OXYTOCIN AND MENTAL HEALTH IN COLLEGE STUDENTS

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INTRODUCTION

Mental health is the result of a combination of many factors and has a great influence on multiple aspects of the life of young adults (World Health Organization, 2017). Some studies have found associations between oxytocin levels and quality of social relations and mental health disorders. Concern with students' mental health is increasing because most mental disorders peak during or slightly before college age (Macaskill, 2012). Of the mental disorders in these age groups, depression and anxiety disorders are the most frequent (Elovainio et al., 2015).

Oxytocin and temperament have been emphasized as individual determinants with a biological basis.

To our knowledge, there are no studies that relate oxytocin, oxytocin receptors, psychological disturbances and temperament. We aimed to study the association between plasma oxytocin levels and two polymorphisms (SNPs), in gene receptor, mental health and temperament disturbances in university students.

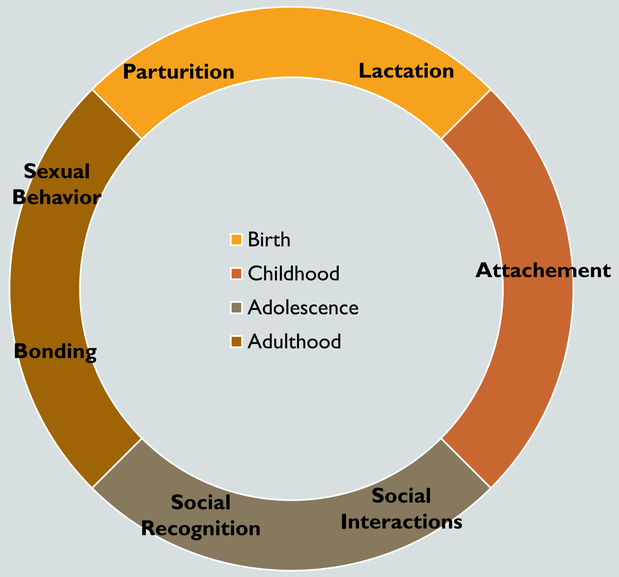

Fig. 1: A simple cycle of life illustrates some points at which oxytocin may affect behavior. *Adapted from:* Lee at al. (2010).

MATERIALS AND METHODS

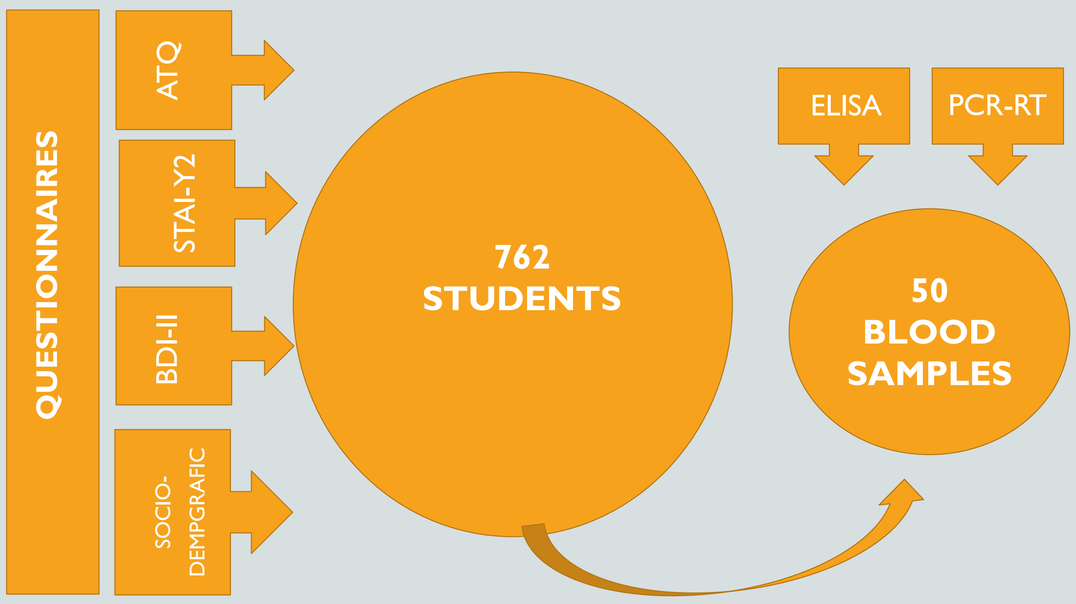

Fig.2.: A sample 762 students of the Instituto Politécnico de Lisboa participated. In the first part of our study we used Beck Depression (BDI), Adult Temperament (ATQ), Trait Anxiety (STAI-Y2), and a Demographic questionnaire. Students were randomly assigned to participate in the second part of the project, which consisted, in determining oxytocin levels according to the ELISA method, and the genetic polymorphisms of oxytocin receptor through real-time PCR.

CONCLUSION

The majority of individuals showed normal anxiety levels (68.4%), and no depression levels (61.8%), however girls scoring higher values in the latter. As for temperament, "orienting sensitivity dimension" showed higher expression among students (43.6%).

Oxytocin levels were tendentially lower in higher anxiety and depression levels with statistically significant differences between BDI-II grups.

No statistically significant differences were detected when compared to genetic polymorphisms, but a slight tendency was found for higher oxytocin levels in the group of heterozygotic individuals.

Regarding temperament results showed a significant positive association between oxytocin levels and the "effort control dimension" specially in "activation control" subdimension.

Reinforcing previous studies our findings showed the prevalence of associations between oxytocin levels and emotional and psychological variables. The enlargement of our sample will allow more consistent results.

RESULTS

The sample consisted mainly of female students (81.4%), non-scholarship holder (73.8%), medium socioeconomic level (63.9%) and no curricular units in arrears (68%).

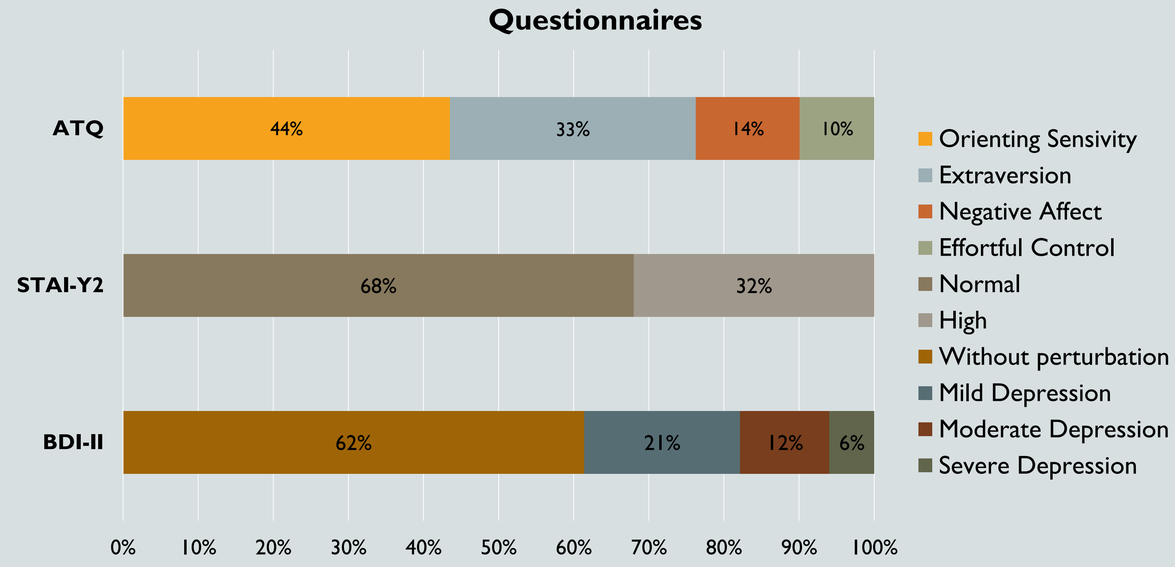

Table 1: Questionnaires results.

	STAI - Y2	BDI	TEMPERAMENT			
			Negative Affect	Effortful Control	Extraversion	Orienting Sensitivity
OXYTOCIN LEVELS CORRELATION	-0,156	-0,226	-0,115	**0,229**	0,114	-0,041

ACTIVATION CONTROL
0,439

Table 2: Correlation between Oxytocin plasmatic levels and BDI-II, STAI-Y2 scoring and temperament dimensions.

The highest levels of oxytocin were observed in heterozygotes (**GA**) in both SNPs. However, due to the small sample size and the high level of gender inequality, a greater number of elements would be required and more homogeneous in relation to gender in order to draw conclusions.

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