



A PROTOCOL FOR THE USE OF CRT BASED IN NOVELTY AS AN INFORMATION PROCESSING CHANGE STRATEGY IN ED PATIENTS.



PROCESSING CHANGE STRATEGY IN ED PATIENTS.

What do you see in this cloud ?

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INTRODUCTION

CRT has been used in AN and BN looking for the development of new cognitive strategies in information processing. Studies in other diseases, mainly in neurodegenerative ones and other forms of brain damage have clarified the importance of novelty in cognitive reserve. Novelty contributes with other variables to increase in connectivity, neurogenesis, sinaptogenesis or increase in BDNF levels. Novelty, then, seem to be a crucial element for the enrichment of cognitive functions.

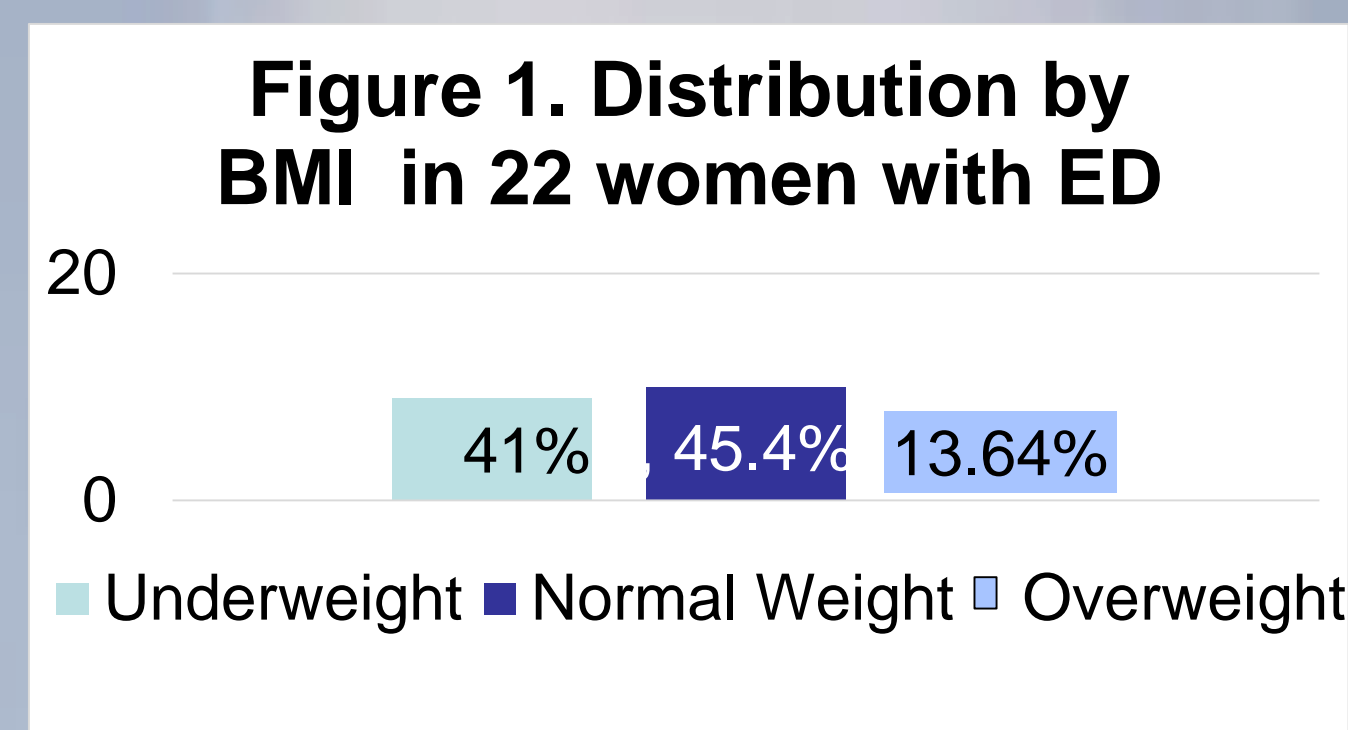
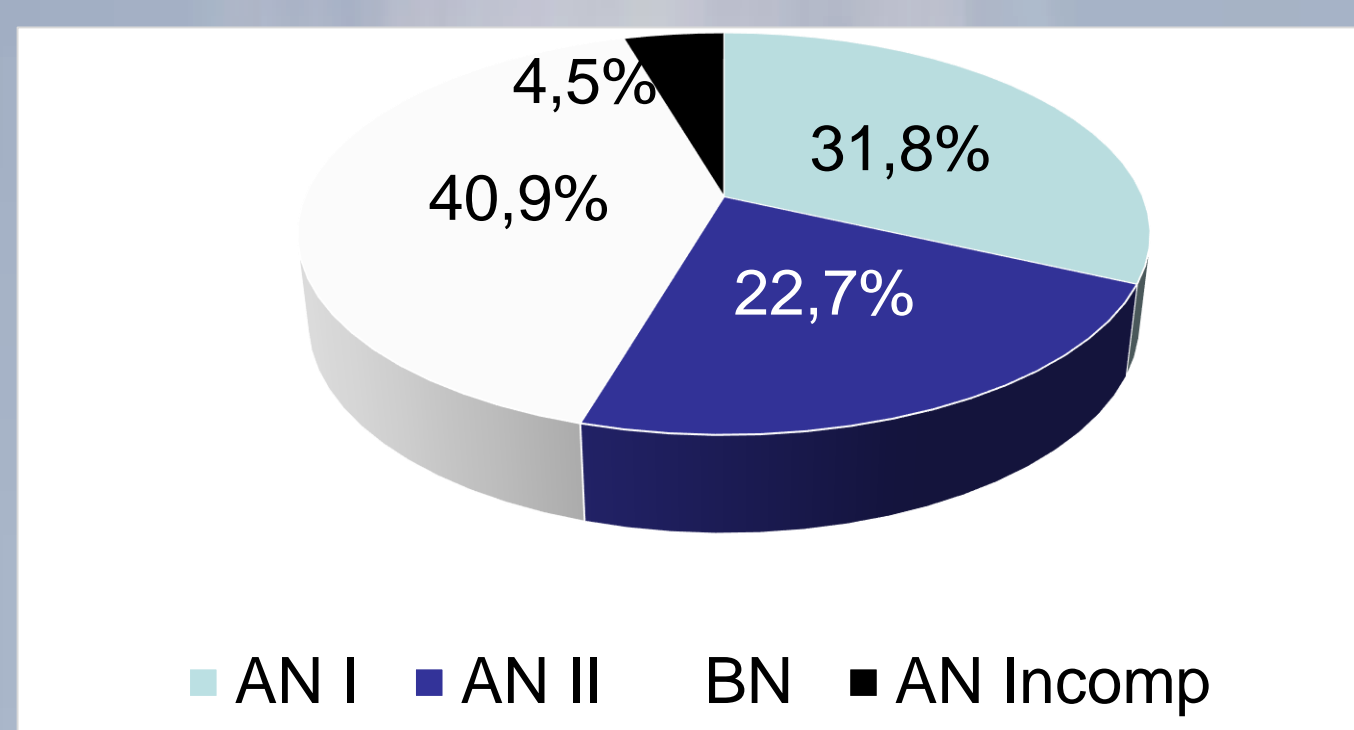
METHODS AND MATERIALS

General Objective: To explore the use of CRT based in novelty, using cloud images, as a change strategy in information processing in patients with AN and BN that assist to an Intensive Outpatient Program.

Specific objectives:

- To train visual-spatial memory exploring the patient ability to identify an object in a cloud, according to its form, it's spatial location and visual memory: to what is it similar?
- To work on central coherence looking for details and whole perceptions in cloud images.
- To stimulate cognitive flexibility through the invitation to see other images in the clouds, different from the typical ones that appear in the session.

Methods: 22 women with AN and BN assisting to an OIP were included (convenience sampling). The procedure can be seen in Table 1. An auxiliary observer register the ability of the participants to see figures in the clouds, and to follow the instructions of the session, their ability to innovate, number of responses, time of response and response style. Simple frequencies of global Central Coherence Index and Fractionated Central Coherence Index in ROFT were calculated. In TT, fluidity, originality, elaboration, abstraction capacity and resistance to closure were observed in the responses. In ST the inhibition response was measured. Finally, the mean pre and post were compared using paired t test.



PROCEDURE

Table 1. Procedure

Session	Activities
1	Neuropsychological evaluation: Rey Osterich Figure Test, Torrence Test, Stroop Test.
2. Printed and projected clouds	What do you see in this cloud? Look at what I see, and now look for something different!
3. Printed and projected clouds	Join the dots to see what I see
4. Printed and projected clouds	What do you see in between clouds?
5. Printed and projected clouds	Use all the clouds you can see in just one image
7. Printed and projected clouds	Complete the figure
8. Printed and projected clouds	Beyond the obvious
	Neuropsychological evaluation: Rey Osterich Figure Test, Torrence Test, Stroop Test.

After each session questions are asked for reflexion: How can we apply this ability in a concrete way in our every day life? How can it be usefull?

RESULTS

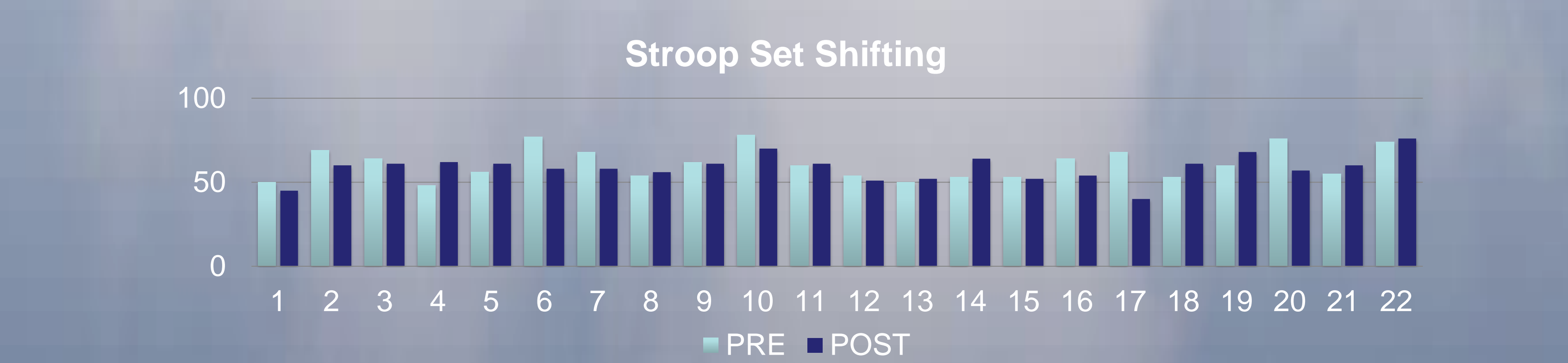
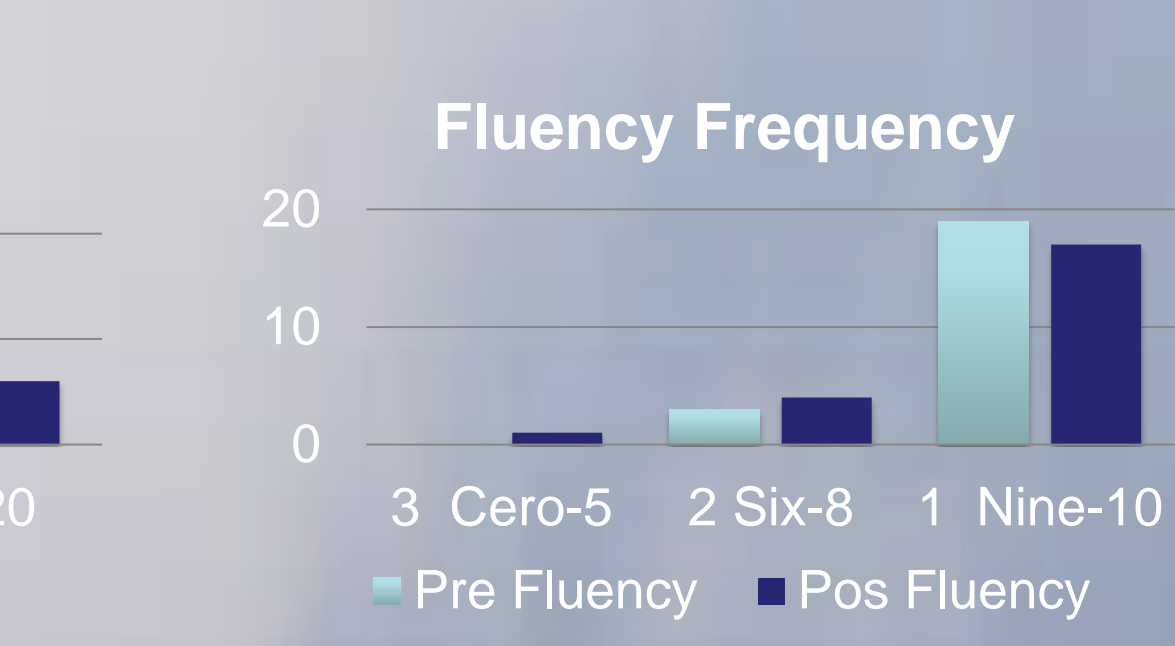
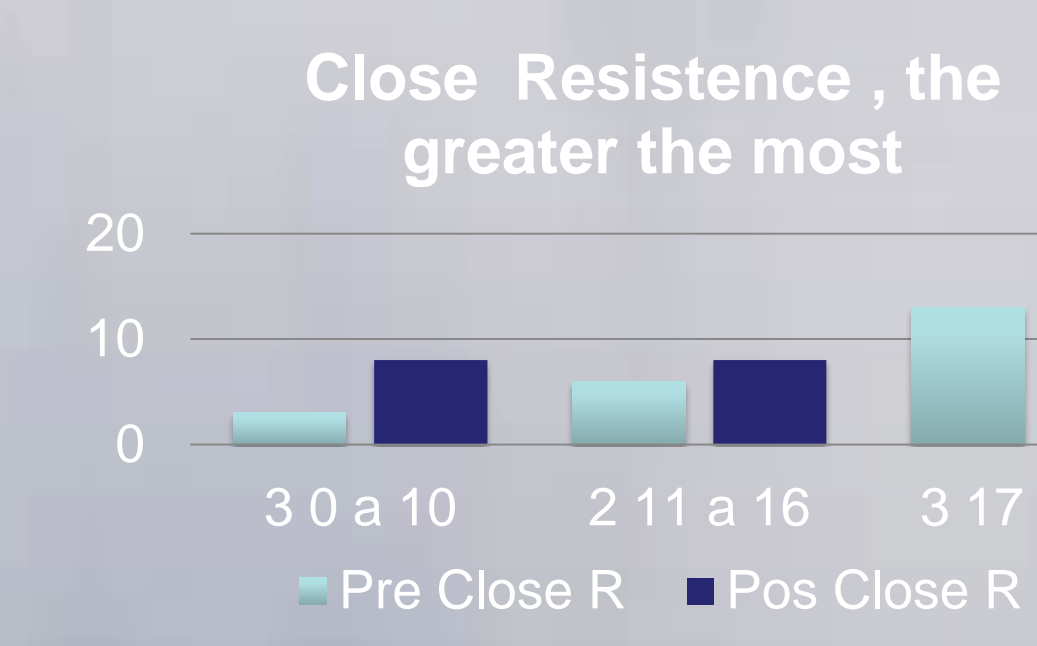
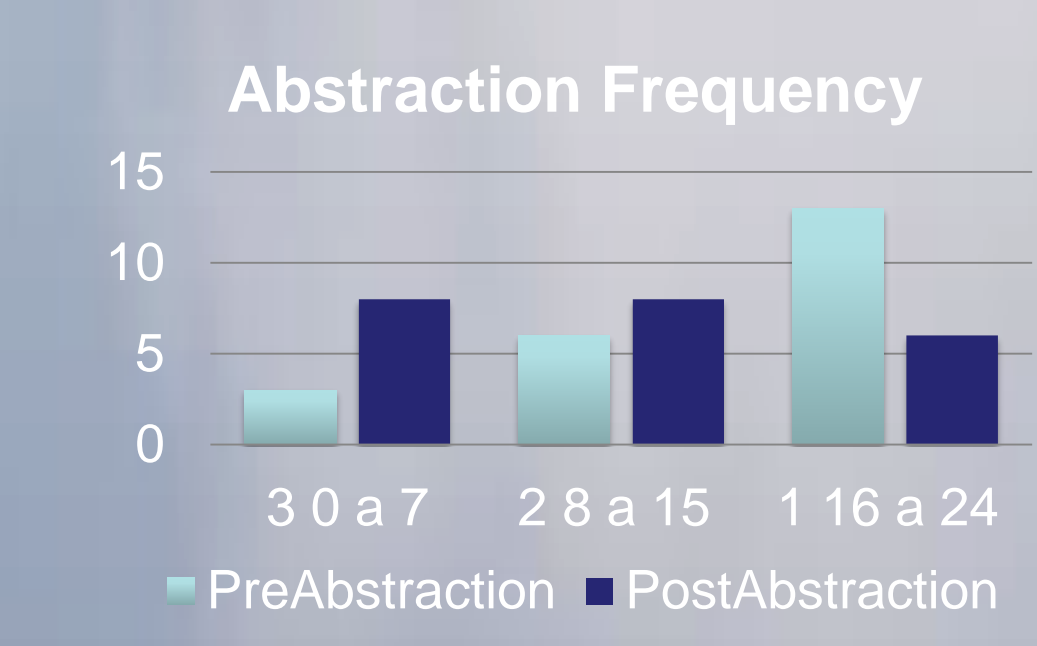
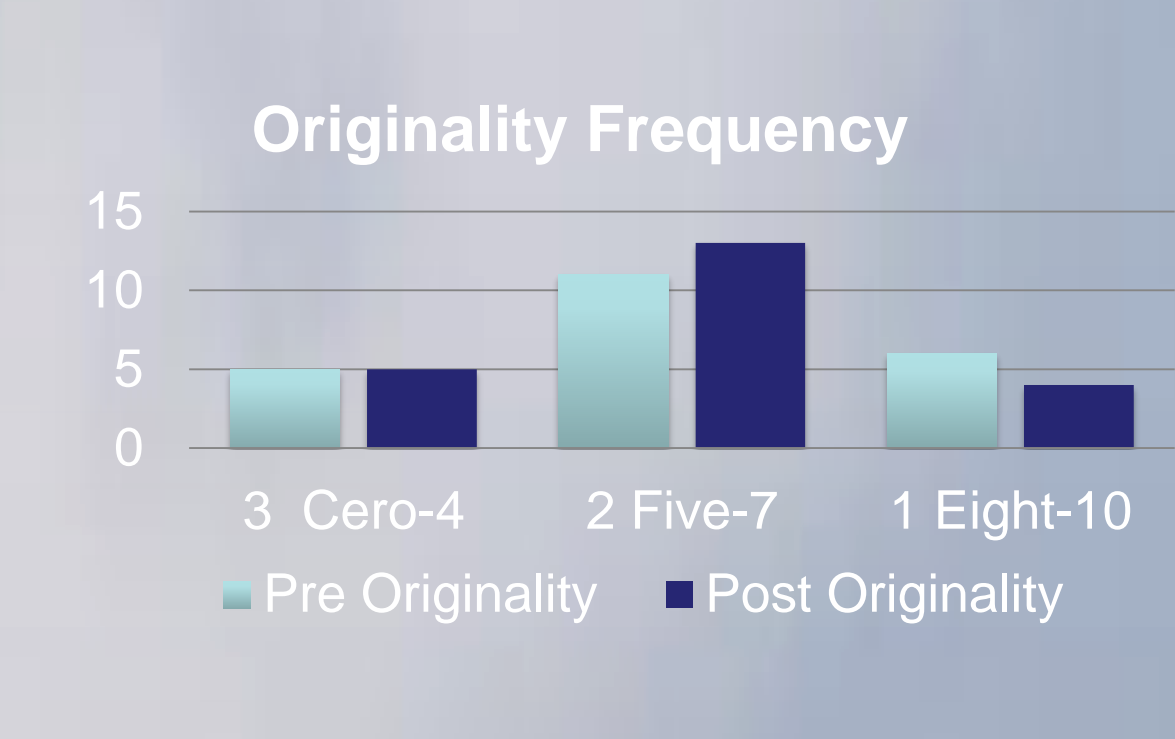
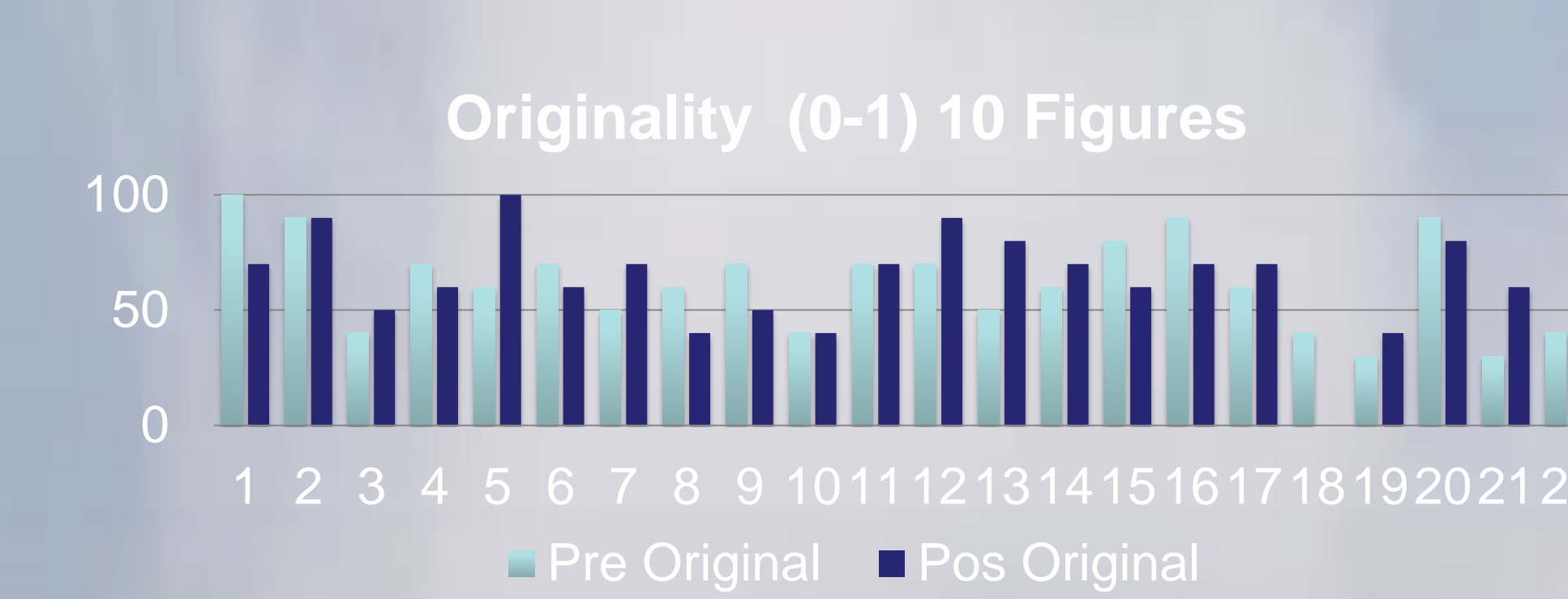
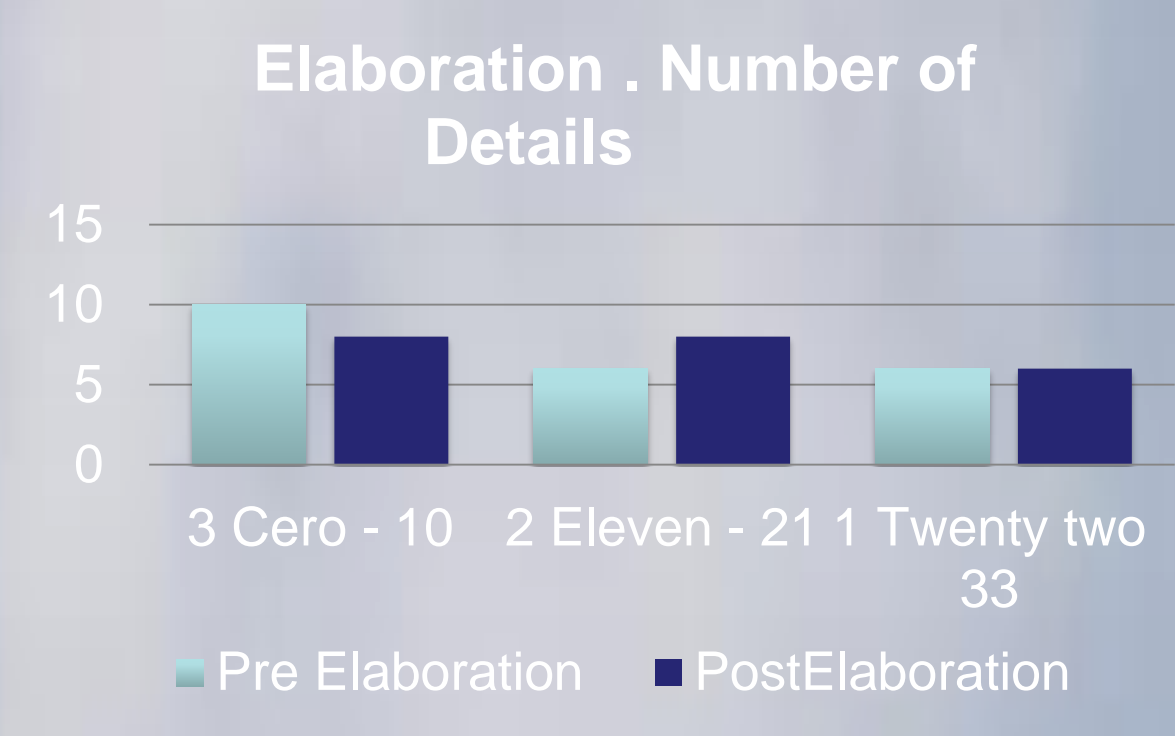
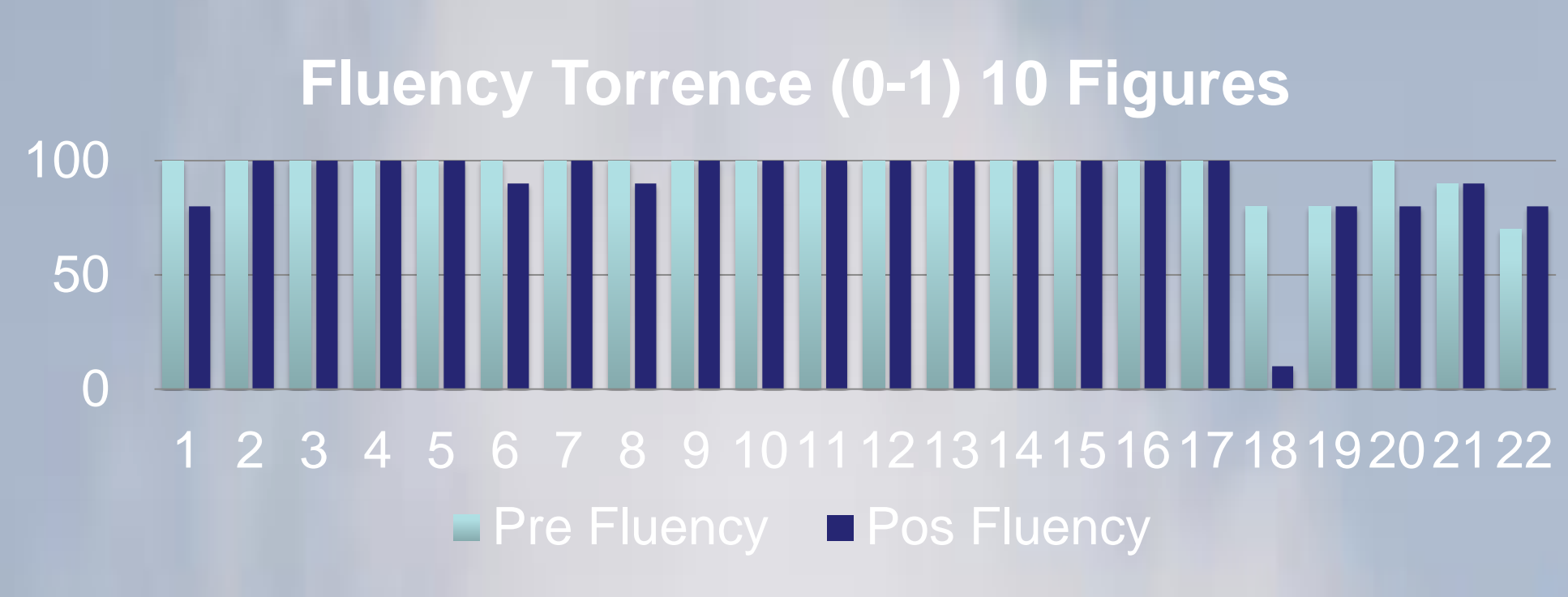
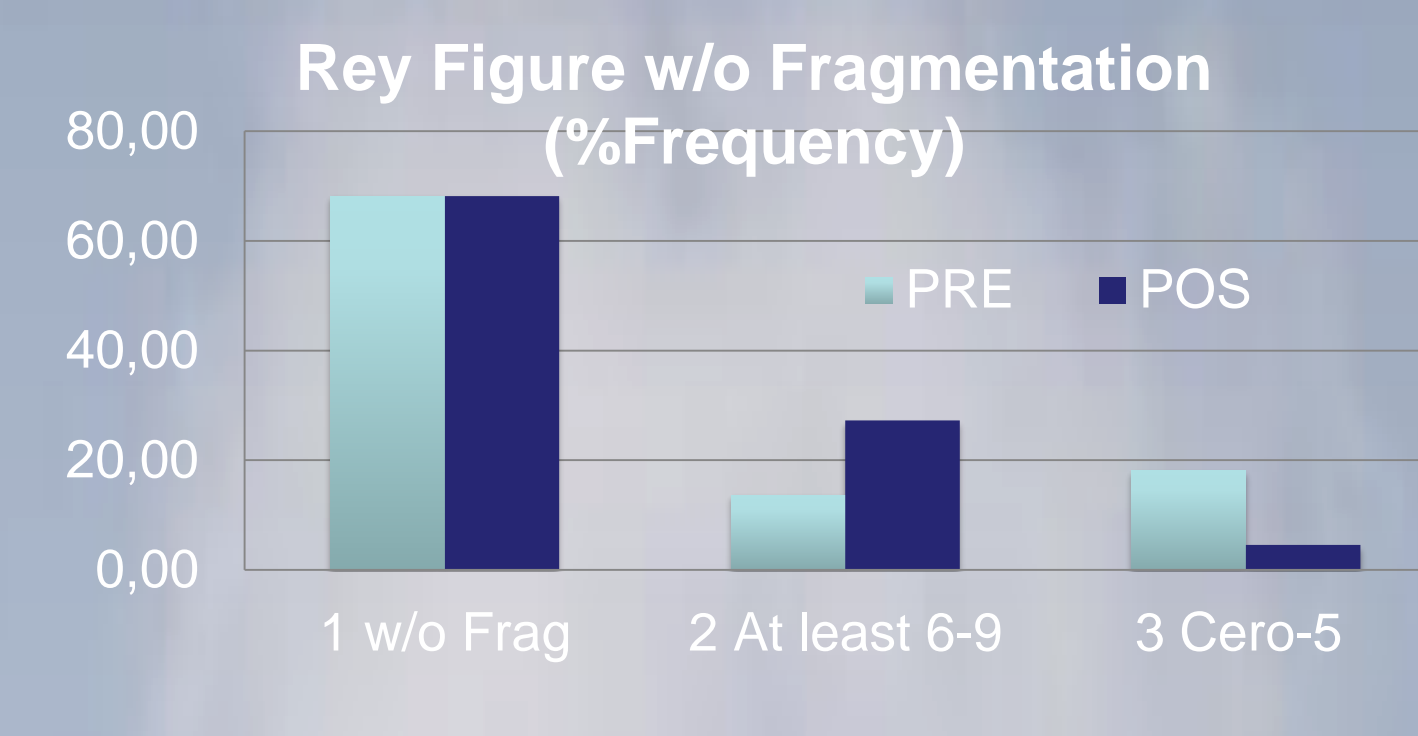
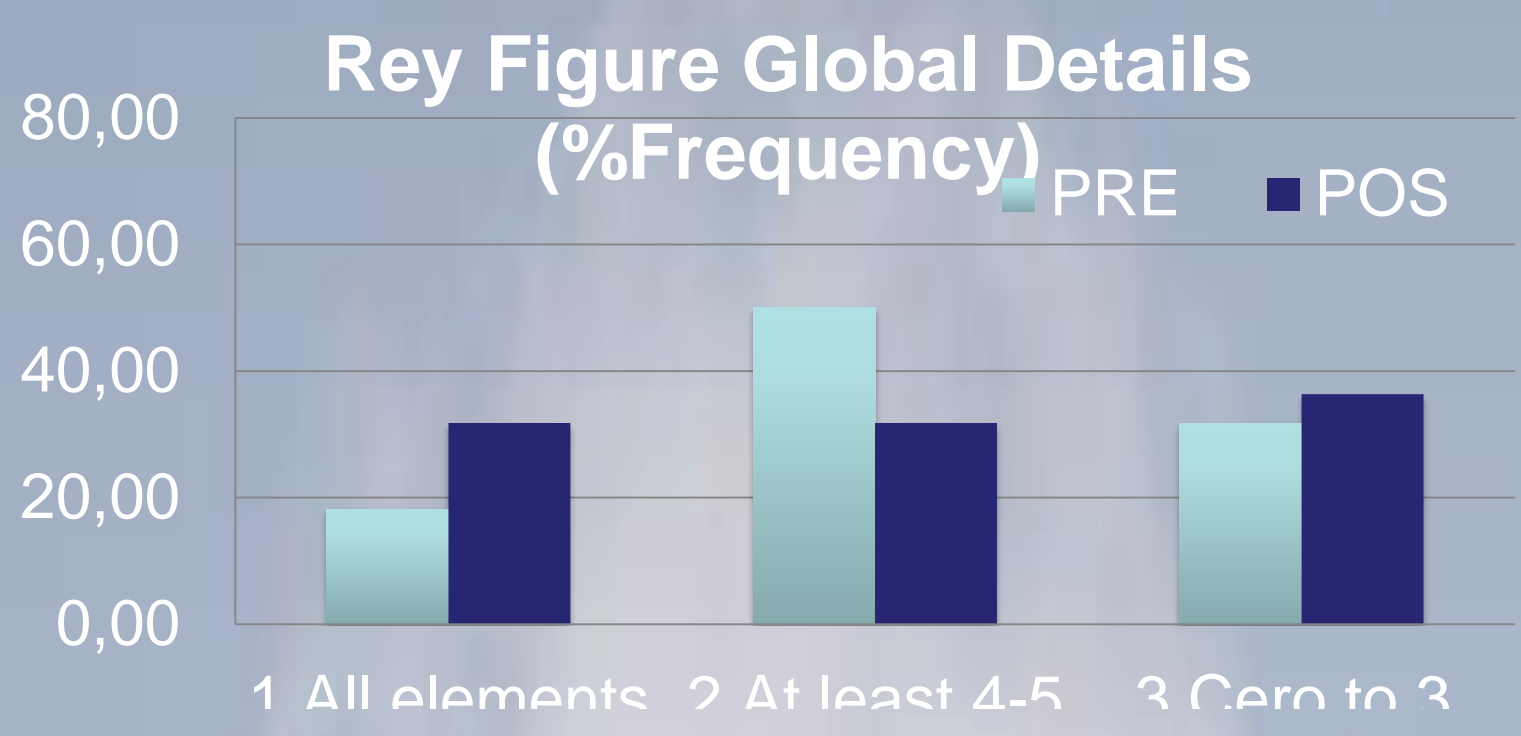
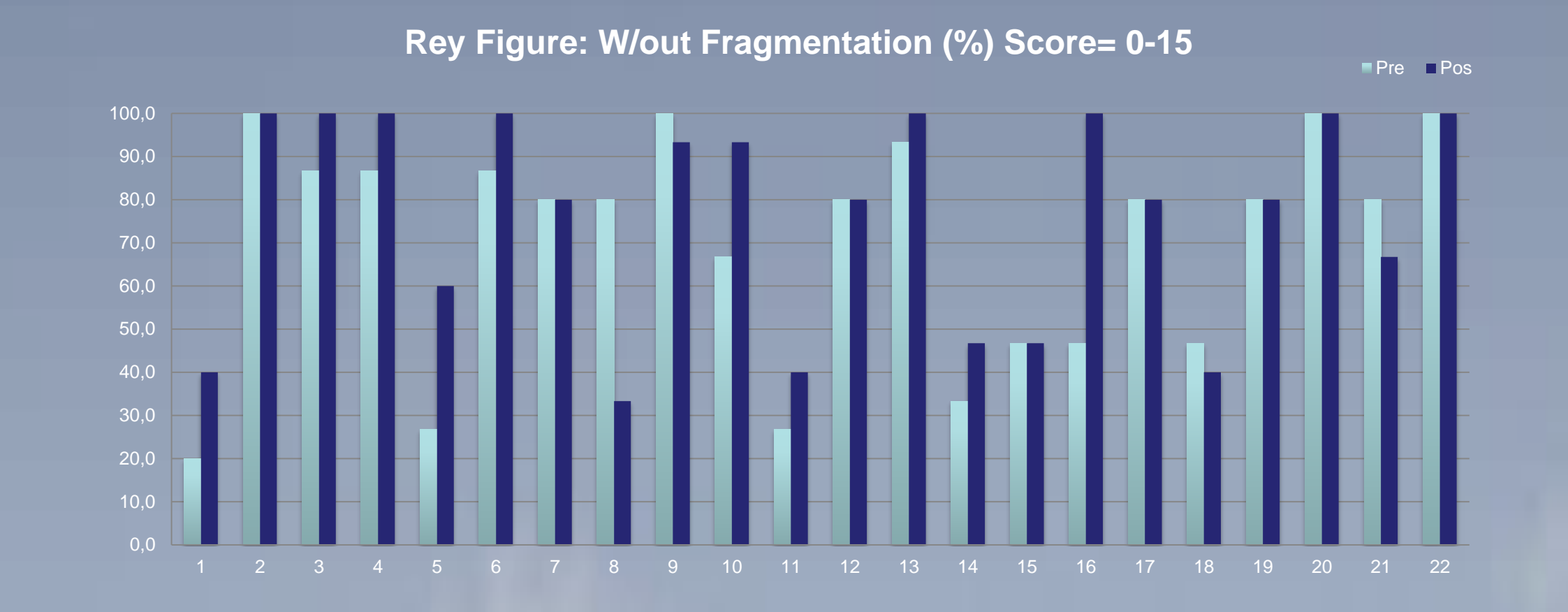
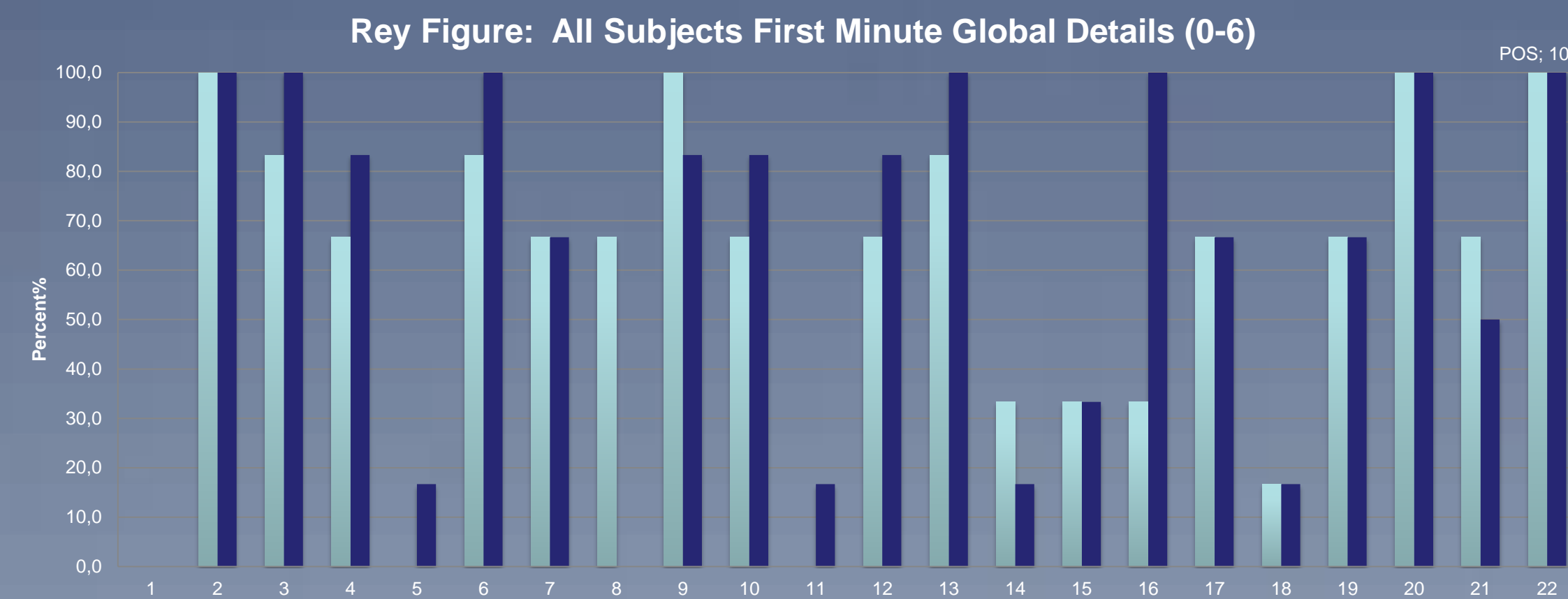
Results: Patient's age are between 14 and 29 years (Mean 19.04, SD 3.4). Fifty nine per cent had AN and 41% BN. Chronicity of ED symptoms between 4 months and 8 years. At intake 40.9% had MDD, 13.6% OCD and 22.7% of the patients had alcohol or drug abuse.

Table 2. Neuropsychological assessment.

Measure	Mean (CI 95%) Pre	Mean (CI 95%) Post	t	p
Central Coherence Global Index in ROFT	3.54 (2.66-4.42)	3.77 (2.7 - 4.7)	-0.75	0.22
Central Coherence Fractioned Index in ROFT	10.54 (8.7 - 12.3)	11.45 (9.7 - 12.1)	-1.49	0.075
Torrence Test:				
Fluidity	9.6 (0.2-10.01)	9.09 (8.2-9.9)	1.60	0.93
originality	6.18 (5.2 - 7)	6.22 (5.2 - 7.2)	-0.10	0.45
elaboration*	13.59 (9.4 - 17.7)	18.22 (9.5 - 14)	-2.67	0.001*
abstraction capacity	7.5 (4 - 10.9)	9.1 (5.3 - 13)	-1.03	0.31
Resistance to closure**	15.4 (13.4 - 17.4)	11.2 (9.3 - 13.1)	3.31	0.001**
Stroop Task: Inhibition	61.1 (57 - 65.3)	58.5 (55 - 62)	1.19	0.12

REFERENCES

Central Coherence Global Index: In ROFT, seven women (31.8%) showed weak central coherence at the beginning, that means scores under 3; 11 (50%) had intermediate scores between 4 and 5, and 4 (18.18%) patients had good central coherence with scores in 6. (See Figures 2 and 3): Neither ED type nor age or BMI were associated with weak central coherence (p=0.52; p=0.61; p=0.92 respectively). Weak Central Coherence was not found associated with major depression (p=0.57), OCD (p=0.21) or substance abuse (0.23).



CONCLUSIONS AND DISCUSSION

- We found that in this sample, Central coherence is not associated with ED type, age, weight, or comorbidities, as shown by Tchanturia and collaborators through their publications.
- Patients were able to train in visual-spatial memory using images of clouds and in general they had good set shifting by being able to see what others in the group were able to see. The ones that were more focused in the whole and had difficulties in figure-background task obtained low scores in CC and at least at the beginning produced less innovative responses.
- Scores in neuropsychological tests slightly improve in ROFT and partially in Torrence Test. However differences were not significant. It is necessary to increase the sample size in order to be able to observe changes and their maintenance over time.
- CC measured by global measures or by fragmented ones, are very similar, but the second way of doing it, showed the details of the information processing, so it is possible to see subtle differences (pre and post intervention). It seems to us that this way of analyzing the data could be useful to identify these subtle variations in the way they approach the task. The use of novelty strategies for the training in CRT could be a useful strategy in ED patients.
- Originality and innovation were better after the intervention. One can speculate that this training in novelty, could be a strategy that increase flexibility.
- Resistance to closure decreased, that means that they are more open, not needing to close. This is a good outcome.
- Set shifting difficulties were not found in this sample, with these tasks and measures.

"Exploring the neurocognitive signature of poor set-shifting in anorexia and bulimia nervosa". J Psychiatr Res. 2010, April 14; 10:Southgate L, Tchanturia K, Treasure J. (2005) Building a model of the aetiology of eating disorders by translating experimental neuroscience into clinical practice. Journal of Mental Health 14 (6) 553-566. 11 Southgate L, Tchanturia K, Treasure J. "Neuropsychological studies in eating disorders: a review". Nova Science publishers, 2009. 12.Tchanturia K, Campbell I, Morris R, Treasure J. Neuropsychological studies in Anorexia Nervosa. International Journal of Eating Disorders 37 (supplement): S72-S76. 2005. 13.Tchanturia K, Davies H, Campbell I. "Cognitive remediation therapy for patients with anorexia nervosa: preliminary findings". Annals of General Psychiatry 2007, 6:14-15.Tchanturia K, Davies H, Lopez C, Schmidt U, Treasure J, Wiles T. Neuropsychological task performance before and after cognitive remediation in anorexia nervosa: a pilot case-series. Psychol Med. 2008 Sep;38(9):1371-3. Epub 2008 Jun 26. 16. Tchanturia K, Whitney J, Treasure J. Can cognitive exercises help treat anorexia nervosa? A case study. Eat and Weight Disord Review 2007,11: 112-117.17.Treasure J, Tchanturia K, Schmidt U. (2005) Developing a model of the treatment for eating disorder: using neuroscience research to examine the how rather than the what of change. Counselling and Psychotherapy Research 5(3) 1-12. Blanki, D. " Con la cabeza en las nubes" Ed. Oceano,2010.