Discussion

Our current results identify certain comparison processes that may play a role in the evaluation of well-being in individuals with mental health complaints. Our presentation will focus on statistical differences between clinical and healthy participants and the extent to which participants changed their evaluation of their well-being after considering certain comparison standards. The implications of our findings for future research and clinical practice will be discussed.

Exploring a Cognitive Intervention Using Smartphones in the Lab: Experimental Psychopathology and Trauma

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Introduction

Experimental psychopathology gives us a way to study emotions and emotional memories. Intrusive memories of traumatic events are the hallmark feature of post-traumatic stress disorder. Effective and widely available interventions to prevent the development of intrusive memories after trauma are currently lacking. Recent research has shown that performing a brief cognitive intervention including the computer game 'Tetris' soon after trauma may reduce intrusive memories compared to performing other computer games or no task. This has been demonstrated both in the laboratory (James et al., 2015) and in the clinic (Iyadurai et al., 2018). However, so far the intervention has only been administered on computers or gaming devices. Could this intervention be delivered using people's own smartphone?

Method

We discuss an experimental study to explore the delivery of a brief cognitive intervention including a game ('Tetris') on people´s own smartphone soon after experimental trauma. Using a randomized controlled between-subject design, we compare the smartphone-based intervention to an active placebo group (listening to a podcast) which controls for general smartphone use, and to a passive control group (no task).

Results

The primary outcome measure is intrusive memories of the experimental trauma reported during the following week. We hypothesize that performing a simple cognitive intervention including 'Tetris' game play on one´s own smartphone can reduce intrusive memories during the following week compared to no task and an active control task.

Discussion

Even though the current study is only a first step toward further developing effective clinical interventions after trauma, it can reveal crucial information on how such interventions help to reduce the impact of intrusive memories (Iyadurai et al., in press) and how they can possibly be made available on a large scale in clinical settings in the future.

Mechanics of Contingency-Based Cognitive Bias Modification: Pre-Existing Bias Affects Potency of Active Training but Not Placebo Conditions

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Introduction

Cognitive Bias Modification (CBM) refers various computerized training protocols aimed at modifying individuals' automatic information processing patterns (cognitive biases). CBM protocols are commonly regarded as potential new treatments, targeting cognitive biases believed to be involved in anxiety, depression, substance abuse, disordered eating, pain perception, insomnia, etc. Designed to reward response tendencies associated with more desired information processing patterns trough repeated practice, CBM tasks tend to rely on a (hidden) contingency between stimulus valence and response rewards. In CBM studies, active training conditions are typically contrasted with control conditions lacking the contingency, often called 50/50 placebo. This report focusses on the wide-spread, and intuitive, notion that pre-existing bias may affect the contingency experienced by an individual engaging in a 50/50 placebo control condition thereby inadvertently rendering the intended placebo condition more potent.

Method

We employed probabilistic reasoning, presenting formulae to compute the probability for each type of trial to modify or consolidate an individuals initial response tendency. In addition, an interactive online visualization app has been made available.

Results

Contrary to the often-forwarded notion, pre-existing bias cannot increase the potency of a 50/50 placebo condition. In contrast, we arrived at the unforeseen conclusion that lack of pre-existing bias may render an active training condition functionally similar to a placebo condition.

Discussion

Our probabilistic arguments invite discussion of CBM's implicitness assumption, as well as the ever more clearly emerging problem of information processing biases not being reliably observed in clinical populations whereas our arguments suggest that pre-existing bias is necessary for CBM to function in the manner that it is devised to function.

Decision Making in Chronic Pain: The Role of Punishments and Rewards

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Introduction

Chronic pain (i.e., subjective feeling of pain in absence of bodily problems) is associated with major distress for individuals and high economic costs for the society. Understanding the nature of chronic pain could help in building better treatments, and as such reduce the individual distress and the societal costs. Here, we aim to gain more insight on chronic pain by investigating potential biases in decision making. Specifically, daily individuals either stick to decisions they have made before (e.g., choosing a restaurant where they have eaten before), or choose something different (e.g., go to a new restaurant). This so-called explore/exploit dilemma has been widely tested in the context of rewards (e.g., addiction literature). Alas, there is scarce research of explore/exploit dilemmas in the context of chronic pain.

Importantly, biases in explore/exploit decisions are to be expected given that often individuals with chronic pain symptomatology will stick to a dysfunctional behavior (e.g., kneeling rather than bending for avoiding 'breaking' their back) rather than explore alternative behaviors.

Method

Here, we present the results of three experiments in which we tested a novel experimental paradigm for testing explore/exploit dilemmas in pain. Participants had to freely move a joystick towards 4 different places on the screen (top, down, right, left). Importantly, each movement was associated with different probabilities of receiving a painful shock (Experiment 1), or a painful shock together with rewarding points (Experiment 2). We also tested whether individuals will update their preferences towards each movement after changing the associations between each movement and the probability of receiving a painful stimulus together with rewarding points (Experiment 3).

Results

For each experiment we fitted different computational models for describing participants' behaviour, as well as correlated the model parameters with a series of individual difference questionnaires (e.g., intolerance of uncertainty, fear of pain). We performed all our analysis using the programming language R and Stan. In the poster we present the model that described each experiment best, as well as the correlation between the parameters of the best-fitting model and the collected individual differences characteristics.

Discussion

Our results could help in better understanding decision-making in pain contexts, and also test how such decision-making biases may be different compared to other situations (e.g., in case of appetitive stimuli only). Such knowledge is particularly important towards the better development of treatment protocols for chronic pain.

Improving Imagery Rescripting Treatments: Comparing an Active vs. Passive Approach

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Introduction

Imagery Rescripting (ImRs) appears to be a promising treatment technique for PTSD. Emotion-inducing mental images that contribute to the onset and maintenance of PTSD are actively modified during ImRs to reduce associated negative emotions and other psychological symptoms. However, uniform guidelines on how to optimally implement ImRs currently do not exist. For example, there is an ongoing discussion whether therapists should stimulate patients to fulfill their needs within the new image themselves, or whether helpers may aid the patients in fulfilling their needs. The aim of this study was to compare these ImRs approaches within an analogue experimental setting (i.e., trauma film).

Method

After having watched an aversive film clip, one-hundred healthy participants were randomly assigned to either active ImRs (ImRs-A), passive ImRs (ImRs-P), imagery rehearsal (IRE), or no-intervention control (NIC). In ImRs-A, participants were instructed to rescript the film clip by imagining themselves to master the situation in the new script whereas participants in ImRs-P were encouraged to imagine helpers entering and mastering the situation.

Results

ImRs-P was experienced as less distressing, but ImRs-A led to a significantly stronger increase in positive affect than IRE. Though statistically not significant, inspection of the data insinuated that ImRs-A reduced intrusive memory development when compared to the other groups.

Discussion

Differences between the conditions on treatment outcome could not be observed, but the ImRs approaches differed on process variables. This emphasizes the need for more systematic research into variations of ImRs. Additional implications of the present findings will be discussed.

The Effect of Induced Emotional States on Event-Based Prospective Memory Performance

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Introduction

Prospective memory (PM) refers to the complex process in which cognitive resources such as memory and attention are mobilised to execute intended actions after a delay (Ellis & Kvavilashvili, 2000). Successful prospective remembering is an important functional skill that has been associated with health outcomes such as treatment adherence (Zogg, Woods, Sauceda, Wiebe, & Simoni, 2012), since attending appointments on time and adhering to medication schedules are examples of tasks that require intact PM. One of the main subtypes of PM tasks is event-based PM tasks, which are PM tasks that are executed following the recognition of an external event-based cue (Kvavilashvili & Ellis, 1996). An example of a common event-based PM task is passing on a phone message when seeing a colleague. There is evidence that the ability to perform event-based PM tasks is influenced by the experience of negative mood; however, there are mixed findings as to whether negative mood impairs (Knight, Brewer, Ball, DeWitt, & Marsh, 2015) or enhances (Rummel, Hepp, Klein, & Silberleitner, 2012) event-based PM performance. However, the effect of negative mood on information processing was implicated in both instances (Knight et al., 2015; Rummel et al., 2012). Consequently, a possible explanation for these conflicting findings might be differences in the processing requirements of the event-based PM task, since this factor has been theorised to influence the extent to which effortful monitoring is required for successful event-based PM performance (Scullin, McDaniel, & Shelton, 2013). Furthermore, although there is evidence that event-based PM performance is impaired among individuals who report high scores on measures of state anxiety (Harris & Cumming, 2003), there have been no studies published that explore the effect of acute state anxiety on event-based PM performance. This study aims to clarify the effect of negative mood on event-based PM as well as address the lack of studies exploring the effect of state anxiety on event-based PM. The research investigates the effect of induced anxiety, negative mood, positive mood, and neutral mood on an event-based PM task.

Method

Participants were randomly allocated to the anxiety, negative mood, positive mood, or neutral mood groups. Participants watched videos at two time-points to induce and maintain the corresponding emotional state. Instructions for the event-based PM task were provided and participants experienced a brief delay before this task could be executed in the course of an ongoing working memory task. Load on working memory during the ongoing task was manipulated experimentally to explore the interaction between emotional state and working memory load on event-based PM performance.