

SHORT TERM SCIENTIFIC MISSION (STSM) SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

Action number: 16207 European Network for Problematic Usage of the Internet

STSM title: ECOST-STSM-CA16207-030219-101908

STSM start and end date: 02/03/2019 to 10/02/2019

Grantee name: Artemisa Rocha Dores

PURPOSE OF THE STSM:

The interest in gambling as a behavioural addiction disorder has been increasing in the last few years. However, few empirical studies have focused on the neuropsychobiological correlates of pathological and problematic gambling/gaming, which would promote a deeper understanding of these disorders. Findings from previous studies deal mostly with behavioural or self-reported data and are often controversial, possibly due to the heterogeneous methods used. Among other aspects, these dimensions raise the methodological limitations in this area (e.g., assessment instruments, tasks and techniques used). The literature suggests that the near-miss effect (i.e., losing by little) recruits brain reward-related areas, including the ventral striatum, increasing the gambling behaviour supposedly by strengthening the illusion of control. Due to the importance that it seems to have on problematic and pathological gambling behaviour, the development of further knowledge about this effect is essential. This goal can be achieved through a transdisciplinary research approach, in which behavioural analysis is combined with data from less explored neuroscience techniques, namely electroencephalography (EEG) and neuroimaging (fMRI and fNIR). The main aim of my Post Doc project is to study the near-miss effect through a comprehensive experimental protocol involving the analysis of behavioural responses and their neurobiological correlates, through neurophysiological (EEG and Event-Related Potentials - ERP) and neuroimaging techniques [e.g., Functional Near Infrared Optical Brain Imaging (fNIR) or functional neuroimaging (fMRI)]. I expected to learn more about (neuro)psychology methods, in order to standardize protocols between the two research groups for the comparative analysis of results. I also expected to combine these methods with those of neuropsychophysiology.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

It were held meetings with Dr Mark Griffiths and his team, namely Dra Filipa Calado and Dr Halley Pontes. the work conducted with the different researchers will be described below:

Work conducted with Dr Mark Griffiths:

- 1) We worked on the final review of the paper "**Electrophysiological Correlates of the Near-Miss Effect in Pathological and Problematic Gambling**", which is now ready to submit.
- 2) A literature review about the near-miss effect on gambling and gaming was started. An abstract about this work was submitted to the Lisbon Addictions 2019: <http://www.lisbonaddictions.eu/lisbon-addictions>
- 3) The systematic literature review is ongoing and it will be send to Dr. Griffiths in March of 2019, for final review and subsequent submission to a journal.

4) I attended to a Dr Griffiths' class on slot-machine addictions / gambling addictions, in the University of Trent.

II. Work developed with Dr. Filipa Calado:

5) We started the preparation of a joint research project, about gambling (DSM-IV-MR-J; Fisher, Portuguese version Calado et al., 2016) and psychopathy, object of study of the Laboratory of Neuropsychophysiology, University of Porto.

6) We discussed the implementation of the gambling prevention program developed by Dra Filipa Calado in Portuguese high schools and the possibility of adapting this programme to first year college students. I'm currently studying the possibility of integrating this proposal in an ERAMUS + key action 2 application, in partnership with Spain, Estonia and Macedonia (two of which were members of the COST Action 16207).

III. Work developed with Dr Halley Pontes:

7) It was requested authorization to conduct a cross-cultural adaptation of the Internet Gaming Disorder Test (IGD-20 Test; Pontes et al., 2014) to Portuguese.

IV. Other tasks performed during this period, connected with the COST action 16207, but with other partners:

8) It was submitted the structured session / workshop: "Problematic Usage of Internet: From assessment to intervention", coordinated by Dr. Ornella Corazza to the Lisbon Addictions 2019 <http://www.lisbonaddictions.eu/lisbon-addictions-2019>. On this structured session it was proposed the presentation "Psychobiological Approach to Pathological and Problematic Gambling", by Artemisa Rocha Does and Fernando Barbosa.

9) It was done work on the application to an Erasmus + Joint Master, coordinated by Dr. Ornella Corazza.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

Paper ready to be submitted:

Electrophysiological Correlates of the Near-Miss Effect in Pathological and Problematic Gambling

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Abstract submitted to Lisbon Addictions 2019:

<http://www.lisbonaddictions.eu/lisbon-addictions>

Psychobiological Approach to Pathological and Problematic Gambling and Gaming: Systematic Literature Review

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Paper under execution:

Near-miss effect on gambling and gaming: a systematic literature review

FUTURE COLLABORATIONS (if applicable)

With Dr Mark Griffiths

To conclude and submit the systematic review paper;
To continue the study of the near-miss effect on pathological and problematic gamblers.

With Dra Filipa Calado

To conduct a joint research project about gambling (DSM-IV-MR-J; Fisher, Portuguese version of Calado et al., 2016) and psychopathy in a Portuguese sample.
To implement the gambling prevention programme of Dra Filipa Calado in Portuguese higher schools.

With Dr Halley Pontes

To conduct a cross-cultural adaptation of the Internet Gaming Disorder Test (IGD-20 Test; Pontes et al., 2014) to Portuguese;
To study the cross-validity of this instrument with another one of psychopathy, object of study of the Laboratory of Neuropsychophysiology of the University of Porto.