DESCRIPTION FOR THE GENERAL PUBLIC

Repetitive Negative Thinking, often called rumination, is a natural way of regulating our emotions. Each of us dwell sometimes on the same subject thinking "Why does it always happen to me?", "What have I done to deserve that?". Usually, we have at our disposal a whole pattern of emotional regulation strategies and we chose the appropriate one depending on the given circumstances, our previous experience, or our mood. The lack of this flexibility of adjusting emotional regulation strategies to the ongoing situation, and, for example, the use of rumination by default, might lead to impaired emotional regulation, and consequently might increase the risk of mental disorders like depression or anxiety. Research on rumination suggests that this kind of repetitive thinking does not only increase the risk of depression, but it might also impair its efficient treatment and remission. Additionally, recent literature suggests that rumination is a "depression scar" because previously depressed individuals show higher level of rumination, even when fully remitted, compared with those who have never suffered from this mental disorder; and therefore they are more exposed to the relapse.

The aim of our research project is to develop a model of rumination functioning and to test what is the role of inhibition in this model as one of the main hypotheses explaining excessive rumination is inhibition impairment. Inhibition is an executive function. It enables to stop our automatic reactions, habits, routines (for example, we use inhibition when we find something very funny, but we cannot laugh out loud because of social circumstances). On the one hand, researchers working on rumination suggest that rumination might be a habit for certain persons, and inhibition impairment will cause a chronic rumination, as they will be unable to stop their repetitive thinking. On the other hand, the literature suggests that rumination itself might also cause a decrease of inhibition efficiency. Consequently, individuals using rumination are imprisoned in a kind of viscous circle: rumination causes inhibition impairment; and impaired inhibition does not enable to stop rumination.

Basic research exploring how inhibition is linked to rumination and emotional regulation is a necessary step before developing applied research addressing efficient rumination therapy for patients suffering from depression or whit high risk of developing this mental disorders. The therapy of depression risk factors, like rumination, seems to be crucial nowadays. According to World Health Organization, 27% of adults suffer from at least one mental disorder in 2016 (including 350mld individuals suffering from depression). Addressing this issue is essential not only from the public health point of view, but also because of economic and social consequences of mental disorders.

The present project is composed of two types of research: one study run in participant's everyday life using an application for smartphones (EMA study), and one laboratory study. Developing an application for mobile devices gives new possibilities for measuring psychological variables; we can test the relation between rumination, inhibition and emotional regulation at the given moment, but also verify how the relation between those three processes is evolving in participants and patients everyday life. This evolution seems to be a very important variable – the recent studies suggest that not only the frequency of rumination use, but also a dynamic relation with other variables (for example with what consistency rumination predicts lower emotional regulation) might influence depression risk.

The EMA study comprises 4 phases. In the first phase (7 days) participants (depressed/ anxious patients and healthy controls) will be asked to answer via their mobile phones, short questions about rumination and emotional regulation five times a day. Their inhibition will be also measured once a day using a task similar to a simple computer game. In the second phase (14 days) of the study, half of participants will play a game designed to train their inhibition and the other half will play a neutral, control game. The third phase (7 days) will be similar to the first one – we will assess rumination, emotional regulation and inhibition after the training. Finally, the same measures will be repeated one month later (phase 4; 7 days) in order to assess the long term consequences of the inhibition training. First experimental research on inhibition training is promising. It seems that training inhibition might reduce maladaptive use of rumination. However, the effect of inhibition training on rumination and emotional regulation has never been previously tested in clinical population of depressed patients nor in participants or patients everyday life.

The laboratory study in our research project will enable to control additional variables comparing to more ecological study using smartphone application. In this study we aim at testing what other factors might affect the relation between rumination, inhibition and emotional regulation. We will experimentally induce rumination or distraction (in the control group) and measure how this induction affects participants' inhibition efficiency. In this study we will test how different types of rumination, rumination content and depressive symptomatology affect inhibition efficiency.

Taken together, two studies planned in the present research project should enable to provide a better theoretical model of RNT functioning in relation to inhibition, but also contribute to general fundamental knowledge on the cognitive basis of depression and psychological disorders linked to impaired emotional regulation.