

Abstract 13: Chronic Lower Back Pain (CLBP), analysis in 334 patients, Chiren Therapy Centre, Limerick, Ireland, (September 2017 - September 2023).

Objectives:

1. To conduct a causal stratified assessment by sex and age groups using data from 334 patients, focusing solely on information gathered during their first visit.
2. To perform a trend analysis of treatment outcomes after completing five treatments in a subset of 82 patients with CLBP.

Background:

Chronic lower back pain is a complex condition lasting over three months, impacting quality of life and involving various factors like biomechanical issues, altered pain processing, and psychosocial stressors. Treatment includes a multidisciplinary approach with pharmacotherapy, physical therapy, and patient education. Globally, it imposes significant financial burdens due to healthcare costs and productivity losses, alongside labour burdens from decreased workforce participation and reliance on social assistance programs. The role of trauma stress exposure in contributing to chronic lower back pain (CLBP) remains uncertain. Addressing the complexity of CLBP is requiring the establishment of a standardized methodology for assessment. To meet this need, we introduced two novel indicators: the 'Patient Energy Scale' (PE) and the 'Stress Anxiety Spectrum' (SAS). While the PE was designed to quantify common complaints such as lack of energy, tiredness, or fatigue among patients, the SAS aims to measure the spectrum of symptoms commonly associated with stress and anxiety. Through the observation of the graphic evolution of hundreds of patients in our Trauma Stress Relief (TSR) software, we noticed a trend crossover between the declining SAS line and the increasing PE line after one or more treatments. This crossover, termed the LINQI indicator, blends the Chinese concept of "LI" for restoration, "N" for neurophysio-pathological, and "QI" representing ancestral Chinese energy.

All patients received treatment based on the "Chiren" protocols, with the primary protocol known as the "Ramirez Key," which involves a three-point combination. This combination includes points located on each hand in an area identified by Master Tung as Chong zi 22.01, and Yintang (EX-HN 3), known for its mentally stabilizing effect in Traditional Chinese Medicine (TCM). The selection of these points was based on observed outcomes following needle insertion, where patients frequently reported sensations of clarity, relaxation, and reduced pain levels, sometimes experiencing immediate relief. An immediate treatment response register was created as a result. Subsequently, the Ramirez Key protocol has become the standard protocol used in 100% of patients, regardless of their chief complaint. Additional specific protocols may be incorporated based on individual chief complaints. It is essential to note that we do not offer localized treatment for specific body part pain.

Guided by the principle of the Neurophysio-pathological theory, our treatment aims to stimulate a complex parasympathetic reaction to restore the imbalance in the hypothalamic-pituitary-adrenal axis expressed by the SAS.

Furthermore, this novel acupuncture model diverges from the Traditional Chinese Medicine concept of energy or Qi regulation, focusing instead on harnessing the neurophysiological power to induce relaxation and pain relief.

This study aims to comprehensively explore CLBP assessment, treatment, and outcomes, employing various methods. This includes conducting a causal stratified assessment by sex and age groups using data from 334 patients, followed by a trend analysis after completing five treatments with a subset of 82 patients. The goal is to provide insights into CLBP management and its demographic variations.

Methods:

Data for this study were collected from the Chiren Therapy Centre in Limerick, Ireland, spanning from September 2019 to September 2023. Two distinct population groups were selected. The first group comprised 334 patients suffering from CLBP at their first visit; their chief complaints were recorded and classified based on the International Classification of Diseases version 11 (ICD-11). Exposure to trauma stress was determined by asking each patient if they recalled any physical or emotional trauma or stressful situations preceding or during symptom onset. Stress-Anxiety Spectrum (SAS) scores, derived from a list of 41 symptoms rated on a scale of 0 to 10, categorized patients as experiencing functional stress (≤ 40) or dysfunctional stress (> 40). Stratified analyses were conducted by gender and age groups. The second population group consisted of 82 CLBP patients who completed six visits, with the first visit serving as the baseline assessment and subsequent visits occurring after each of five treatments. Patients recalling any physical or emotional trauma were categorized into four recall groups (No recall, ≤ 10 years, > 10 to 20 years, > 20 years). Pain intensity was assessed using the Visual Analogue Scale (VAS), adjusted for graphical comparability. Symptom intensity was compared between baseline and the sixth visit assessment. Patients also self-reported their experiences using the Patient Perceived Energy Scale (PE), ranging from 0 to 100. Additionally, patients completed the Hospital Anxiety and Depression Scale (HADS), adjusted to a scale of 0 to 100. Trends analysis of SAS, PE and VAS by gender, age group, re call groups, trauma, criterion A, and ongoing trauma stress. The LINQI indicator was observed at each stratification. Data analysis was performed using Oracle Analytics, Excel, and statistical tests, including the Kruskal–Wallis test in SPSS version 28, with writing support from ChatGPT.

Findings:

Significant associations were found between exposure to traumatic stress events and SAS score (Chi-square = 16.989, $p < 0.0000$), age group (Chi-square = 17.802, $p = 0.0032$), and gender (Chi-square = 17.162, $p = 0.0007$) with full data are summarized in table 1.

Significant variations are observed in all recall trauma groups after five treatments, with an average reduction of 61% in SAS, 48% in VAS, and a 32% increase in PE (p -value 0.0000). Specifically, the group with recall periods less than 10 years exposure shows a reduction of 57% in SAS, and the group with recall periods between 10 to 20 years exposure shows a 52% reduction in VAS. Moreover, the group with recall periods exceeding 20 years exhibits a 44% increase in PE, as illustrated in Table 2.

In the trends analysis depicted in Figure 1, Graph 1, we observe significant reductions in SAS and VAS trends alongside an increase in PE. The LINQI indicator is reported after two treatments. In the recall groups, the > 20 years exposure category exhibits the highest SAS of 103 and with a reduction of 61% with LINQI after the first treatment, as shown in Graph 2. When considering gender, male shown a higher SAS and VAS reduction with highest increases in PE and LINQI after one treatment, as illustrated in Graph 3. Same responses are observed in the ≤ 40 years old LINQI after one

treatment are observed in Graph 4. Among those with trauma history "yes", criterion A "yes," and ongoing stress "yes," SAS exceeded 70, with LINQI noted after one treatment.

The intensity of symptoms chart highlighted that sleep disturbance (7.39), Racing thoughts (7.36) worry (7.26), tiredness (7.11), and irritability (6.39) were the most pronounced symptoms (Figure 2).

Interpretation:

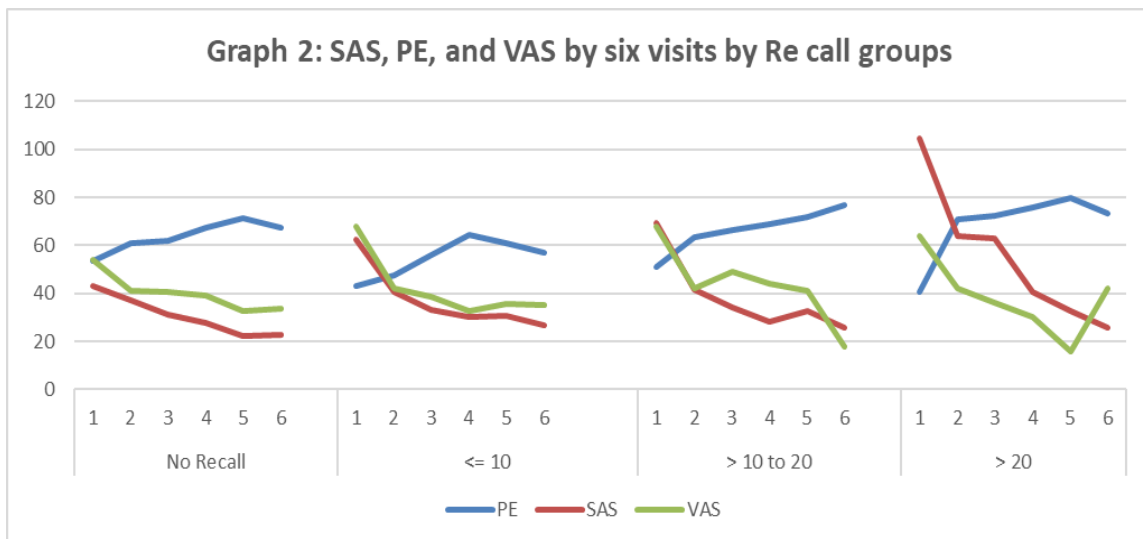
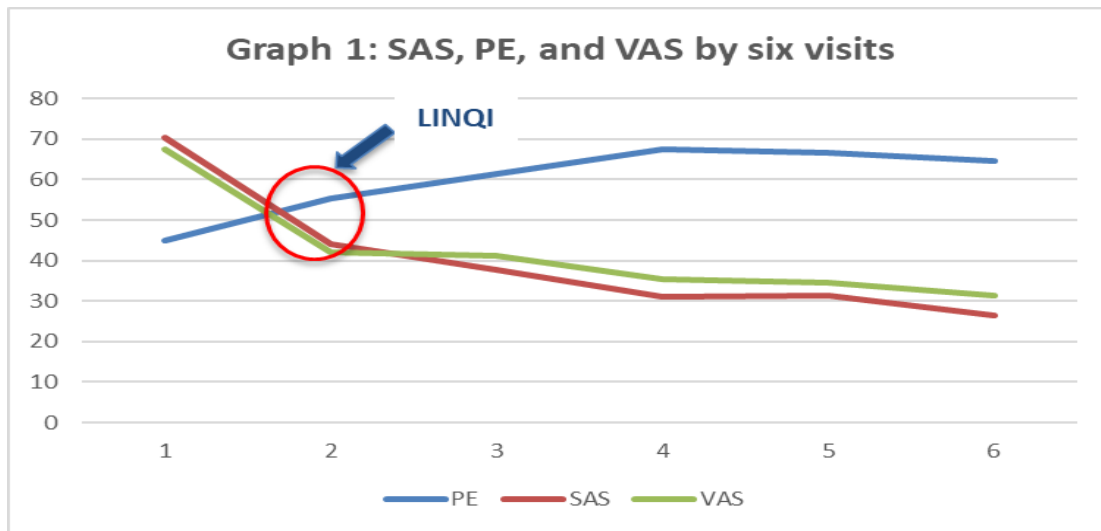
Based on these findings, our study introduces innovative metrics, SAS, and PE, which offer profound insights into the nuanced landscape of CLBP symptoms exacerbated by trauma. The robust causal association observed between exposure to traumatic stress events and SAS score, age group, and gender underscore the intricate interplay of trauma across diverse demographic strata within CLBP patients. Notably, after five treatments, there was a marked reduction in SAS and VAS scores, coupled with a notable increase in PE, indicating favourable treatment outcomes. The early emergence of the LINQI indicator after just one treatment could suggest that the hypothalamic-pituitary-adrenal (HPA) axis imbalance may not be firmly established, presenting a window for early intervention to prevent long-standing imbalances. This underscores the potential effectiveness of the treatment approach in addressing both recent and longstanding trauma-related symptoms associated with CLBP. Additionally, the intensity of symptoms chart highlights common complaints such as tiredness, stress, and racing thoughts, further emphasizing the multifaceted nature of CLBP symptoms. These findings offer valuable insights into the understanding of nociplastic pain, shedding light on the complex interplay between psychosocial stressors and neurophysiological mechanisms underlying CLBP. Moreover, by elucidating the response patterns to treatment, this study contributes to the burden of CLBP, both in terms of healthcare costs and individual well-being. Further research is warranted to delve deeper into the mechanisms behind these findings and to refine treatment strategies for individuals affected by CLBP. In conclusion, while our study offers promising evidence of the therapy's efficacy in alleviating trauma-related symptoms in CLBP patients, addressing limitations through biomarker analysis, longitudinal assessments, and comparative effectiveness research is paramount.

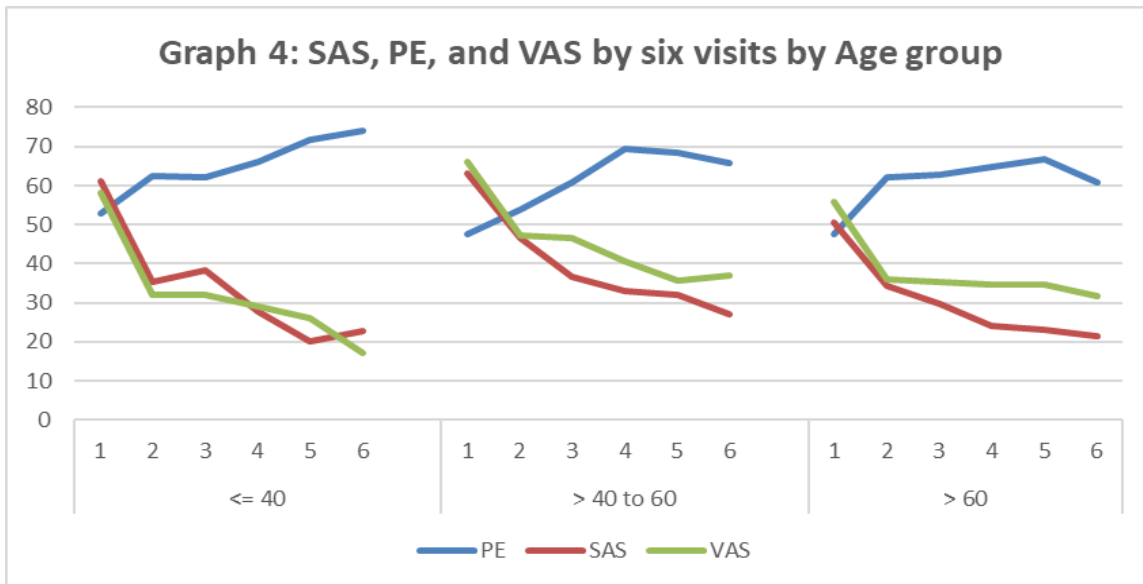
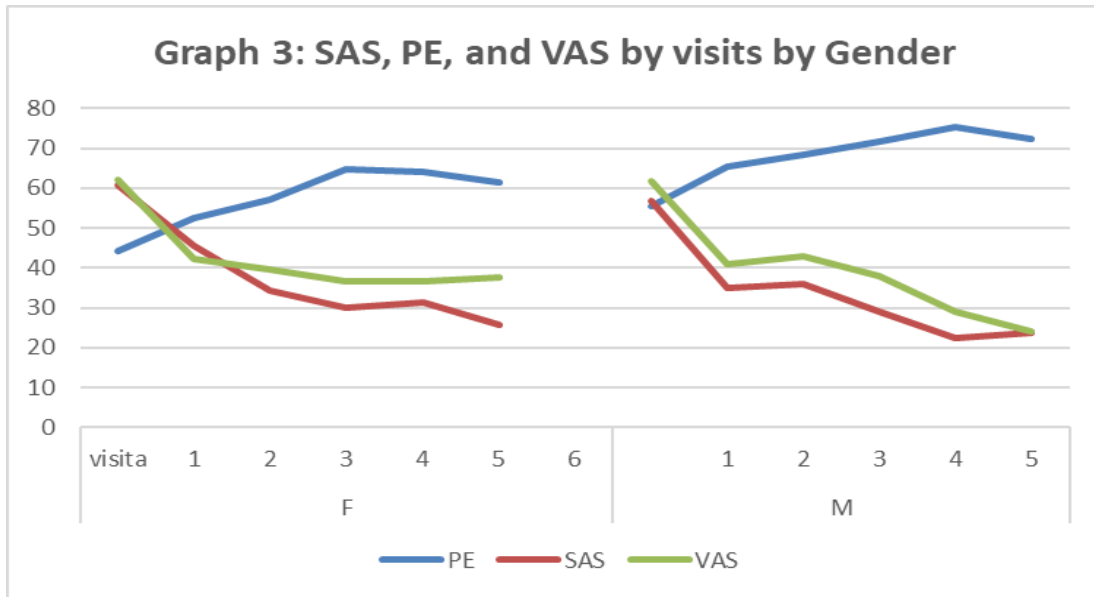
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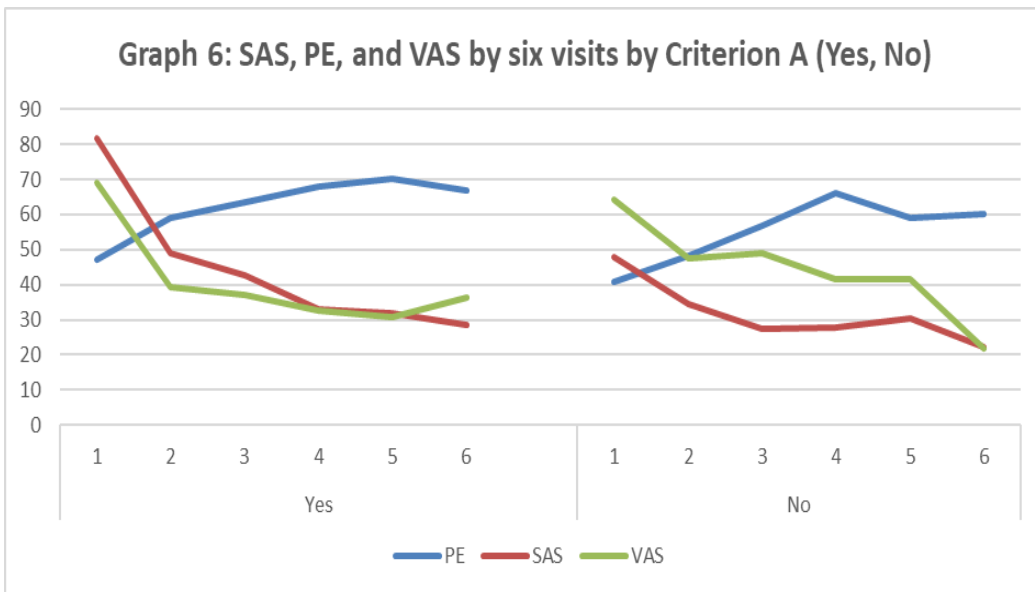
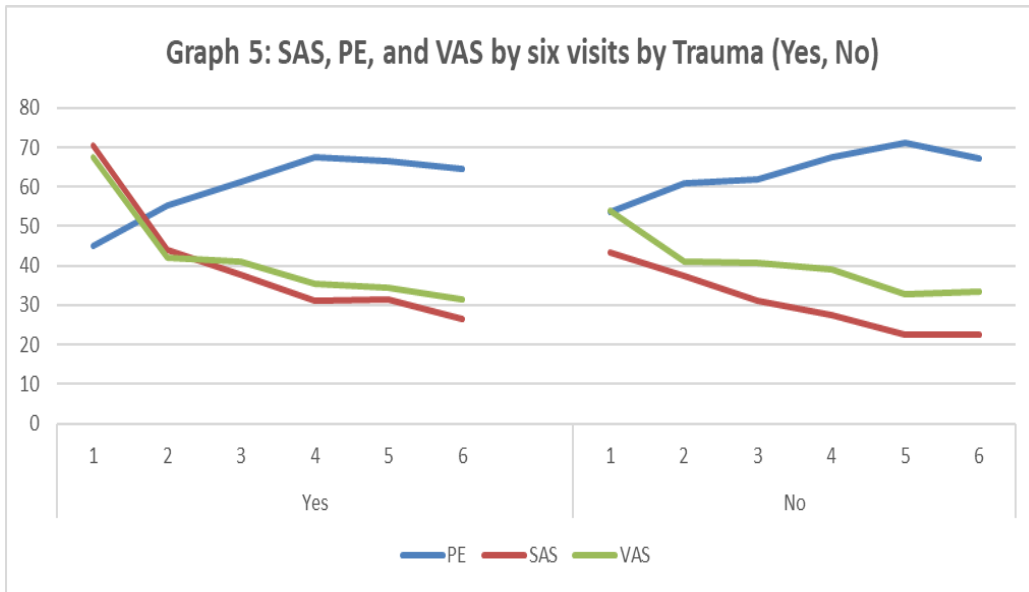
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Figure 1: Treatment impact measured by Stress anxiety spectrum (SAS), Visual analogue scale (VAS) and perceived energy (PE) by six visits by different stratifications in Chronic Low Back Pain patients, Chiren Therapy Centre, Limerick, Ireland, September 2019 – September 2023.







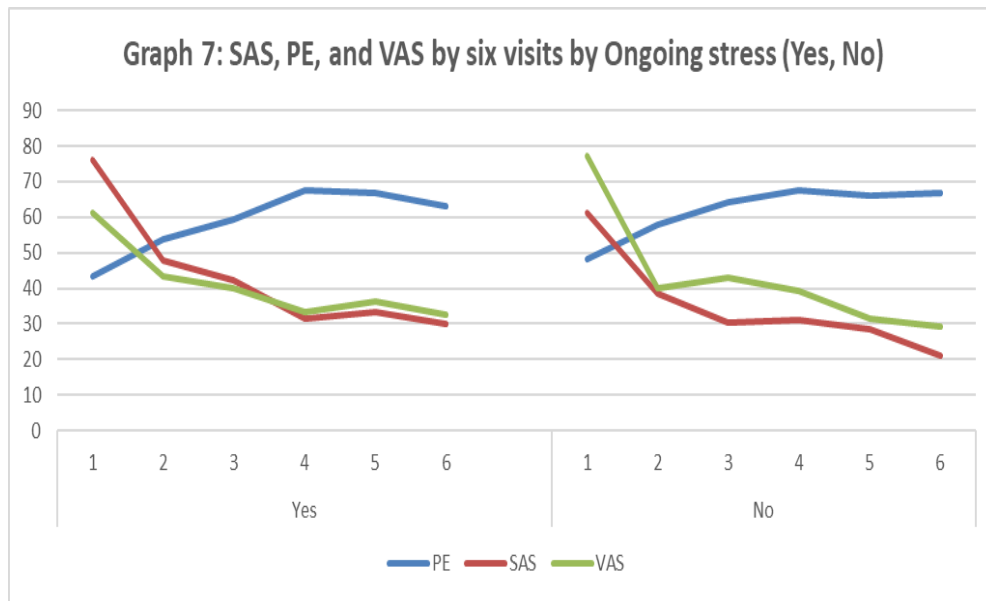


Figure2: Comparison of Intensity of top 15 Stress Anxiety Symptoms at Visits 1 and 6: Analysis of 82 Chronic Lower Back Pain (CLBP) Patients at Chiren Therapy Centre, Limerick, Ireland (September 2019 – September 2023).

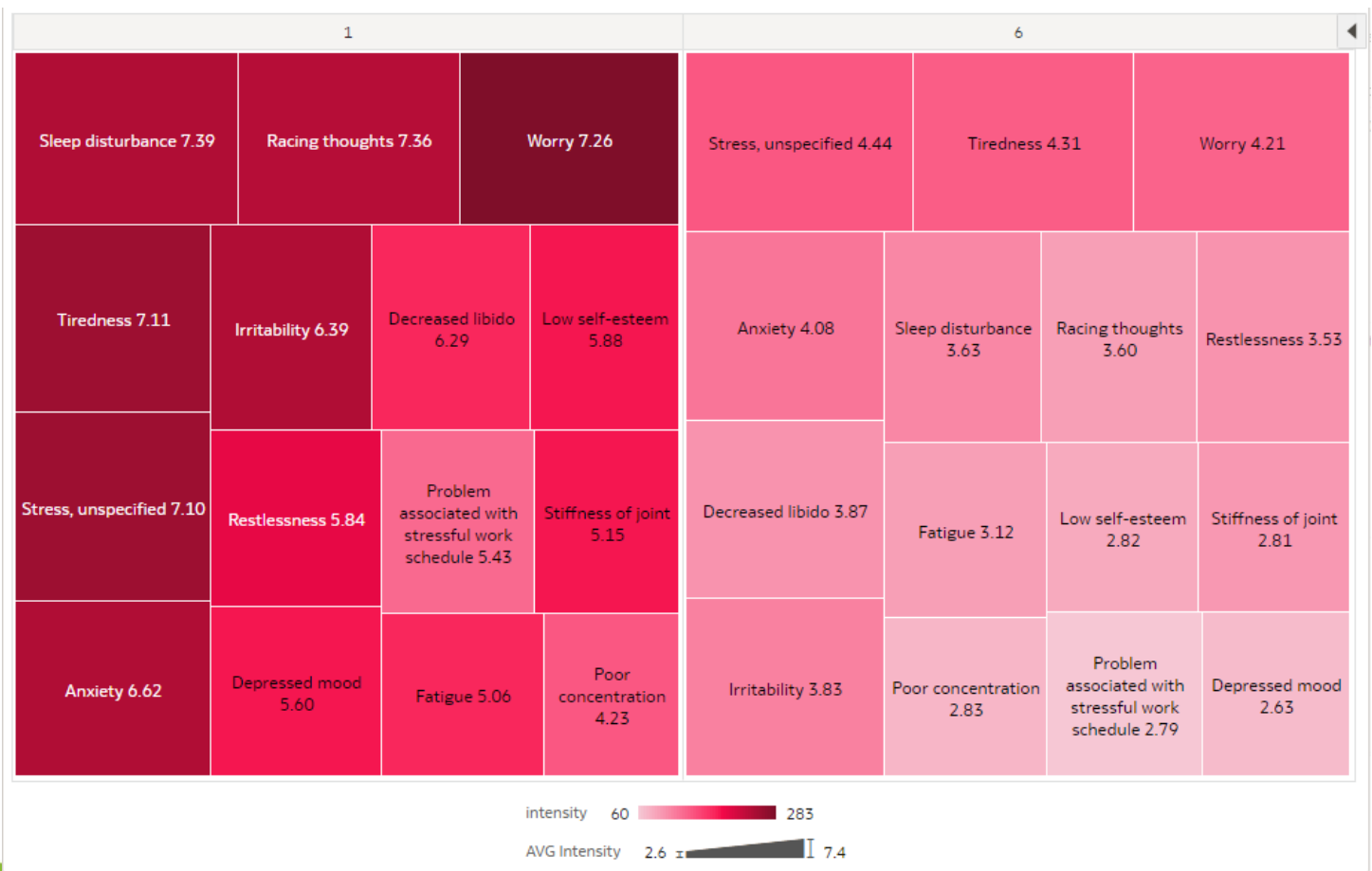


Table 1: Causal link between traumatic events and stress anxiety spectrum symptoms in 301 Chronic unspecified lower back patients, stratified by Age group and gender. Chiren Therapy Centre, Limerick, Ireland, September (2019 to September 2023).

		SAS		Chi-Square	P-value
		> 40	<= 40		
	Trauma exposure				
	Yes	98	31		
	No	69	65		
	Grand Total	167	96	16.989	0.0000
The p-value is 0.0001. significant at p < 0.05.					
Age group	Trauma exposure	> 40	<= 40	Chi-Square	P-value
<= 40	Yes	24	7	5.107	0.0238
	No	16	16		
> 40 to 60	Yes	53	16	7.069	0.0078
	No	34	28		
> 60	Yes	21	8	4.282	0.0385
	No	19	21		
	Grand Total	167	96	17.802	0.0032
The p-value is 0.0000. significant at p < 0.05.					
Gender	Trauma exposure	> 40	<= 40	Chi-Square	P-value
F	Yes	52	16	7.564	0.0060
	No	32	28		
M	Yes	46	15	9.117	0.0025
	No	37	37		
	Grand Total	167	96	17.162	0.0007
The p-value is 0.0000. significant at p < 0.05.					

Table 2: Percentage of variation by indicator, stratified by Trauma Recall groups, after five treatments in 136 Chronic low back pain (CLBP) patients. Chiren Therapy Centre, Limerick, Ireland, September (2019 to September 2023).

	PE % increases	SAS % Reduction	VAS % Reduction	HADS Anxiety Reduction	% Depression Reduction	%
No recall	20	48	38	24	10	
<= 10	31	57	48	28	21	
> 10 to 20	34	63	74	48	58	
> 20	44	76	34	37	63	
Overall	32	61	48	34	38	