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**Predictors Of Extended Chiropractic Care For Pain
Tino Villani, DC, Steven Delaronde, MPH,MSW**

Overview

Aim of investigation: Patients often seek chiropractic care for relief of pain complaints. This study explores the predictors of continued requests for patient care by chiropractors beyond a 30-day treatment period.

Methods: Chiropractors affiliated with a health plan in the northeastern United States submitted care plan requests for treating patients with pain complaints. A total of 3,772 chiropractors submitted 152,867 care requests over a 3-year period. Ninety-two percent of these requests (n=140,532) were partially or completely approved. Information related to the patient was collected by the chiropractor, including a visual pain analogue score, functional index, work capacity, surgical history, previous care episodes, patient age, and patient gender. A logistic regression model was used to predict differences between patients for whom care was requested beyond 30 days and those who did not require further care.

Results: Care requests beyond 30 days were associated with both patient-related and provider-related factors. Patient-related predictors included spine pain radiating to the head, elbow, knee or beyond (p<.001), symptom duration greater than 3 weeks (p<.001), and patient age (p<.001). Symptom duration prior to treatment was the most significant predictor of continued care. Compared to patients with symptom duration of less than 3 weeks, those with 3-6 weeks of prior symptoms were 36% more likely to have care requested beyond 30 days, and patients with symptoms lasting more than 6 weeks were 80% more likely to have care requested by their chiropractor beyond 30 days. Provider-related factors include the state where the provider practices (p<.001), previous care provided to the patient (p<.001), and the approval status of the provider's original request (p<.001). The year that the care was provided was also a significant predictor (p<.001) of extended care.

Conclusions: Symptom duration presented at an initial chiropractic visit, as well as pain radiation and patient age, are significant patient-related predictors of care requests beyond 30 days of treatment.

Methods

A logistic regression model was used to explain chiropractic care episodes that lasted >30 days for patients visiting a chiropractor during a 3-year period:

- Patient age
- Spine pain radiation
- Symptom duration prior to treatment
- Patient status (new or established)
- Year of treatment
- Provider location
- Care request approval status

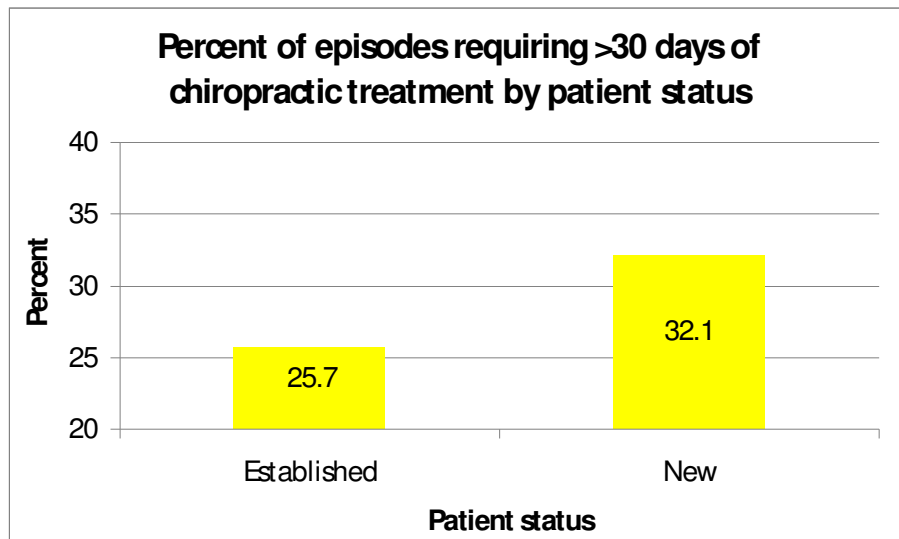
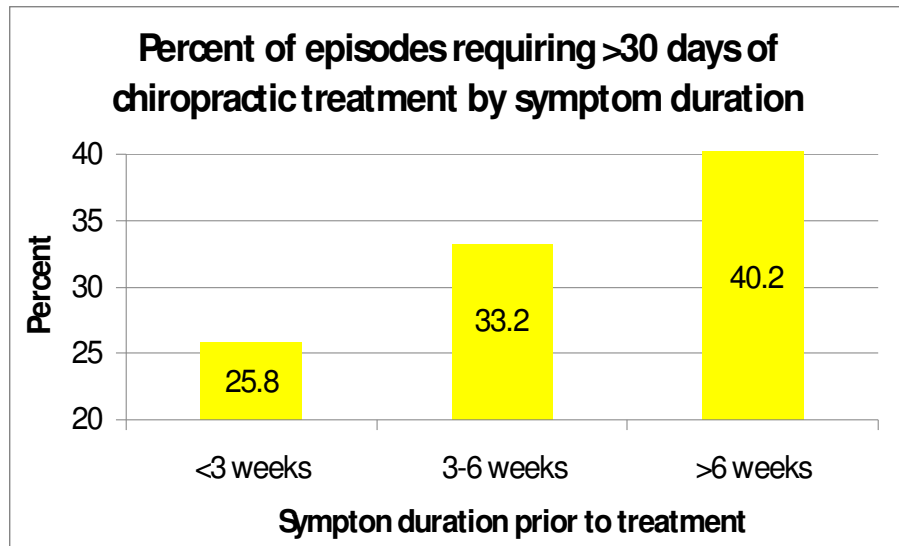
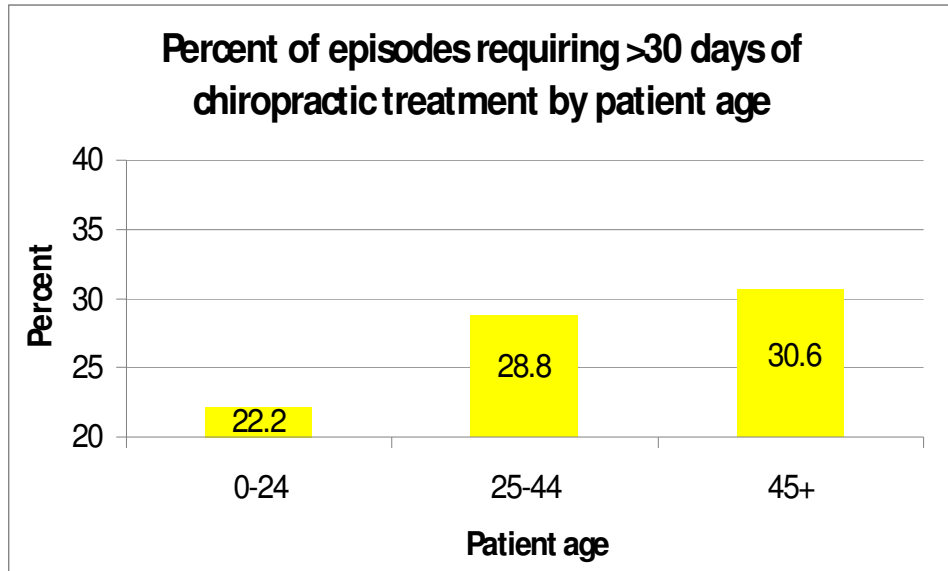
Covariates excluded from the model due to poor fit or correlation with other variables included patient gender, numeric pain rating score, functional status, work capacity, previous care episodes, and previous spinal surgery.

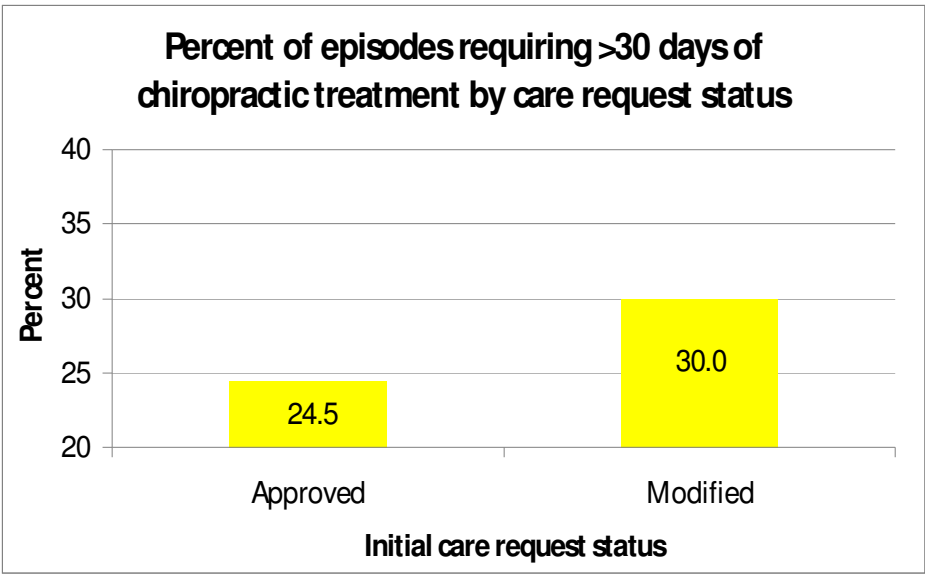
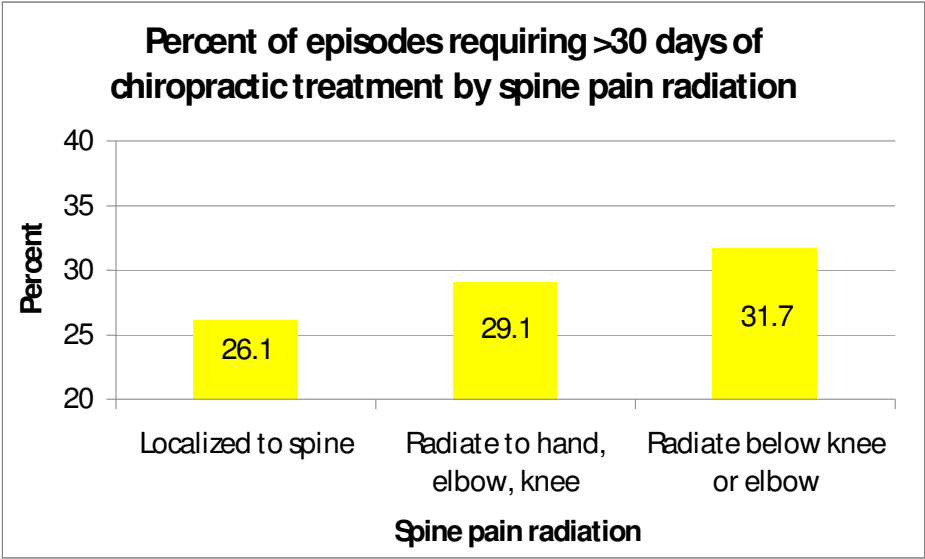
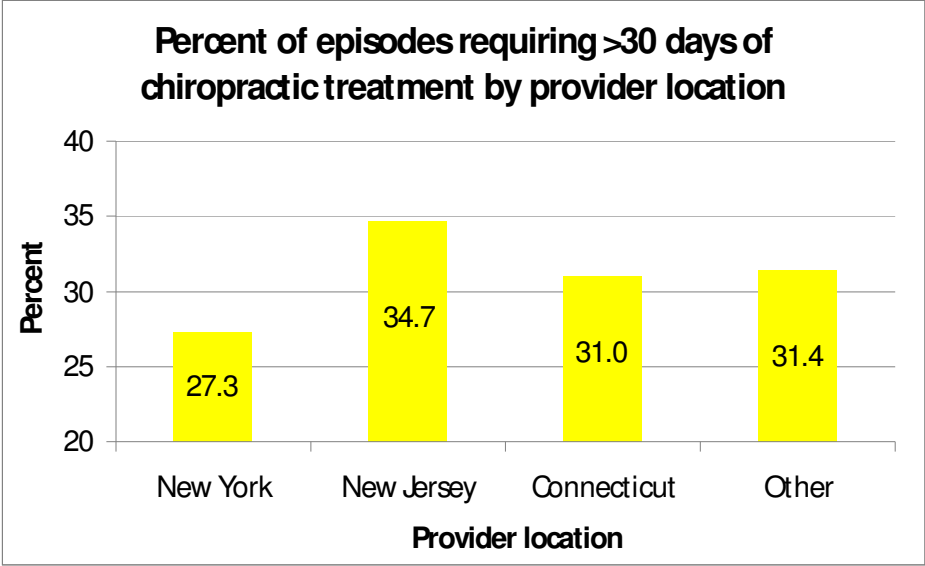
Results

Year	Total patients	Total episodes	Percent of episodes with care delivered >30 days (n)
2005	39,163	49,561	31.1% (15,426)
2006	37,789	47,135	29.1% (13,739)
2007	35,568	43,836	26.1% (11,455)
TOTAL		140,532	28.9%

Primary diagnosis group	Percent of episodes (n)	Percent of episodes with care delivered >30 days
722 - Intervertebral disc disorders	11.2% (15,713)	35.2%
723 - Other disorders of cervical region	19.4% (27,267)	31.0%
724 - Other disorders of back	23.6% (33,152)	30.1%
739 - Nonallopathic lesions	17.4% (24,395)	30.5%
847 - Sprains and strains	13.0% (18,257)	25.2%
Other diagnosis	15.5% (21,748)	29.1%

Factors Associated with >30 Days of Chiropractic Treatment





Multivariate Model:
Factors Associated With >30 Days of Chiropractic Treatment

	B	S.E.	Exp(B) (95% CI)	p-value
Patient age				
<25 years old	-	-	-	
25-44 years old	.327	.022	1.387 (1.327-1.449)	<.001
>45 years old	.451	.023	1.571 (1.503-1.642)	<.001
Symptom duration				
< 3 weeks	-	-	-	
3-6 weeks	.219	.013	1.364 (1.314-1.415)	<.001
>6 weeks	.310	.019	1.797 (1.740-1.856)	<.001
Spine pain radiation				
Pain localized to spine	-	-	-	
Radiate to head, elbow or knee	.095	.015	1.099 (1.068-1.132)	<.001
Radiate below knee or elbow	.152	.016	1.164 (1.128-1.202)	<.001
Patient status (Reference =Established patient)	.192	.016	1.211 (1.173-1.251)	<.001
Year of care request				
2005	-	-	-	
2006	-.070	.015	0.932 (0.906-0.959)	<.001
2007	-.215	.015	0.806 (0.783-0.831)	<.001
Provider practice state				
New York	-	-	-	
New Jersey	.351	.016	1.421 (1.377-1.466)	<.001
Connecticut	.198	.021	1.219 (1.1170-	<.001
Other	.096	.078	1.270)	0.220
			1.101 (0.944-1.284)	
Initial treatment plan status (Reference = Approved)	.219	.013	1.244 (1.213-1.276)	<.001

Discussion

Most patients (71%) do not receive chiropractic care beyond a continuous 30-day period. Patients receiving care beyond 30 days tend to be older, have a longer duration of symptoms prior to treatment, and experience pain that radiates below the knee or elbow. Providers also influence whether a patient receives care beyond 30 days depending on where they practice, the status of the patient as new or established, and whether the providers' initial care requests are completely approved. Care extending beyond 30 days becomes less likely with each successive year.

Providers play an important role in establishing and influencing patient expectations. The variability that exists among providers is not necessarily related to patient condition.

For example, age, condition severity, and symptom duration did not differ across patients within geographically contiguous states with the northeastern United States. However, after controlling for key patient and provider-level variables, patients in New Jersey were 42% more likely to receive care beyond 30 days than patients in New York. The practice patterns and provider expectations which contribute to this variation must be explored and addressed to ensure that the pain patient only receives safe and medically appropriate care.