ABSTRACT

Emotional regulation strategies determine the way in which people feel, express and regulate their emotions. These regulation strategies affect all aspects of life. Currently, numerous scientific studies indicate the role that these regulation strategies play in the development and maintenance of adaptive and healthy behavior. On the other hand, deficiencies or deficits in emotional regulation are considered to be relevant factors in the origin and maintenance of numerous behavioral and emotional disorders.

There are different instruments that have been traditionally used to train and evaluate emotional regulation capabilities. They are usually based on subjective questionnaires. Although these questionnaires have proven to be useful, they present some limitations that make them little suitable for certain groups who are especially reluctant to be assessed, such as adolescents. Currently, new systems based on man-machine interfaces, such as virtual reality and physiological sensors, are starting to be used for training emotional regulation strategies.

The purpose of the research reported in this thesis is to address the issues related to the instruments used to train and evaluate the emotional regulation strategies. Specifically, the aim of this work is to study the combined use of virtual reality and serious games with non-invasive physiological monitoring in the emotional regulation field in adolescent population. For this reason, this document shows the results obtained from three studies, with three different virtual environments where participant were able to train different emotional regulation strategies while their cardiac signal or brain activation were recorded.

The aim of this thesis is to make a contribution to the emotional regulation field providing a new research framework through the use of new

technologies, such as virtual reality, and through more objective assessment instruments such as physiological signals.