

Assessment of Zink Test Effectiveness as Measure of Perceived Stress in a General Population: a Cross-Sectional Study

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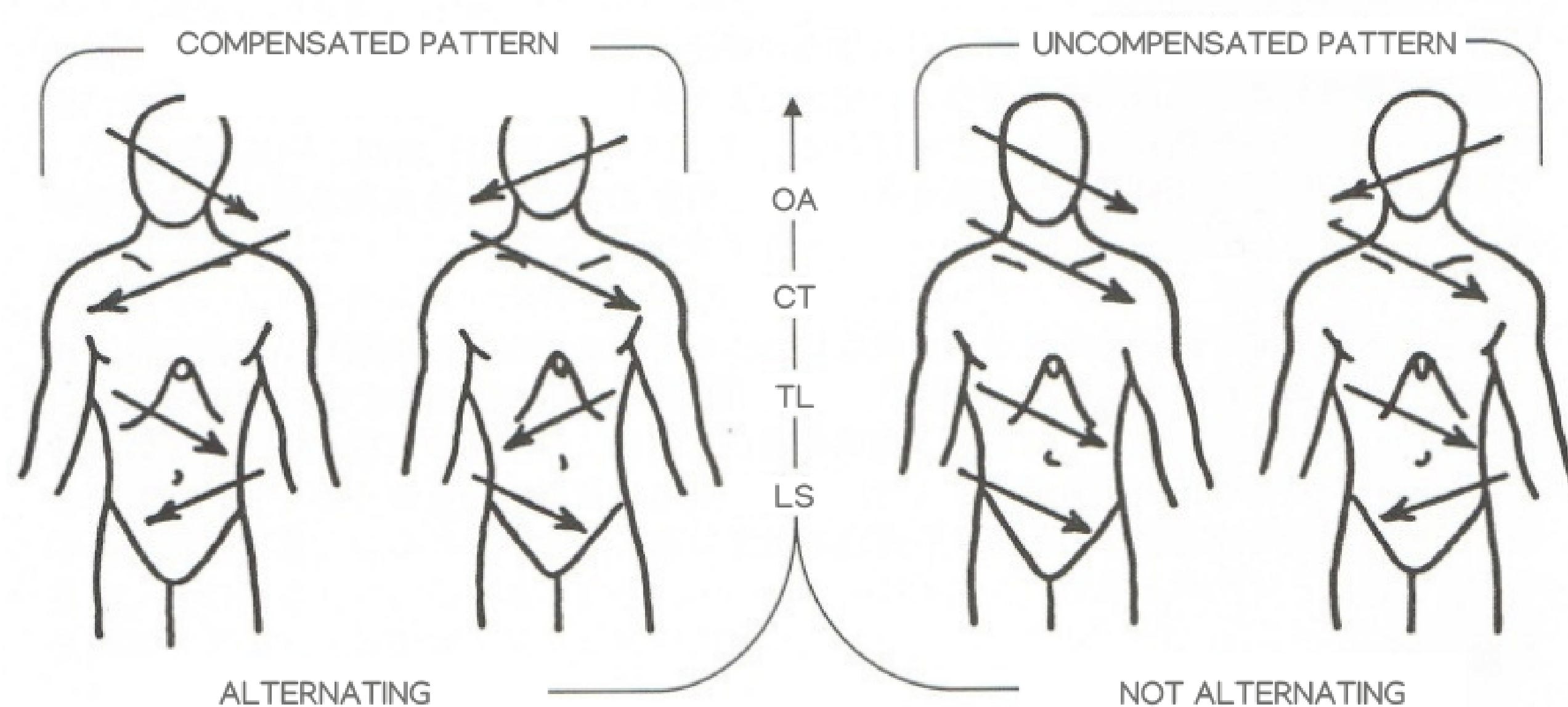


Keywords:

Perceived stress, allostatic load, general adaptation syndrome, OMT, Zink test, diaphragms, fascial patterns.

Background

Zink test is a diagnostic tool commonly used in the osteopathic field, whose aim is to evaluate the alternating fascial motion preference at transitional areas of the body. These regions are anatomically and functionally related both to spine junctions (C0-C1, C7-D1, D12-L1, L5-S1) and actual or functional transverse diaphragms (tentorium cerebelli, upper thoracic outlet, respiratory diaphragm, pelvic diaphragm). The presence of a compensated pattern usually suggests a low allostatic load, while an uncompensated pattern would be frequently detected among hospitalized patients or those who have an allostatic overload according to Zink.



Research objective

The aim of the study is to assess the possible correlation between Zink fascial patterns and the stress level perceived by the patient.

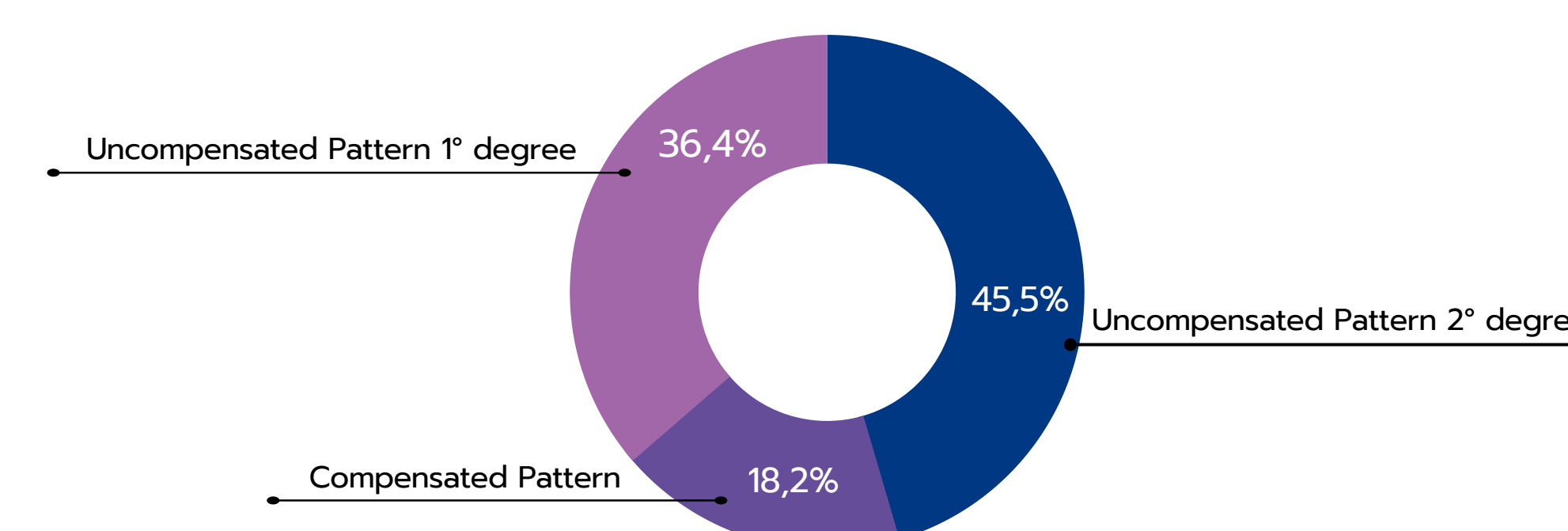
Methods

53 male and female participants, older than 18 years, were included in the study sample. They have been subjected first to stress assessment through the administration of the perceived stress scale 10-items questionnaire (PSS-10). A blinded operator has then performed the Zink test in order to assess the alternating fascial motion preference at transitional areas of each participant. The study was conducted in a observer-blinded fashion in order to prevent any conscious or unconscious expectancy effect.

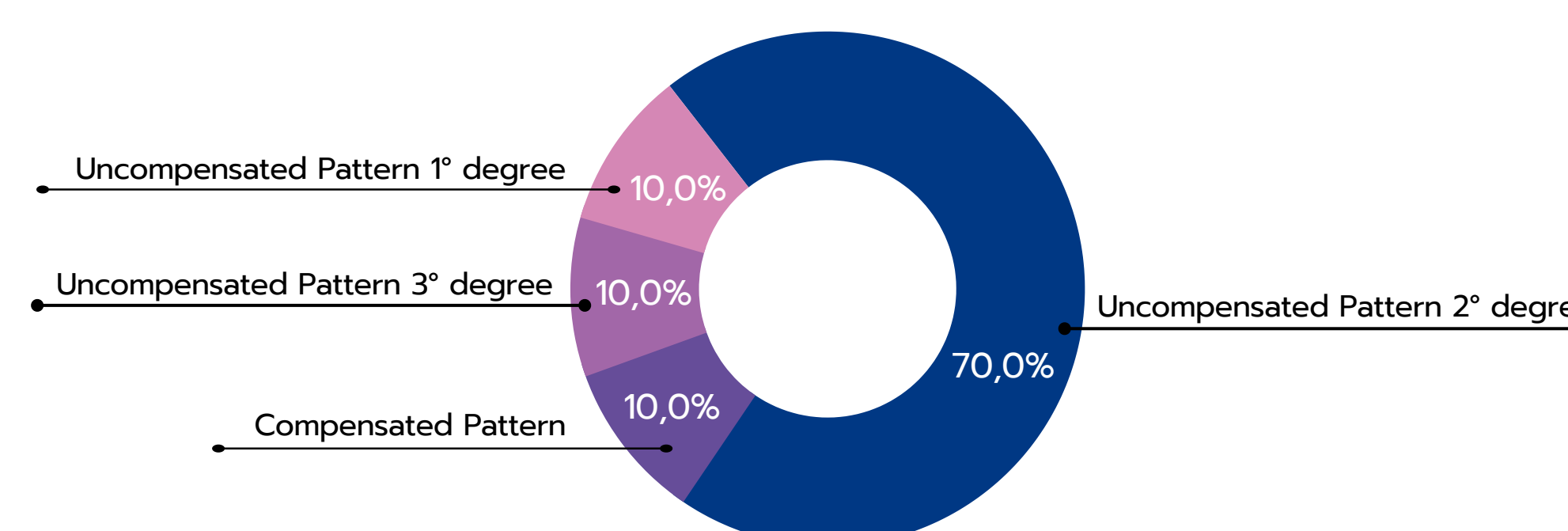
Results

The results achieved by Zink test were classified into 3 groups, according to the presence of neutral, compensated or uncompensated patterns. The uncompensated pattern was further divided into 3 subgroups (1°, 2°, 3° degree), depending on the number of uncompensated transitional zones. The results from PSS-10 questionnaire were classified into 4 groups (low, moderate, high and very high level of stress) according to Smith et al. (2015). The evaluation of relationship among categorical variables through Chi2 test showed a lack of statistical significance between Zink fascial patterns and the perceived stress scale ($p > 0.5$).

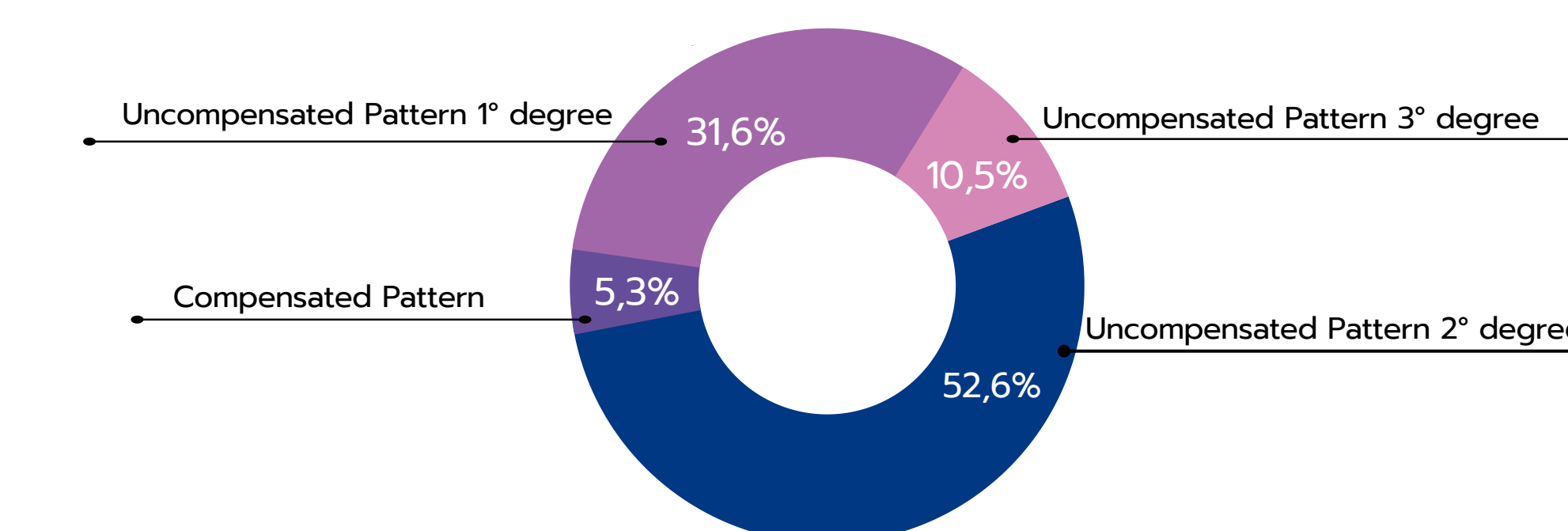
Perceived Stress
LOW



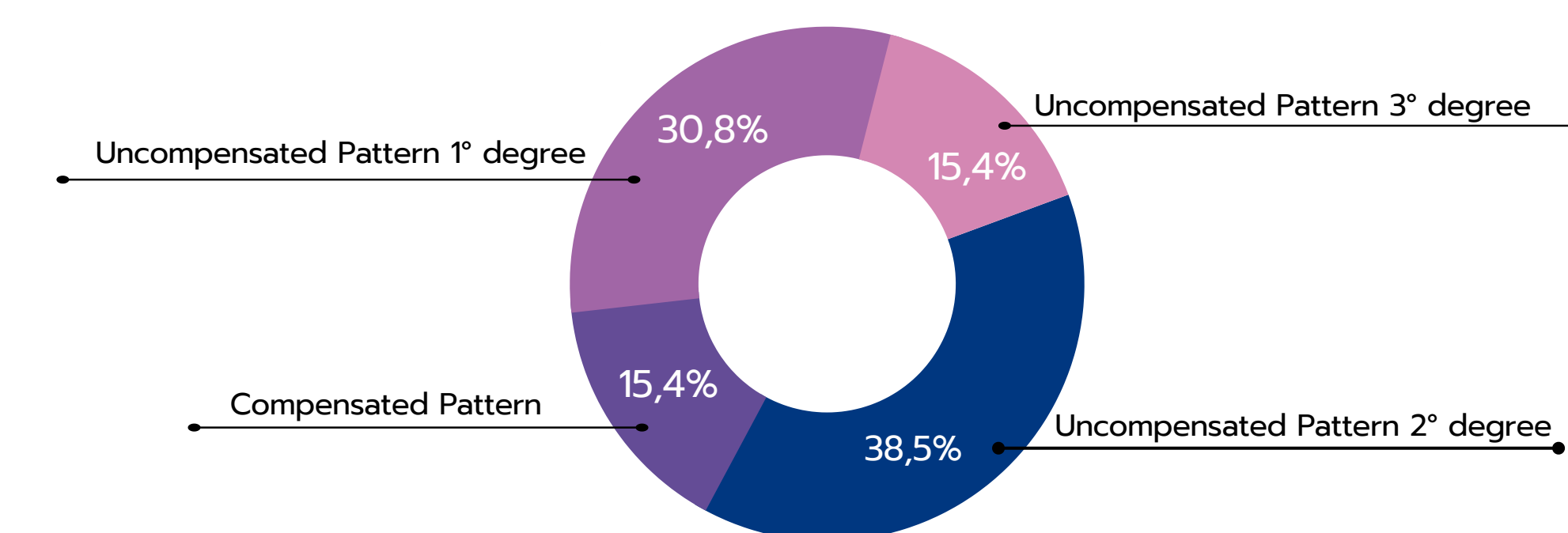
Perceived Stress
MODERATE



Perceived Stress
HIGH



Perceived Stress
VERY HIGH



Discussion

Despite there is no association between fascial patterns and perceived stress scale, the results highlight some interesting points. Among the subjects showing a totally uncompensated pattern (3° degree), 80% exhibited high or very high level of perceived stress while 20% showed a moderate stress level. 70% of subjects with a moderate stress level exhibited a partially uncompensated pattern (2° degree), while 84% of participants with a high stress level showed a partially uncompensated pattern (1 or 2° degree). Finally, none of the subjects presenting a low stress level from PSS-10 showed a totally uncompensated pattern (3° degree). Nevertheless, these apparent relationships turned out to be statistically insignificant.

Conclusion

The study shows a lack of significant correlation between Zink fascial motion preference patterns and the stress degree perceived by the patient. Results seem to suggest a poor reliability for Zink test as a measure of psycho-emotional stress and associated allostatic load. Future studies should examine the correlation between Zink test patterns and the allostatic load using alternative tools and parameters able to reliably objectify stress, such as the salivary cortisol measurement or the Heart Rate Variability. Alternatively, it might be interesting to investigate the value of the Zink test as an osteopathic diagnostic tool in the assessment of chronic pain and central sensitization, through its potential association with medically unexplained symptoms.

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