

ABSTRACT

Depression is one of the most common psychiatric disorders, affecting approximately 5% of society and leading to impaired social and work performance and the development of many comorbid conditions. According to cognitive models of depression, this psychiatric disorder is associated with difficulties in disengaging attention from negative content, reduced attention to positive information, and sustained attention to negative stimuli. These specific cognitive biases are called attentional biases. They occur in both depressed and at-risk-of-depression groups.

Mindfulness practice has been described as effective in reducing depressive symptoms and improving attentional processes in several health conditions, including depression and anxiety. It is defined as paying non-judgmental attention to the present moment. Mindfulness promotes decentring, self-compassion, and a reduction in self-focused attention which are described as features somehow opposite to depressive symptoms.

The aim of our work was to describe mutual relations between attention, depressive symptoms and mindfulness. We examined these relations in a complex way both in depressed and healthy participants at risk of developing depression. Since anxiety is often comorbid with depression, we controlled anxiety measures in each of the conducted studies.

First, we examined the relationship between depression, anxiety and mindfulness in students of different faculties using Polish versions of mindfulness questionnaires. Second, we examined perceptual biases in depression in the detection of emotional content in complex social stimuli that resembled the participants' everyday environment. We also examined the influence of the comorbidity of depression and anxiety on the nature of those biases. It was also our intention to investigate associations between perceptual biases and levels of mindfulness, but this was not possible in our sample due to a large drop-out rate. In addition, we examined the

effectiveness of mindfulness training on the change of self-descriptive symptoms of depression, anxiety trait, mindfulness trait, and advancement in mindfulness as well as on visual attention in a group of medical students at risk of developing depression.

Our work suggests the existence of a highly distinctive form of attentional bias in simultaneously more severely depressed and anxious patients that cannot be captured by examining biases for each disorder separately. We describe it as 'attentional sharpening', which involves a narrowing of the attentional field and selective and thorough detection of negative content. Thus, our research shows that to fully understand the perceptual biases in depression, it is essential to study it jointly with the usually co-occurring anxiety.

We also demonstrated a negative relationship between depression and anxiety and both naturally occurring mindfulness and mindfulness developed through mindfulness training. Our work also suggests that in groups at risk of depression, mindful observation may be an important determinant of changes in visual attention and that mindfulness training may lead to affective improvement in groups at risk of depression, even if it does not lead to changes in attention.

To our knowledge, our work is the first to address the issue of investigating changes in visual attention to complex emotional stimuli in a group at risk of depression participating in mindfulness training. Furthermore, it significantly complements the line of research on mindfulness in groups at risk of depression, such as medical students, by combining self-descriptive measures with eye-tracking. Finally, it is one of the first attempts in Poland to measure the relationship between anxiety and depression symptoms and mindfulness using Polish versions of mindfulness questionnaires.