

Abstract 11: Fibromyalgia, analysis in 301 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 301 patients, focusing solely on information gathered during their first visit.
2. To perform a trend analysis of treatment outcomes after completing five treatment sessions in a subset of 95 patients with fibromyalgia.

Background:

Fibromyalgia is a chronic pain condition characterized by widespread musculoskeletal pain. The leading pathological model for fibromyalgia emphasizes dysregulation in the central and peripheral nervous systems. This dysregulation leads to abnormal pain processing, heightened pain sensitivity (central sensitization), neurotransmitter imbalances, and hypothalamic-pituitary-adrenal (HPA) axis dysfunction, contributing to widespread pain, fatigue, and sleep disturbances characteristic of fibromyalgia. Recommended interventions include a multidisciplinary approach comprising medications, cognitive-behavioural therapy, exercise, mind-body techniques, patient education, sleep hygiene, and dietary modifications to alleviate symptoms and improve quality of life.

Exposure to trauma stress can lead to a wide array of complex clinical symptoms, requiring the establishment of a standardized methodology for assessment. To address 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 fibromyalgia assessment, treatment, and outcomes, employing various methods. This includes conducting a causal stratified assessment by sex and age groups using data from 301 patients, followed by a trend analysis after completing five treatments with a subset of 95 patients. The goal is to provide insights into fibromyalgia 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 301 patients suffering from fibromyalgia 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 95 fibromyalgia 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, recall 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 = 19.011, $p < 0.0000$), age group (Chi-square = 28.877, $p = 0.0000$), and gender (Chi-square = 19.983, $p = 0.0002$) 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 51% in SAS, 45% in VAS, and a 28% increase in PE (p -value 0.0000). Specifically, the group with recall periods of 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. The group with recall periods exceeding 20 years shows a 35% 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 one treatment in all different stratification. In the recall groups, the > 20 years exposure category exhibits the highest SAS of 100 and LINQI after the third or fourth treatments, as shown in Graph 2. When considering gender, females display an SAS of 80 and LINQI after 3 or 4 treatments, as

illustrated in Graph 3. Within the age group of >40 to 60, an SAS of 85 and LINQI after 2 treatments are observed in Graph 4. Among those with trauma history "yes", criterion A "yes," and ongoing stress "yes," SAS exceeded 85, with LINQI noted after 3 treatments and after 4 treatments in cases of ongoing stress.

The intensity of symptoms chart highlighted that pain head to toes (8.43) tiredness (8.25), sleep disturbance (7.85), and racing thoughts (7.69) were the most pronounced symptoms (Figure 2).

Interpretation:

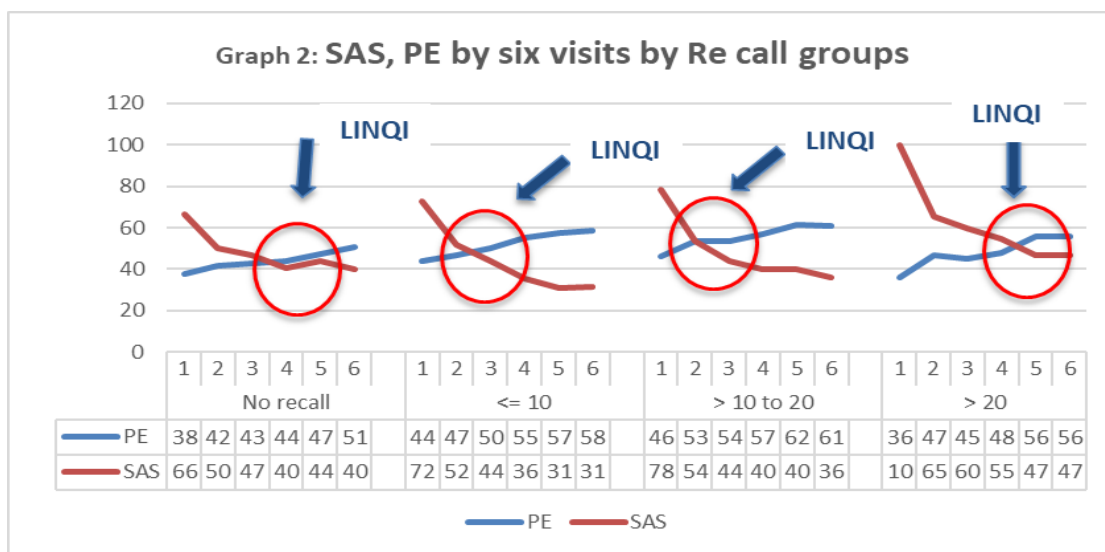
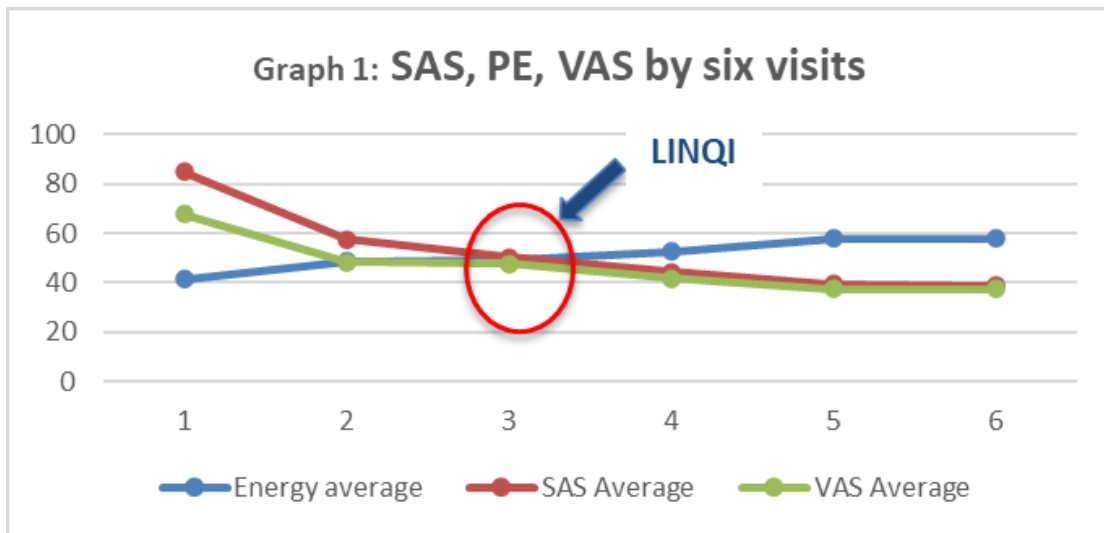
Building upon these findings, our study introduces innovative metrics, SAS and PE, which offer profound insights into the nuanced landscape of fibromyalgia symptoms exacerbated by trauma. The robust causal association observed between exposure to traumatic stress events and SAS score, age group, and gender underscore the intricate interplay of trauma across diverse demographic strata within fibromyalgia patients. Furthermore, the compelling variations detected in recall trauma groups post five treatments underscore the therapy's efficacy, with significant reductions in SAS and VAS scores complemented by a substantial increase in PE. Particularly noteworthy are the pronounced improvements seen in patients with shorter recall periods, indicating a robust response to treatment. The intensity of symptoms chart further accentuates the prevalence of pain head to toes, fatigue, sleep disturbance, and racing thoughts, reinforcing the multifaceted nature of trauma manifestations in fibromyalgia patients. Trend analysis unveils favourable shifts in SAS, VAS, and PE following five treatments, with the LINQI indicator serving as an early marker of treatment efficacy. Suggesting the plausibility for earlier interventions and preventing the long-term effects of trauma stress. Notably, subgroup analyses by trauma exposure duration, gender, and age group unveil distinct response patterns, highlighting the imperative of tailored interventions. In conclusion, while our study offers promising evidence of the therapy's efficacy in alleviating trauma-related symptoms in fibromyalgia patients, addressing limitations through biomarker analysis, longitudinal assessments, and comparative effectiveness research is paramount.

References

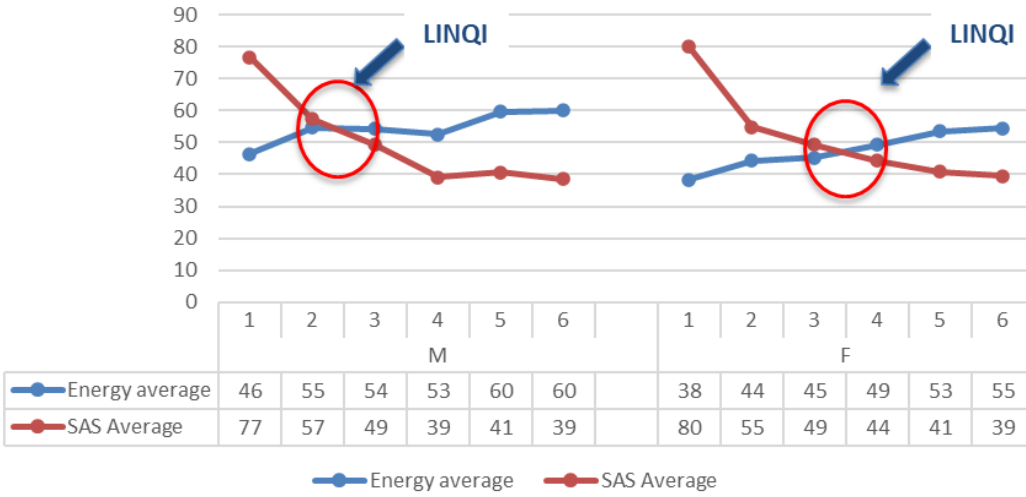
Moreno-Sánchez PA, Arroyo-Fernández R, Bravo-Esteban E, Ferri-Morales A, van Gils M. Assessing the relevance of mental health factors in fibromyalgia severity: A data-driven case study using explainable AI. *Int J Med Inform.* 2024 Jan;181:105280. doi: 10.1016/j.ijmedinf.2023.105280. Epub 2023 Nov 4. PMID: 37952406.

Friend R, Bennett RM. Evaluating Disease Severity in Chronic Pain Patients with and without Fibromyalgia: A Comparison of the Symptom Impact Questionnaire and the Polysymptomatic Distress Scale. *J Rheumatol.* 2015 Dec;42(12):2404-11. doi: 10.3899/jrheum.150443. Epub 2015 Nov 1. PMID: 26523027.

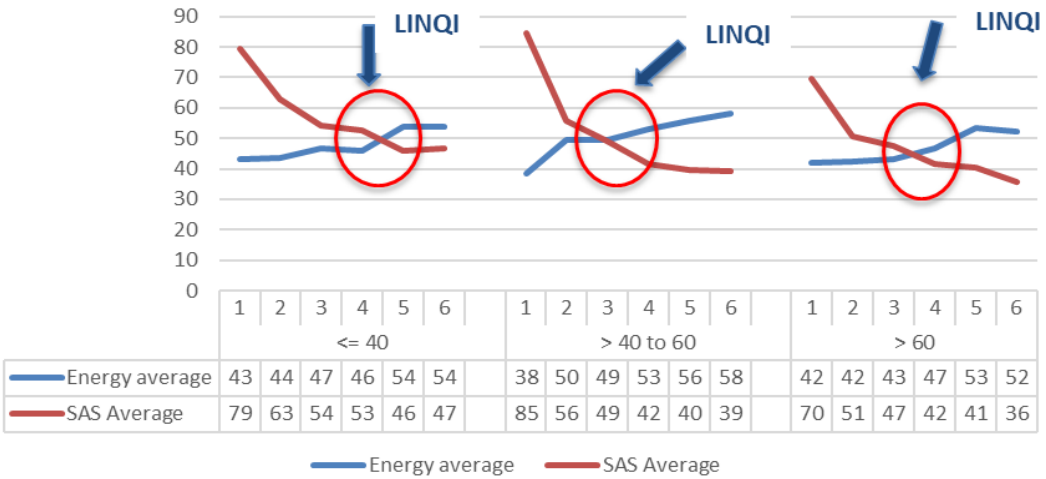
Figure 1: Treatment impact measured by Stress anxiety spectrum (SAS), Visual analogue scale (VAS) and perceived energy (PE) by six visits by different stratifications in 95 fibromyalgia patients, Chiren Therapy Centre, Limerick, Ireland, September 2019 – September 2023.



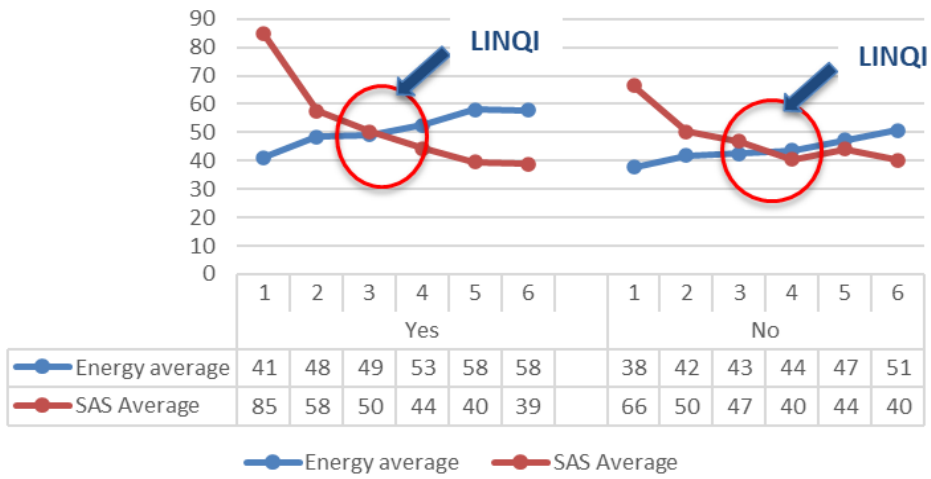
Graph 3: SAS, PE by visits by Gender



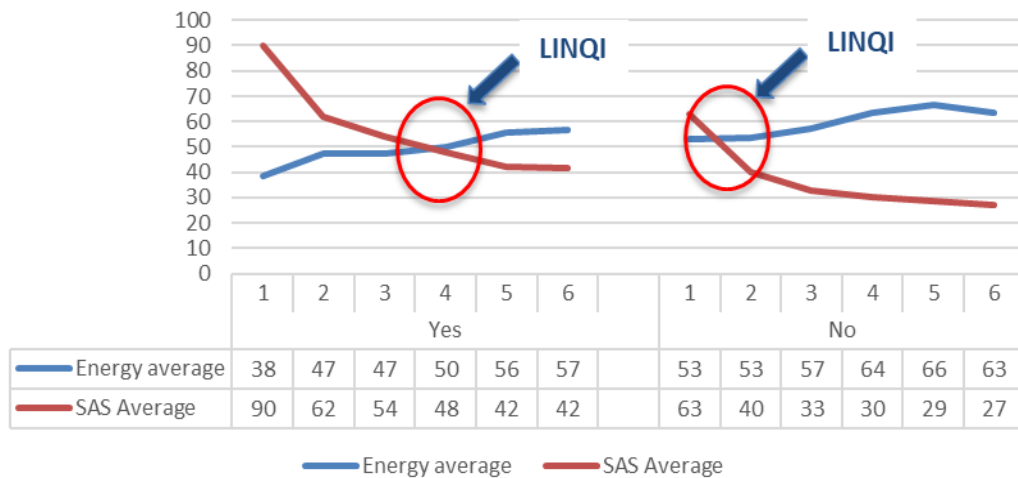
Graph 4: SAS, PE by six visits by Age group



Graph 5: SAS, PE by six visits by Trauma (Yes, No)



Graph 6: SAS, PE by six visits by Criterion A (Yes, No)



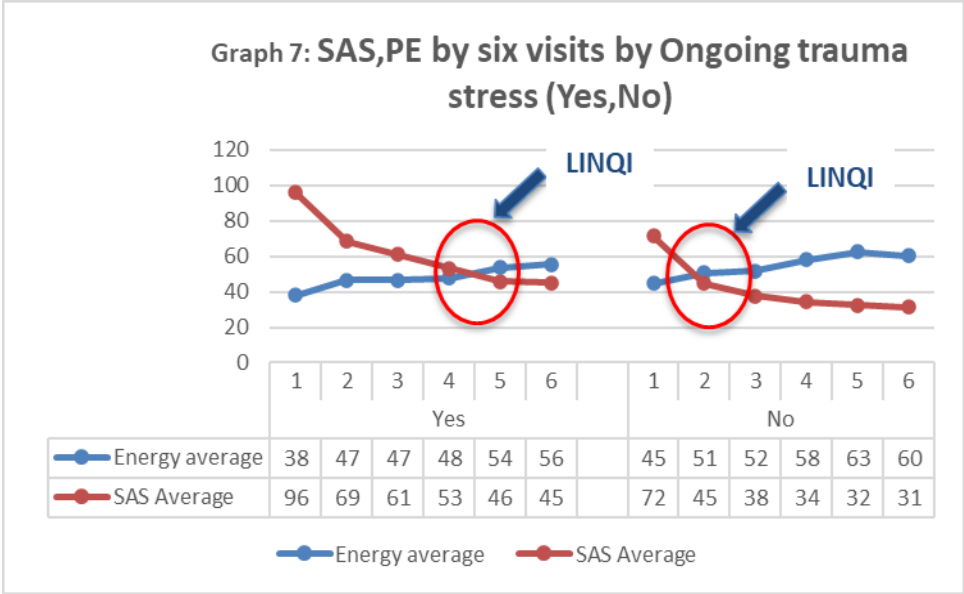


Figure 2: Comparison of Intensity of top 15 Stress Anxiety Symptoms at Visits 1 and 6: Analysis of 95 Fibromyalgia Patients at Chiren Therapy Centre, Limerick, Ireland (September 2019 – September 2023).

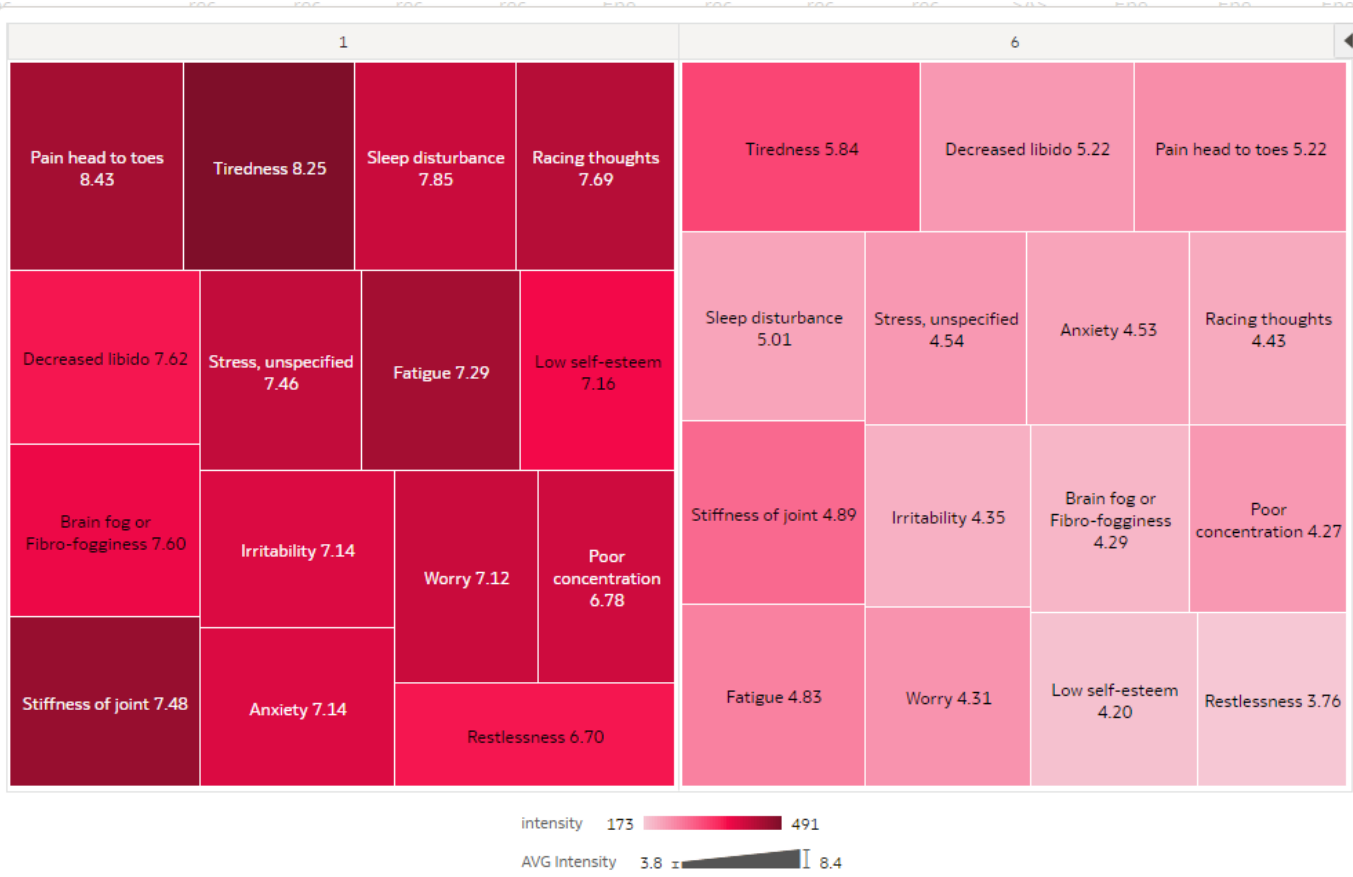


Table 1. Causal link between traumatic events and stress anxiety spectrum symptoms in 301 fibromyalgia patients, stratified by Age group and gender. Chiren Therapy Centre, Limerick, Ireland, September (2019 to September 2023).

		SAS		Chi-Square	P-value
		> 40	<= 40		
	Trauma exposure				
	Yes	190	16		
	No	70	25		
	Grand Total	260	41	19.011	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	37	2	7.033	0.0080
	No	8	4		
> 40 to 60	Yes	110	5	10.691	0.0011
	No	44	11		
> 60	Yes	43	9	3.406	0.0650
	No	18	10		
	Grand Total	260	41	28.877	0.0000
The p-value is 0.0000. significant at p < 0.05.					
Gender	Trauma exposure	> 40	<= 40	Chi-Square	P-value
F	Yes	160	15	14.611	0.0001
	No	47	18		
M	Yes	30	1	3.411	0.0200
	No	23	7		
	Grand Total	260	41	19.983	0.0002
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 95 fibromyalgia patients. Chiren Therapy Centre, Limerick, Ireland, September (2019 to September 2023).

	PE % increases	SAS % Reduction	VAS Reduction	HADS % Anxiety Reduction	% Depression Reduction	%
No recall	26	39	45	20	25	
<= 10	25	57	42	29	29	
> 10 to 20	26	54	52	33	28	
> 20	35	53	43	19	25	
Overall	28	51	45	25	27	