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The Development of Anxiety Sensitivity Interventions from Manual to Computerized

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Abstract: Excessive anxiety is something that could affect an individual's behavior if it is not treated well. Excessive anxiety could develop into more serious anxiety disorders that affect attitudes and behavior in the social environment. The purpose of this literature study is to examine the effectiveness of various interventions in reducing anxiety sensitivity by conducting a review of articles related to interventions to reduce anxiety sensitivity. The article review was conducted on 18 international journals between 2008 and 2018 in accordance with the selection criteria. The analysis in this journal review covers the effectiveness of interventions, strengths, and weaknesses of the research methods used. The various interventions used show that reducing anxiety sensitivity using cognitive behavioral therapy (CBT) interventions is still a good option to reduce anxiety sensitivity, followed by other interventions, namely cognitive bias modification (CBM). Based on research subjects, interventions with individual subjects are more widely used than interventions with group subjects. The discussions about the results of the review can be used as recommendations for further research.

Keywords: anxiety sensitivity, cognitive behavior therapy, cognitive bias modification

Introduction

In the current digital age, there are developments in various therapies from manual processes to computer-based programs (online), from how to diagnose to the treatment process. To see the development of therapy in reducing anxiety sensitivity, a literature review has been carried out over the past ten years. Anxiety sensitivity cannot be seen as a small problem if it occurs to individuals, because it will cause future problems.

The tendency to think excessively negative about the effects of physiological and social sensations that occur as a dangerous thing is called anxiety sensitivity (Taylor, 1998). Excessive anxiety about something that may not necessarily happen to someone will make him/her feel more anxious. Not only does it involve a misunderstanding of bodily sensations, but it can also occur due to the results of the construction of cognitive experiences and learning from observations of others related to anxiety symptoms. Anxiety sensitivity is shown by confidence in the consequences that occur when experiencing anxiety (Reiss, 1991). Individuals with high anxiety sensitivity believe that physiological effects that occur in him/her, such as heart beating fast and dizzy head, will continue to become a heart attack. This belief makes the individual experience excessive anxiety. Anxiety sensitivity is one of the causes that contribute to the post-development of pathological disorders (Stewart & Kushner, 2001). Individuals with anxiety sensitivity can exacerbate pathological disorders that they have due to excessive anxiety. Anxiety sensitivity is associated with causes of anxiety, development, and maintenance of anxiety problems (Keough & Schmidt, 2012).

Individuals with high anxiety sensitivity can worsen their disorder and cause other pathological disorders. Anxiety sensitivity is one of the factors of depression, social anxiety, and PTSD (Allan, Capron, Raines, & Schmidt, 2014; Bernstein et al., 2005; Farris et al., 2015; Knapp, Blumenthal, Mischel, Badour, & Leen-Feldner, 2015; Mohammadkhani, Pourshahbaz, & Kami, 2016; Schmidt, Capron, Raines, & Allan, 2014). Individuals with disorders focus more on the symptoms shown because they have bad experiences or learn from the experiences of others. The way an individual reacts to physical, behavioral, and cognitive symptoms that arise makes anxiety worse (Kashdan, Zvolensky, & McLeish, 2008). Anxiety sensitivity and pathological disorders such as PTSD, depression or other disorders are considered to be the cause of each other. High anxiety sensitivity is affected by pathological disorders and vice versa. Anxiety sensitivity cannot be considered a mild problem until it is followed up. By reducing anxiety sensitivity, it can also reduce symptoms of other disorders in individuals (Schmidt et al., 2014). Therefore, by doing one intervention can improve two things at once.

From the above explanation, anxiety sensitivity is a factor that causes anxiety both directly and indirectly. Anxiety sensitivity is a premorbid factor for the occurrence of anxiety disorders, so it is important to conduct therapy to reduce anxiety sensitivity. Therefore, this review aims to illustrate the trends of 18 studies published in international journals about interventions to reduce anxiety sensitivity. In general, the level of anxiety sensitivity of research subjects was measured using an ASI-III scale with a score of 20 and above. From the journals, it was concluded that to reduce anxiety sensitivity effectively could apply interventions using cognitive behavior therapy (CBT), Cognitive Bias Modification (CBM), and Cognitive Anxiety Sensitivity Treatment (CAST).

Cognitive Behavior Therapy (CBT) Intervention

Of the 18 research reviewed, there were 8 studies using CBT interventions, namely research from Boswell et al., 2013; Feinstein et al., 2018; Holtz et al., 2018; Keough & Schmidt, 2012; Korte & Schmidt, 2015; Olthuis et al., 2015; Sahranavard et al., 2018; Worden et al., 2015**.** The studies have in common was the use of the same therapeutic procedure, which emphasizes psychoeducation and interoceptive exposure in the intervention. In the literature, anxiety sensitivity is mostly accompanied by other disorders. Research by Worden et al. (2015) revealed that CBT interventions used were effective in reducing anxiety sensitivity while reducing the drug use in patients with 6 short sessions conducted during three months of intervention.

As with other CBT literature, general sessions on each CBT intervention to reduce anxiety sensitivity include (1) psychoeducation about what anxiety sensitivity, including understanding, causes and methods, and accompanied by psychoeducation for other psychopathological disorders that often occur together with anxiety sensitivity, such as anxiety, panic, and other disorders, (2) interactive exposure, including the provision of physical stimuli such as increased heart rate, inducing dizziness, and deliberate hyperventilation to cause symptoms that are almost the same as situations when symptoms of anxiety sensitivity occur. Interoceptive exposure (IE) is considered to be an important component of reducing AS and involves repeated exposure to feared bodily sensations with the aim of familiarizing one's self with the fear of the sensations (Schmidt & Trakowski, 2004). The use of interactive exposure varies according to the wishes of researchers. In a study by Olthuis et al. (2015), they conducted an Interoceptive exposure by asking study subjects to run for 10 minutes so that it causes physiological effects of palpitations which is one of the symptoms of anxiety sensitivity. Another research by Holtz et al. (2018) which increases respiratory volume beyond the capacity of study subjects by reducing the pressure that causes somatic symptoms such as dizziness. (3) identifying negative symptoms of anxiety symptoms along with cognitive distortions that occur, as well as breathing exercises when showing symptoms. CBT can also be used for non-clinical research subjects such as research by Sahranavard et al. (2018) with student research subjects to deal with stress management. CBT with group settings has also proven effective in reducing anxiety sensitivity in this study.

Cognitive Bias Modification (CBM) Intervention

Research with the method of cognitive bias modification (CBM) conducted by Capron et al., 2017; Capron & Schmidt, 2016; Clerkin et al., 2015; MacDonald et al., 2013. CBM is not designed to change the way people respond to thoughts, but rather directly changes the cognitive processes that underlie these thoughts. CBM involves the presence of ambiguous scenarios to train individuals to make threatening and non-threatening interpretations so that they are accustomed to and understand that information can be interpreted differently (non-threatening information). One of the studies discussing CBM is research by Capron and Schmidt (2016) that uses ambiguous short sentences that can make the research subject feel threatened, while reading the sentence the researcher gives "right" or "wrong" feedback on the response to the sentence that, and this intervention can have an effect on reducing anxiety sensitivity. But in another study by Clerkin et al. (2015) who used the same intervention showed different results, that the control group and the intervention group did not show a significant difference in reducing anxiety sensitivity. this is inversely proportional to other studies that both use CBM as a research method. This is assumed to occur because the CBM task does not make any significant interpretation changes, and lack of supervision of the control group that uses pharmacological drugs to help overcome the symptoms of anxiety sensitivity experienced. Teachman (2005) found that participants with high AS showed more negative interpretive bias about changes in physical sensation compared to individuals with low AS levels.

Cognitive Anxiety Sensitivity Treatment (CAST) Intervention

Research with CAST is conducted by Norr et al., 2018; Norr, Gibby, Fuller, et al., 2017; Norr, Gibby, & Schmidt, 2017; Schmidt et al., 2014; Short et al., 2017; Short, Fuller, Norr, & Schmidt, 2016**.** Over the past few years interventions to reduce anxiety sensitivity can be done using computerization without the researcher directly participating in the intervention. CAST is a fully computerized intervention consisting of two components: psychoeducation and interoceptive exposure. CATS in research by Schmidt et al. (2014) are not only computerized but also using audio. In the stages of the session not much different from the intervention without using computerization, the psychoeducation section provides corrective information about the nature of symptoms caused by stress and anxiety. A research by Norr et al. (2017) psychoeducation about anxiety symptoms until interoceptive exposure is guided using computer software, and the results show that this can reduce anxiety sensitivity in research subjects and in the use of CATS, psychoeducation alone can reduce anxiety sensitivity, even if not using other intervention session.
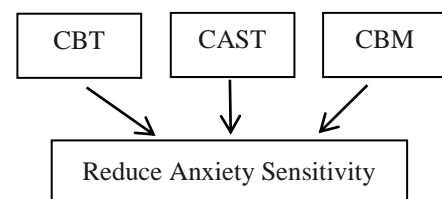

Figure 1. Intervention to reduce sensitivity

Reduce anxiety sensitivity in various interventions

An intervention that is still effective in reducing anxiety sensitivity is CBT. Starting with a mandatory session on CBT is Psychoeducation and interceptive exposure, two things are required. Psychoeducation is carried out in the initial sessions discussing the symptoms of the disorder and also the signs of anxiety and anxiety sensitivity symptoms in the participants. Interceptive exposure is done in the middle of the intervention to understand the physiological symptoms that arise as a sign of anxiety sensitivity. The training given in the interoceptive session produces symptoms of obvious anxiety (Schmidt & Trakowski, 2004). Interoceptive exposure can be in the form of loud noises that cause the heart to beat faster, the gas that makes breathing tight or smells good. Participants are asked to assess the physiological sensations felt about negative distortions to practice replacing these cognitive distortions with more adaptive thought patterns. This session is done repeatedly until participants feel accustomed to.

The cognitive modification procedure is designed to look at the causal relationship between cognitive bias and emotional vulnerability by making changes in cognitive bias through repetitive exercise tasks. Cognitive bias modification refers to procedures that aim to directly change automatic cognitive processes, such as attention and interpretation to the development and maintenance of thoughts that lead to psychopathology (MacLeod & Mathews, 2012). In the bias of interpretation, individuals with anxiety tend to interpret negatively or feel threatened by the ambiguous information provided. So in CBM, it involves the presence of ambiguous scenarios to train individuals to make threatening and non-threatening interpretations so that they are accustomed to and understand that information can be interpreted differently (non-threatening information). Cognitive bias modification (CBM) is used as a variety, some studies combine computerization and manuals and some other studies use manuals.

Interventions using CAST are considered to be more efficient in time, energy, and cost. Interventions to reduce anxiety sensitivity, cognitive behavior therapy, and other interventions mostly use a computerized system. CAST was developed to target US cognitive subfactors because of its relationship with suicidal ideation. Yet, with the development of CAST, it has shown a significant result in reducing Anxiety Sensitivity and all of its subfactors (physical, psychological and social) (Schmidt et al., 2014). Decreased anxiety sensitivity due to CAST has been proven to reduce symptoms of anxiety, depression, insomnia, suicide and PTSD.

This technology-based intervention has also proven useful in the prevention paradigm by targeting individuals who are at high risk for developing pathology of anxiety (Norr, Gibby, & Schmidt, 2017). One technology-based intervention that has proven to be effective in reducing mood and anxiety symptoms is Cognitive Anxiety Sensitivity Treatment (Schmidt et al., 2014). Computerized intervention is a development for therapy, with positive effects in the form of being able to save costs, time of therapy, and easy to use wherever and be able to reach more people who need therapy. From the entire literature reviewed, only one has a group therapy setting, namely research by Sahranavard et al., (2018) with the research title "The effectiveness of stress-management-based cognitive-behavioral treatments on anxiety sensitivity, positive and negative effect and hope." This intervention uses non-clinical subjects or subjects that do not have any disorders as subjects in other studies. In this study, Anxiety sensitivity can be reduced by creating pleasant active communication with the environment, enthusiastic, and hopeful. People with high positive influence are energetic and passionate people who enjoy life. In contrast, those who have high negative anxiety are worried and lack of energy which will affect one's physical health (Sahranavard et al., 2018). Positive effects strengthen the immune system and counteract the negative effects.

Conclusion

The reviewed journals conducted on the development of therapy in the digital era from 2008 to 2018 has found the effectiveness of CBT, CAST, and CBM to reduce anxiety sensitivity using. The use of manual methods has begun to be replaced by a computerized system with the application of CAST which is more effective in saving time and energy.

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