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The Prevalence and Treatment of Pain Among Rural Medicaid Beneficiaries with Disabilities

Pain has an enormous impact on the lives of many people with disabilities. Recent research suggests that nearly 80% of people whose primary disability is not a pain disorder are still limited by pain as a secondary condition. As many as half of those people report that their pain is ongoing, intractable and limiting (Ehde, Jensen, Engel, Turner, Hoffman & Cardenas, 2003). Our research suggests strong associations between an individual's pain and his or her quality of life, depression and the number of hours worked.

Background:

Our research on the difficulties of recruiting people with disabilities into both health education seminars and physical activity programs identified pain as their greatest barrier to participation. Our latest longitudinal study examined the experience of people with disabilities who have pain and their perceptions of 14 different pain treatments.

Methods:

Working with Montana and Maine state Medicaid departments, we identified all Medicaid beneficiaries in one rural county of each state (N=6852). We sent a letter to each beneficiary describing our study's eligibility criteria (18-65 years old, with a permanent mobility impairment) and enclosed a postage-paid return postcard with census-type disability questions. From these responses we identified 469 individuals who agreed to complete a survey in exchange for a \$10 stipend. We received 268 usable surveys (60.9% response rate). Two years later, we collected a second questionnaire from 144 members of this cohort (30.1%); 114 respondents completed both surveys.

We collected basic demographic information, plus responses on several instruments. On the *Pain Disability Index* (Tait, Chibnall, Krause, 1990) respondents rate the degree to which pain limits them in each of seven life areas. Our respondents had a range of 0 to 70, with a mean of 36.5 (SD = 14.86). On Radloff's *Centers for Epidemiological Studies of Depression Scale* (CES-D, 1977), our respondents ranged from 0 to 60, with a mean of 20.69 (SD =12.48). The *Health Related Quality of Life Scale* (Hadorn & Ubersax, 1995) has two items (suffering and activity limitation); our respondents ranged from 1.7 to 9.5, with a mean of 5.34 (SD = 1.99). Finally, on the *Pain Treatment Index* respondents indicate whether they have used a pain treatment and if so, they rate its effects (0=no relief; 10=complete relief).

Results:

On Survey One, 208 (75.1%) individuals reported having ongoing pain (tingling, burning, aching). On Survey Two, 108 (79.6%) individuals reported having pain. Table 1 shows the change in pain status from the first to the second surveys. Chi Square analysis indicates a statistically significant change in pain status between surveys (Chi Square = 32.17, $p < .000$). Of the 79 people reporting

pain in Survey One who also responded to Survey Two, 8.9 % no longer reported pain. Forty percent of those who did not report pain in Survey 1 did report having pain in Survey 2. Overall, these results suggest a 6.3% increase in the proportion of the sample reporting pain as a secondary condition over a two-year period.

Table 1: Change in chronic pain status over 2 years

	No Pain, Survey 2	Pain Present, Survey 2	
No Pain, Survey 1	18	12	30
Pain Present, Survey 1	7	72	79
Total	25	84	109

We did not see an expected statistically significant increase in limitation from pain between Survey 1 and Survey 2 (paired $t = -.397$, ns). Still, we examined the longitudinal data for predictors of change in pain limitation using multiple regression to predict the residual variance after regressing Survey 1 pain limitation scores from Survey 2 scores. To predict change in pain limitation from Survey 1 to Survey 2, we used Survey 1 variables including “depression”, “nights of poor sleep”, “days feeling energetic” and “overall quality of life”. In this analysis, Survey 1 pain limitation scores accounted for 12.3% of the variance in Survey 2 scores. However, none of our hypothesized Survey 1 independent variables predicted change in pain limitation scores. Next, we examined Survey 2 independent variables: depression, nights of poor sleep, days feeling energetic and overall quality of life. In this analysis, depression entered the equation and accounted for an additional 6.5% of the variance in pain limitation change from Survey 1 to Survey 2. As people reported more pain, they also reported more depression.

These rural respondents had tried an average of 5.94 ($SD = 2.72$) types of pain treatment to alleviate their ongoing, limiting pain. We asked them to rate the efficacy of various pain treatments on a ten-point scale; the results are presented in Table 2.

It’s interesting that surgery, the treatment with the highest efficacy rating, also has the highest standard deviation. 37% of our respondents rated surgery as 8 or higher (of a possible 10) for relieving pain. 21% rated it as 2 or lower for pain relief. Massage therapy was rated surprisingly high at pain relief – approximately equal to prescription medication and surgery.

Table 2: Pain treatments, ordered by efficacy ratings

Treatments	N	Mean	SD
Surgery	42	5.55	3.25
Prescription Drugs	100	4.99	2.20
Massage	41	4.56	2.23
Stress Management	48	3.81	2.35
Pacing Activities	67	3.76	1.88
Physical Therapy	46	3.74	1.98
Home-based exercise	72	3.67	1.78
Non-prescription drugs	79	3.62	2.29
Herbal remedies	28	3.57	2.41
Lifting/moving techniques	52	3.52	1.90
Exercise at a facility	10	3.00	2.21
Acupuncture	3	1.33	.577

Finally, in order to understand why rural residents might choose a particular treatment, we tried using logistic regression to predict whether individuals would choose a type of treatment. For each treatment used by at least 25% of the respondents, we conducted logistic regression for both Survey 1 and Survey 2, using depression, pain limitation and quality of life as independent variables. Depression did not predict any treatment choice and is not included in Table 3.

Table 3: Logistic Regression Predicting Treatment Choice from Survey 2

Predictors, Survey 1				
	Pain Limitation		Quality of Life	
Treatment	Odds	95%	Odds	95%
Stress Management	ns	ns	.709	.541, .930
Physical Therapy	ns	ns	.729	.559, .952
Home Exercises	ns	ns	.740	.550, .998
Surgery	1.044	1.011, 1.078	ns	ns
Home Modification (e.g. new bed)	ns		.640	.482, .850
Predictors, Survey 2				
	Pain Limitation		Quality of Life	
Treatment	Odds	95% CI	Odds	95% CI
Pacing Activities	1.041	1.006, 1.078	ns	
Stress Management	ns		.715	.546, .937
Physical Therapy	ns		.752	.578, .977
Home exercises	ns		.632	.456, .875
Massage	1.035	1.000, 1.071	ns	

Conclusion:

Results of this study of rural/remote Medicaid beneficiaries with disabilities are consistent with previous results of more urban samples of people with disabilities. The rates of pain across types of disability are also similar to rates reported in studies of specific disabilities.

Results of our examination of pain treatments used by rural Medicaid recipients are consistent with outpatient studies of primary care pain treatment – most of our survey respondents with pain use prescription pain medication. However, respondents also use several other treatments. This highlights the limits of traditional pain treatments and the natural inclination of individuals in rural areas to adopt a multi-disciplinary approach to pain management.

“Quality of Life” was the best predictor of whether individuals would try additional types of treatment. Table 3 shows that, for each unit increase on the *Health Related Quality of Life Scale*, there was a 30% reduction in the likelihood that an individual would try a different treatment. It seems that a

person's perceived quality of life, rather than limitation from pain or depression, determines whether he or she tries additional treatments.

These results illustrate that, for rural Medicaid recipients with ongoing pain, poor quality of life is the catalyst for trying various pain relief strategies. However, these people usually don't find complete relief, and viable interdisciplinary treatments that can be delivered in the rural context must be developed to address their needs.

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