

**Abstract 6: Epidemiological study of causal link between Criterion A, life changing events, and stress anxiety spectrum (SAS) among nine selected medical conditions in 855 patients, Chiren Therapy Centre, Limerick, Ireland.**

**Objectives:**

To investigate the causal link between Criterion A, life changing events and stress anxiety spectrum symptoms, accounting for confounding factors and nine medical conditions in 855 patients first visit.

**Background:**


Considering the current controversies about the definition of Criterion A, many years ago, we included as part of our routine assessment an open question: "Has this traumatic event changed your life?" (Yes or No), among patients who had already confirmed exposure to a traumatic or stressful event. Additionally, observing similarities among many symptoms led us to create an indicator called the 'Stress Anxiety Spectrum' (SAS). The purpose of this indicator is to quantify the spectrum of symptoms commonly exhibited by patients. This assessment aimed to determine how exposure to Criterion A, life-changing events, could be significant and linked to the development of the SAS, and how this could manifest as a causal effect in nine selected medical conditions. Our null hypothesis posits no causal effect between Criterion A, life-changing traumatic or stressful events, and SAS.

**Methods:**

Utilizing data from the Chiren Therapy Centre, Limerick, Ireland, from September 2019 to September 2023. Initial assessments capture patients' chief complaints, subsequently classified, and recorded according to the International Classification of Diseases version 11 (ICD-11). For this study the top nine most prevalent ICD 11 code were selected. Exposure variable was obtained by asking every patient, "do you recall any physical or emotional trauma or stressful situations before or during the onset of symptoms?". If answer is "YES" the practitioner, ask the patient "Has this traumatic event changed your life?" (Yes, or No), answers are recorded. Stress-Anxiety Spectrum (SAS) scores were derived from a comprehensive list of 40 symptoms, with intensities rated on a 0 to 10 scale. SAS scores categorized patients as functional stress ( $\leq 40$ ) or dysfunctional stress ( $>40$ ), additionally, we calculated Criterion A by SAS intensity. Stratified analysis by gender, age groups and each ICD11 code. Statistical analyses, including descriptive and multivariate techniques, were performed using Oracle Analytics, Chi-square, and P-value statistical test in SPSS version 28.

**Findings:**

Significant associations were found between exposure to Criterion A and SAS score (Chi-square = 54.993,  $p < 0.00001$ ), age group (Chi-square = 72.705,  $p = 0.0000$ ), and gender (Chi-square = 61.28,  $p = 0.0000$ ) with full data are summarized in table 1. Additionally, significant associations were observed between exposure to traumatic stress events and overall health outcomes based on ICD11 codes (Chi-square = 84.353,  $p < 0.00001$ ) as shown in Table 2 outlining specific health conditions analyzed, notably, QE01-Stress (not elsewhere classified) (Chi square 5.498, P-value 0.019), and 6B00-Generalized anxiety disorder (Chi-square 4.834, P-value 0.0279), some of which displayed no significant association



with traumatic stress exposure. Criterion A “YES” by SAS, shown a significant increase of SAS intensity of 34%. (figure 1)

**Interpretation:**

The statistical analysis reveals a strong association between exposure to Criterion A, life changing events, and Stress-Anxiety Spectrum (SAS) scores, with further validation through stratified data analysis by age groups and gender. The results underscore the complexity of pain perception and emphasize the intricate interplay between psychological factors such as stress and anxiety and physical health outcomes. Particularly noteworthy are the associations observed across various health outcomes categorized by ICD-11 codes, notably QE01-Stress (not elsewhere classified), and 6B00-Generalized anxiety disorder. These associations were not previously detected, featuring the novelty of the findings. Notably, the intensity of SAS increased for patients exposed to life-changing events, suggesting a direct association between exposure and symptom severity.

By incorporating our open version of Criterion A, we aimed to understand the role of the intensity impact of the traumatic event to comprehend the severity of patients' clinical manifestations. These results confirm our suspicion. Further studies are warranted to delve deeper into these results, exploring potential mechanisms underlying the observed associations and elucidating strategies for mitigating the adverse effects of life-changing events on health outcomes.





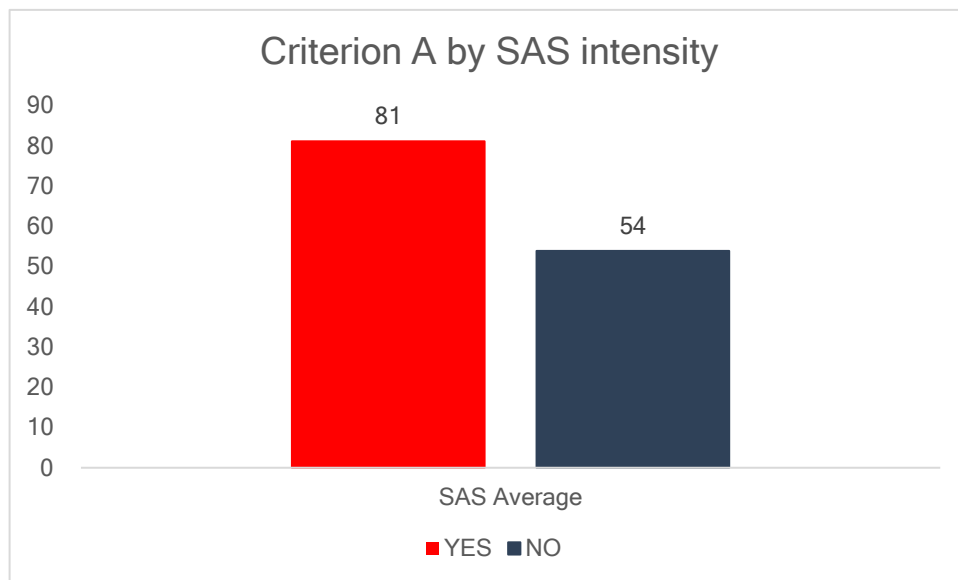
## References

Maureen A. Allwood, *Moving forward with a culturally inclusive PTSD Criterion A: Commentary on Marx et al. (2023)*, *Journal of Traumatic Stress*, 10.1002/jts.23016, 37, 1, (16-18), (2024).

Marx BP, Hall-Clark B, Friedman MJ, Holtzheimer P, Schnurr PP. The PTSD Criterion A debate: A brief history, current status, and recommendations for moving forward. *J Trauma Stress*. 2024 Feb;37(1):5-15. doi: 10.1002/jts.23007. Epub 2023 Dec 20. PMID: 38123526.



**Figure 1. Distribution of Criterion A, by stress anxiety spectrum symptoms (SAS) intensity in 855 patients. Chiren Therapy Centre, Limerick, Ireland, September 2019 - September 2023.**



**Table 1. Causal link between Criterion A, live changing events, and stress anxiety spectrum symptoms (SAS) in 855 patients, stratified by Age group and gender. Chiren Therapy Centre, Limerick, Ireland, September (2019 to September 2023).**

		SAS		Chi-Square	P-value
Criterion A		> 40	<= 40		
Yes		584	59	54.993	0.0001
No		149	63		
Grand Total		733	122		
The p-value is 0.0001. significant at $p < 0.05$ .					
Age group	Criterion A	> 40	<= 40	Chi-Square	P-value
<= 40	Yes	155	20	1.367	0.0000
	No	42	9		
> 40 to 60	Yes	326	20	52.69	0.0000
	No	79	36		
> 60	Yes	103	19	10.794	0.0000
	No	28	18		
Grand Total		733	122	72.705	0.0000

The p-value is 0.0000. significant at $p < 0.05$ .					
Gender	Criterion A	> 40	<= 40	Chi-Square	P-value
F	Yes	416	33	39.439	0.0000
	No	102	38		
M	Yes	168	26	15.403	0.0000
	No	47	25		
Grand Total		733	122	61.28	0.0000
The p-value is 0.0000. significant at $p < 0.05$ .					

**Table 2. Causal link between Criterion A, live changing events and stress anxiety spectrum symptoms (SAS) in 855 patients, stratified by ICD 11 codes. Chiren Therapy Centre, Limerick, Ireland, September 2019 to September 2023.**

ICD 11 Codes	Criterion A	SAS		Chi-Square	P-value
		> 40	<= 40		
ME86-Symptom or complaint of a body part	Yes	52	6	16.413	0.0001
	No	27	22		
MG30-Chronic pain	Yes	205	16	6.179	0.0129
	No	45	10		
ME84-Spinal pain	Yes	83	17	9.011	0.0027
	No	31	20		
ME82-Pain in joint, hip joint	Yes	13	2		
	No		1		
6A73-Mixed depressive and anxiety disorder	Yes	31	2		
	No	5			
RA02-Post COVID-19 condition	Yes	24	2		
	No	6			
QE01-Stress, not elsewhere classified	Yes	61	3	5.498	0.019
	No	5	2		
6B00-Generalised anxiety disorder	Yes	87	6	4.834	0.0279
	No	29	7		
6B40-Post traumatic stress disorder	Yes	28	5	1.613	0.2041
	No	1	1		
		733	122	84.353	0.0000
The p-value is 0.0000. significant at $p < 0.05$ .					