesis can mistakenly be rejected because of the influence of the sample size (Glass & Hopkins, 1984). In this pilot study, it was expected that the directional hypothesis would increase the usefulness of the results.

Thirty-six individuals' scores on the Ferrans and Powers' (1985) Quality of Life Index were analyzed using inferential statistics. Data analysis revealed that both groups perceived their quality of life as decreased. The mean overall score for the nonintervention group (n = 20) was

18.9 and the mean score for the intervention (n = 16) was 15.6 (t = -1.65, p =.108). The hypothesis was rejected. Based on the fact that the sample size was small, it makes it difficult to draw conclusions based on these results. It does appear, although not statistically significant, that individuals measured after an intervention for chronic pain perceived their quality of life (mean score = 15.6) as less than those individuals measured who had not had an intervention for chronic pain (mean score =18.9).

Reliability analysis using an alpha scale was done for this sample's (n=36) total QLI score and the subscale scores. The reliability alpha score of 0.962 was obtained for the total QLI, .900 for the health and functioning subscale, 0.917 for the socioeconomic subscale, 0.891 for the psychological/spiritual subscale, and 0.717 for the family subscale. These are comparable to those Cronbach alphas reported by Ferrans and Powers (1985) which were: (1) 0.95 for the entire instrument, (2) 0.90 for the health and functioning subscale, (3) 0.84 for the socioeconomic subscale, (4) 0.93 for the psychological/spiritual subscale, and (5) 0.66 for the family subscale.

Discussion

Questions that arise as a result of this study are varied. First, does an intervention, such as enrollment in a pain management program, actually decrease perceived quality of life immediately and over time? Secondly, could this phenomena result from the fact that the individuals who have had an intervention for chronic pain, and in many cases dealt with chronic pain for a longer period of time, given up hope of the pain resolving or abating? Finally, could the higher perception of quality of life in the group who had not experienced an intervention for chronic pain be due to hopes of complete or partial recovery? Do individuals, who have not yet experienced a chronic pain intervention, believe pain will disappear? Examples of additional questions are: (1) What part do coping strategies play in decreased perception of pain and increased perception of being able to cope? (2) Does the perception of increased ability to cope increase perceived quality to life? (3) Does severity of pain ratings correlate with perceived quality of life? 4) Are there gender differences in perceived quality of life in individuals with chronic pain?

Findings of this pilot study support questions posed by Jensen et al. (1994). These questions focused on the concepts that some pain coping strategies, which are frequently encouraged in interdisciplinary pain treatment programs, may not have a direct short-term impact on perceived improvement in chronic pain. Longer term follow-up may be needed to perceive the benefits of improved coping with chronic pain. These results may reflect that particular ways of coping may be important to some individuals with particular demographic characteristics but not to others. Gender differences in perceived quality of life have been documented in a study with a large sample of individuals with cancer (n=254 females, n=222 males) (Dibble, Padilla, Dodd, & Miaskowski, 1998). As a result of a factor analysis procedure, all cancer-specific items were dropped, and the results suggested that the essential dimensions of QOL are not different for those with or without a diagnosis of cancer (Dibble et al. 1998). Factor analysis did suggest that women and men perceived specific items on the Multidimensional Quality of Life Scale,Cancer Version (MQLS-CA) differently and that measurement of quality of life may require gender specific questions to accurately address dimensions of QOL in females and males (Dibble et al. 1998).

This pilot research did not attempt to uncover specific individual characteristics, demographic data, or specific group patterns of response based on the small sample size. Weaknesses of this pilot study lie in its lack of generalizability and the comparison of one group immediately preceding the intervention and one group immediately following completion of the intervention. It would be useful to re-measure both groups of individuals three months following completion of a pain management intervention program. In this pilot study that was attempted, but since the principal investigator had geographically relocated, data needed to be completed by mailing the instrument. The return rate (12%) after two mailings was not sufficient for data analysis.

Issues for Healthcare Professionals in Rural Communities

Barriers to healthcare and rehabilitation have been identified for individuals residing in rural communities. These barriers included poverty, under insurance or lack of health insurance, shortages of health-care providers, inconvenient health services locations and service hours, prolonged waiting times, lack of public transportation, and communication difficulties for those who cannot speak, or write English (Center for Disease Control [CDC], 1998; Meert & Thomas, 1998; Sample & Darragh 1998; Schur & Franco, 1999). Women residing in rural areas reported less access to resources, a need to travel for rehabilitative services, and a need to take charge of coordinating their care. This lack of coordination slowed down their rehabilitation, due to the fact that they had to find information about services and rights by relying on friends, family and word of mouth (Sample & Darragh, 1998), causing gaps in services and use of the individual's energy. This expenditure of energy for self-coordination of services has the potential to increase recovery time and use energy that could be used in other activities (e.g. child care, activities of daily living, and employment).

It has been estimated that a minimum of 125 million Americans are affected by acute or chronic pain annually (Kubecka, Simon, & Boettcher, 1996). Literature (Benesh, Szigeti, Ferraro, & Gullicks, 1997; Jones, 1999; Kubecka et al. 1996) has reported that healthcare professionals' lack of knowledge about pain and its treatment may result in a major barrier to achieving comfort for individuals experience pain. Fears of healthcare professionals, individuals, and their families concerning addiction, tolerance and respiratory depression related to the use of narcotics has been reported as an additional barrier to effective pain management and may result in pain being severely undertreated or untreated (Kubecka et al. 1996; Jones, 1999). Additionally, cost of medication in rural settings is reported as a concern and barrier to effective pain management (Dalton, Carlson, Mann, Blau, & Bernard, 1998; Meert & Thomas, 1998; Sample & Darragh, 1998).

Brockopp, Warden, Colclough, and Brockopp (1996) have cited a general agreement that lack of adequate education, fear of narcotic addiction, incomplete or inadequate assessment of pain, and attitudes towards pain often result in practices that are not conducive to good pain management practices. Rural subjects in this study reported being more concerned than urban subjects about taking drugs for pain, taking care of themselves should they experience pain, and being hospitalized for testing should they report their pain. On the other side of the coin these same rural subjects reported that they could handle pain better as they got older (Brockopp et al. 1996). One particular study (Benesh et al. 1997) reported that the traditional visual analog scale may not be the most appropriate scale to utilize with rural dwelling elders, particularly women. This study indicated that nurses more often than other healthcare providers underestimated individuals' pain intensity. Almost 47.5% of the subjects (n=40, gender female, mean age of 80.5) indicated that the Pain Thermometer was the easiest and most accurate reflection of their pain intensity. Healthcare professionals may need to consider different assessment tools with different populations.

Healthcare professionals have and continue to view counseling as an essential part of the services provided to individuals, both in private and public agencies. Professionals in the field of rehabilitation have a need to understand individuals with chronic pain and need to apply counseling strategies to this population of individuals. Chronic pain has both somatic and psychological dimensions and, by the time that much of the symptomology associated with chronic pain becomes evident and interferes with daily living, it has become interwoven into the secondary gains associated with illness. Secondary gains include such things as reduced work, reduced social and family obligations, and often monetary payments (Beck, 1985; Cutler, Fishbain, Lu et al. 1994; Cutler, Fishbain, Rosomoff et al. 1994; Fishbain et al. 1993; Gil et al. 1990; Jensen et al. 1994).

Healthcare professionals in the field of rehabilitation need to be aware that research indicates that the immediate pain reactions within days of the onset of pain or an associated injury may provide clues to those individuals who will continue to have pain problems post-healing. This certainly speaks to the need for a quick accurate assessment and diagnosis, often difficult in urban areas and very difficult in rural areas. At three months post-injury or development of pain, fairly accurate predictions can be made of individuals who are unlikely to have continuing pain problems or become disabled. This three-month assessment could certainly impact the focus of therapeutic and financial resources (Philips, Grant, Berkowitz, 1991). Pre-injury factors include: surrounding job satisfaction, pre-pain coping skills, history of psychiatric problems, and litigation involved with the injury play important roles in persistence of chronic pain (Philips et al. 1991).

One goal of rehabilitation is to enable individuals with disabilities to work and be useful and independent members of the family and community. Consequently, who but a rehabilitation healthcare professional is in a better position to provide support for individuals from the beginning of their treatment in a chronic pain treatment program to their discharge. Healthcare professionals functioning in a case management role will help to bridge the gap between rehabilitation and return to work and/or a useful active lifestyle (Sweet, 1995). Vocational healthcare professionals are invaluable in this process.

Management of chronic pain and counseling by healthcare professionals are appropriate strategies in helping these individuals make career decisions, learn to cope with and adjust to chronic pain, and manage the outcomes of treatment in a pain management program. Importance of an individual's belief in his or her ability to maintain some personal control of life and pain cannot be over stressed. Strategies that are used to enhance well-being and activity levels are taught in multidisciplinary and/or interdisciplinary pain treatment programs but need constant reinforcement by healthcare professionals as individuals access these services for return to work assistance (Jensen et al. 1994). Individuals with a sense that they can control their pain are more likely to initiate and persist in the use of adaptive coping strategies (Beck, 1985; Jensen & Karoly, 1991; Jensen et al. 1994). Healthcare professionals can teach and reinforce these strategies based on their knowledge of counseling theories, such as cognitive behavioral theory, Bandura's social learning theory, and reality therapy (Beck, 1985; Jensen & Karoly, 1991; Jensen et al. 1994; Covington, 1991).

Healthcare professionals working in the field of rehabilitation can continue to encourage individuals to maintain coping strategies targeted in multidisciplinary and/or interdisciplinary pain treatment programs. This can be done by remembering that not all treatments have a direct impact on short-term improvement (Jensen et al. 1994). In relation to this research study, this may partially explain the results. It may take a longer period of time and involvement in aerobic exercise, stretching exercise, keeping busy, muscle strengthening exercise, relaxation and decreases in resting or withdrawing from activity when pain is present or has increased, and decreases in opioid medications before perception of quality of life moves to a level higher than pre-treatment measurements.

Specific Issues for Nurses in Rural Communities

Advance Practice Nurses (APN), specifically Clinical Nurse Specialists (CNS) and Nurse Practitioners (NP), have been and will continue to assume integral roles in the delivery of healthcare services in rural communities. APNs are able to provide primary healthcare services to a wide variety of clients within the constraints often present in rural communities. These primary care providers often require a lower level of capital support and frequently prefer the autonomy this practice environment allows (Baer & Smith, 1999). Educational programs located in or targeted to rural areas foster interdisciplinary, collaborative practice that increases access and quality of care available to individuals in rural communities.

Evidence-based practice is an approach to clinical practice that the advance practice nurses are familiar with and skilled in utilizing. This approach is useful in rural areas when it is used to define a clinical problem, identify the needed information, conduct a search on appropriate literature, critical appraise the literature, and identify the applicable clinical data. Finally the application of this approach to the client could drastically improve the healthcare of individuals residing in rural communities with chronic illnesses (Stotts, 1999).

Evolving roles of the APN in case management will help prevent the fragmentation of healthcare that often occurs when an individual must travel outside his or her community for specialty care. Advance practice nurses functioning in the role of case manager will coordinate medical management, social service programs, family and individual counseling, and vocational consultation. Nurses in rural communities will be able to utilize their skills at assessment of both objective findings and subjective complaints. Nurses practicing with advanced educational preparation in rural setting will be able to intervene early in the rehabilitative process by the use or ergonomic principles and devices. This type of intervention may not only relieve the onset of chronic pain but additionally relieve secondary injury. Nurses advocating the early return to normal work duties instead of restricted duties will also facilitate return to work, thus lessening long term disability (Smith, 1998; Smith et al. 1999).

Ideas for Future Research

Ideas for further research certainly were generated by this research project and the review of literature. Implications for future research include correlations of what happens at predetermined intervals (e. g., three months) during an intervention for chronic pain and correlations of differences in perceptions that exist between individuals of different gender, culture, and educational level. Additionally, questions could be asked about pain severity ratings, different medical diagnoses, and health, in general, in correlation with perception of quality of life. Areas that might be suspected as playing a large part in perceptions of quality of life and investigated in future studies are family and spousal support. Finally, qualitative studies could be designed as a passageway to what could be rich data about individuals with chronic pain and their stories of life, medical care, and relationships.

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