A Study on the Correlation between College Students' Social Anxiety and Mental Health Education Intervention

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Abstract: *Social anxiety in college students can be caused by paying too much attention to threat cues, recursive reinforcement of negative self-perceptions and fear of evaluation, as well as a catalytic effect of social comparison. The three parts together form the structure of cognitive bias operation. Cognitive restructuring training will be added to the course of mental health education to correct maladaptive beliefs; an exposure hierarchy will be developed to reduce the extinction gradient of avoidance behaviour, and acceptance-and-commitment techniques will be employed to improve the conditional effectiveness of group interaction situations. It has also been noted that both the extent of social anxiety and the force of intervention vary. If a person does not know that they have not learned something, they will be less eager to ask for help, and if such help is offered too late, it will be difficult to solve the problem in time. Clarification of the three sets of correlative mechanisms will provide a theoretical basis for the development of stratified and time-sensitive intervention strategies.*

Keywords: *College Students' Social Anxiety; Mental Health Education Intervention; Cognitive Processing Bias; Metacognitive Monitoring; Intervention Timing*

Introduction

There has been an increase in sensitivity to social danger; second, there is recursive reinforcement of a negative sense of self; and third, due to social comparison, the anxious mood has been prolonged. Most of the intervention studies at present have focused on verifying the effect of a single method and have not investigated how the cognitive traits of social anxiety are related to the paths of educational intervention at a mechanistic level. The three ways ACT is applied in this paper are to change the intensity of the intervention, predict sensitivity and organise blockades, and all of them are based on the combination of attentional bias, metacognitive monitoring, exposure gradient modulation and activation conditions of acceptance-commitment therapy. Based on the micro-level cognitive operations mentioned above, we can avoid a mismatch between the type of intervention and the reasons for anxiety and thus improve the targeted effectiveness of educational interventions. Based on the above, this paper will first present cognitive processing biases, then put forward a theoretical framework for mental health education intervention, show an analysis of the correlative mechanism, and finally offer a theoretical basis for targeted educational intervention on social anxiety in college students.

1. Cognitive Processing Biases of Social Anxiety and Susceptibility in the College Student Population

1.1 Attentional Vigilance Mechanism for Threat Cues in Social Situations

College students are more likely to notice any bad signs in their environment, such as changes in other people's faces, tone of voice and body language. If people do not know how to recognise a social cue, they will not be aware of it and will be unable to learn bad habits by observation. According to the study of eye tracking, people with high social anxiety have a smaller difference in gaze duration to neutral and angry faces when in a group; thus, they are more sensitive to potential evaluative cues. It is in line with the automatic activation of the amygdala in the face of social danger. Threatening faces can cause an increase in the late positive potential at the level of inconscience in EEG.

Sustained attention is required for a long time, and college students are unable to concentrate on

integrating the information they have gathered from social interaction. If people focus too much on the wrong kind of danger signal, they will not learn how to behave by observing others and other sources. Therefore, there has been an imbalance in the distribution of attention resources; that is to say, although vigilance is not inherently anxiety-inducing, prolonged attention to threat signals can increase one's own sense of unease. Reduced attention and consciousness are related to poor performance in other executive functions. College students with poor impulse control cannot ignore danger signs and are thus more likely to feel threatened in social situations[1].

1.2 The Recursive Reinforcement Pathway of Negative Self-Representation and Fear of Evaluation

Negative self-representation is a person's stable negative cognitive system about their own social skills, attractiveness and acceptance, and it generally takes the form of conditioned self-schemas. College students are changing their own lives and are now very conscious of what others think of them. Therefore, the origin of negative self-perception is more likely to be micro-feedback from society. After activation, this representation will cause a person to interpret the behaviour of others negatively; for example, they may believe that a polite smile is a joke. Based on the above analysis, there is a fear of evaluation; that is to say, one is anxious about what others think of one. Fear of evaluation leads to the development of safe behaviour; thus, one may avoid eye contact and speak less, and others are likely to perceive this as aloofness or a lack of self-confidence, which in turn results in negative feedback.

Negative comments increase the original sense of negativity and are thus reduced. At this time in the recursion, college students begin to believe that social failure is due to their own qualities and fail to consider external factors. Neuroimaging has shown that when people with high levels of social anxiety expect negative evaluation from others, there is increased activity in the anterior cingulate cortex and the insula; these areas are associated with pain and guilt. Recursive reinforcement is not only at the level of cognition but also takes the form of an overly sensitive behavioural inhibition system; thus, people are less motivated to explore social situations. Finally, negative self-representation is no longer limited to a particular situation; rather, it has become a general way of thinking that can easily lead to a fear of evaluation.

1.3 The Catalytic Effect of College Students' Social Comparison Tendency on the Persistence of Anxiety

College students are at a time when they have many social relationships and no fixed role norms, so their desire to be judged by others is stronger. College students are often comparing themselves with their classmates in the areas of academic achievement, physical appearance and popularity. Compared with the general public, the reference groups that college students are exposed to are more homogeneous and visible in daily life, so the comparison results are more likely to cause self-deprecation. People with social anxiety tend to focus only on the deficiencies of their own circumstances in comparisons and overestimate the good qualities of others' achievements. Asynchronous comparative processing can give us a sense of wonder about our own social behaviour and extend the initial brief anxiety response to comparison for several hours or even days after the comparison.

The catalytic effect of inclination for social comparison is not that it directly causes anxiety, but rather that it interferes with the normal extinction process of the cognitive intervention and thus leads to this result. A person will have a short-lived rise in self-efficacy after a successful social interaction, but this will soon be reduced by upward social comparison. Relative deprivation leads people to compare themselves with others, feel bad, trigger a negative memory system, and at this time, past failures in social situations may be recalled and magnified by the new negative emotions. Given that social media is being used, the selected glimpses of others' lives have further distorted the basis for comparison and changed the criteria college students use to judge their own social life. Finally, due to the above catalytic effect, the level of anxiety does not decrease with an increase in the number of exposures; that is to say, the desired effect of exposure therapy has been blocked by an update in self-evaluation resulting from social comparison[2].

2. Theoretical Basis and Implementation Plan for Mental Health Education Intervention

2.1 The Logic of Correcting Maladaptive Beliefs Through Cognitive Restructuring Training

Maladaptive beliefs of college students with social anxiety include catastrophic expectations of social situations and low confidence in coping ability. Cognitive restructuring training can help people change their original beliefs about something after learning how strong the evidence for the negative belief actually is. First, one needs to seek a counterexample in the process of revising beliefs; that is, one hopes that social feedback will not confirm the negative expectations currently held. For instance, when a student thinks, "I will definitely be laughed at when I speak", training in restructuring can help them recall how many times in the past they did not get laughed at during speaking and learn that this expectation does not match reality. The correction logic is to strengthen metacognitive awareness; that is to stop being "lost in the content of the belief" and begin "observing the formation process of the belief"[3].

In order to continue the correction logic, we need to build a system that can generate and evaluate other reasons. As a result of their studies, college students have been able to put forward many possible reasons for the same social phenomenon and, based on the likelihood of these reasons, compare them. Therefore, we will not focus too much on one bad reason and may also find related background knowledge that has gone unnoticed. Cognitive restructuring can reduce the strength of maladaptive beliefs and change how they are applied in daily life, but it does not get rid of these beliefs completely. When a person can keep their original beliefs and has an alternative explanation, and is able to recall the more suitable one in different circumstances, the cognitive basis of anxiety is changed. The correction logic does not need to address the actual problems in society; instead, linguistic and logical operations can be used to achieve cognitive immunity and are suitable for educational environments where direct experience is not possible.

2.2 Modulation of the Extinction Gradient for Avoidance Behavior via Design of Exposure Hierarchy

Avoidance behaviour is a type of operant behaviour that maintains the social anxiety of college students, and extinction will be carried out in stages according to a graded-exposure hierarchy. One's own sense of anxiety in a social situation is determined by how dangerous one believes that situation is; for example, meeting an old friend is considered to have a low risk, but giving a speech in front of a large group is considered high risk. At each level of exposure, one should endure the discomfort and remain in that environment until the original will to avoid it is gone. The two ways to achieve the modulation of the extinction gradient are to optimise the step size between levels and to control the dwell time in a level. If the step size is too large, we will not be able to break the old habits; if it is too small, we will lose the motivation. Both will be reduced in the degree of extinction. Based on the above research, changing only the gradient step size can cause the extinction of the avoidance behaviour, and this extinction effect is generally applicable in all situations.

To reduce the extinction gradient, one can also accumulate inhibitory learning at all levels of exposure. When college students have had some contact with something and the expected catastrophic consequences do not occur, a new safety memory is formed, and the original fear association with that social situation is reduced. There is still the original fear association, but now a competing memory trace has been formed at all levels of the hierarchy. As people have grown more accustomed to it nowadays, the retrieval advantage of the safety memory has decreased, and thus it is difficult to trigger a non-fear response in high-threat situations. The Design of the exposure hierarchy should not be extinction; that is to say, at the level of variables, training can be used to prevent spontaneous recovery. The first idea of gradient modulation is to change the operant condition for avoidance behaviour into a reinforcement condition for approach behaviour, so that college students learn to "tolerate discomfort and then obtain social feedback information" instead of "avoid discomfort"[4].

2.3 Activation Conditions of Acceptance and Commitment Therapy in Group Interaction Settings

The extent to which Acceptance and Commitment Therapy can reduce the social anxiety of college students differs according to the level of activation of the group activity. The first is that the self-disclosures of the group members are symmetrical. That is to say, when a person learns that other people have also had such experiences, the cognitive defusion function of acceptance and commitment therapy is more easily activated. When there is symmetry, college students are more likely to believe

that their negative self-judgments are "observable contents" rather than "undeniable facts". Several perspectives are presented in a small group, and people can obtain different understandings of the same social phenomenon from various members of the group at the same time; this increase in psychological flexibility provides a foundation for the effectiveness of acceptance techniques. If not symmetrical disclosure is used, then the reception instructions will be regarded as ineffective cognitive preaching.

The second kind of activation condition is value-clarification conflict in a group. Acceptance and Commitment Therapy hopes that people will be able to distinguish between "avoidance goals" and "value-oriented goals", and the immediate feedback they receive from others in a group can create the cognitive dissonance necessary for this distinction. For example, a college student may say that they want to make friends but never join a group discussion; if other students do not judge, the student will not know that their actual behaviour does not align with their values. This consciousness is difficult to make people aware of through individual instruction, so we will rely on the effect of group interaction. Organised groups will have fixed times for activities and clear rules on who speaks; thus, more people will be willing to join in the group study. When the above activation conditions are met, the basic mechanisms of acceptance and commitment therapy can be used to reduce the maintenance factors of social anxiety in college students; that is to say, cognitive fusion can be broken and committed action can be taken.

3. Analysis of Correlative Mechanisms and the Placement of Educational Intervention Targets

3.1 The Dynamic Adaptive Relationship between the Severity of Social Anxiety and the Strength of Intervention

The distribution of the severity of social anxiety among college students is continuous; it can be in the range of subclinical symptoms or meet the criteria for a clinical diagnosis, so different individuals will need different levels of support based on this distribution. Most of the people with mild social anxiety avoid situations and have not formed strong cognitive schemas yet. Light metacognitive guidance or basic cognitive restructuring can be used to reduce the symptoms in these people. Moderate- to severe cases have cross-situational functional impairment, are more likely to show automatic activation of negative self-representations, and often engage in safety behaviours. These people need to communicate with the service frequently and coordinate all the technical modules. Research has shown that if the strength of the intervention is too low compared with the current level of symptoms, people may believe that the therapy is not effective and develop negative beliefs about the effectiveness of treatment. Conversely, if it is too serious, people will be too defensive and fail to learn properly from the material[5].

In order to build a close and open relationship, one should know how anxious the other person is at different times and not be fixed on a single point of reference. College students' social anxiety is influenced by changes in the academic year, the concentration of people in a particular area, and so on, and it also changes over time. Change the strength of the next intervention according to the results of the previous one. For example, if there is no change in symptoms after the person has completed the low-intensity cognitive training, we will automatically move on to exposure hierarchy training and no longer repeat the original program. The first is that the strength of the intervention will be determined by how serious the symptoms are at that time, and it will not be fixed in advance; the second is that changes in symptoms will also affect the intervention, so it is a two-way adjustment process. It will not be a fixed-dose way; rather, educational intervention for social anxiety should also be personalised according to all kinds of circumstances for everyone.

3.2 Lack of Metacognitive Awareness is related to a reduced response to intervention

Without metacognitive supervision, we do not know whether our thoughts are correct at a certain time, and we also do not know whether the errors in memory and interpretation are due to inattention or other reasons. People with high social anxiety tend to underestimate their actual performance and believe that their anxiety symptoms are more obvious to others; thus, they are unable to change their negative self-perceptions even after achieving success in real life. The problem is that there are no symptoms, and it is not due to other reasons. Based on the above results, people with poor monitoring accuracy showed a weaker response to the standardised cognitive restructuring training compared with the normal monitoring group, and it can be concluded that monitoring deficiency is a moderator of the intervention effect.

Add the metacognitive monitoring deficit to the assessment system for intervention sensitivity and classify the matches of different individuals. For people who have an overestimation bias in monitoring (that is, they are too sure that their own negative judgments are correct) as their main problem, metacognitive awareness training is more suitable than belief modification at the content level. For people whose main problem is an underestimation bias in monitoring (that is, they are unaware that the signals of their own anxiety have become abnormal), special feedback needs to be given to raise their level of awareness. The extent of the reduction in the monitoring deficit during the intervention period can be taken as an early sign of improvement, and this will happen before there are any changes in the symptom scale scores. If we do not know how well the intervention is working at any given time, we will be unaware of any possible worsening of symptoms that may occur later and will be at a higher risk of relapse. Based on the prediction index above, we will not distribute the intervention resources evenly but will concentrate them on the groups that have suffered more from the loss of monitoring functions.

3.3 The Blocking Effect of Timing of Educational Intervention on the Chronicity Process of Symptoms

College students' social anxiety has reached a certain stage in its transition from episodic to chronic stable state, and this period is generally about six to twelve months after the first appearance of symptoms. Educational intervention at this time can make full use of the state of neuroplasticity before cognitive schemas have been formed, and it can also disrupt the consolidation process of negative emotions. An early intervention block is that it may prevent the spread of situational avoidance into generalised avoidance and block the entry of anticipatory anxiety into daily life. If it is not chronic, social anxiety will have developed its own maintenance system and functional impairment; for instance, there may be automatic attentional bias and a fixed repertoire of safe behaviours. At this time, the intervention will need more funds and will be less effective[6].

The cause of the timing effect is memory reconsolidation and habituation learning. At the start of the development of symptoms, after each episode of anxiety, negative reinforcement increases the power of operant conditioning for avoidance behaviour, so early intervention can prevent this by applying exposure therapy. Due to the long-standing problem, anxiety and avoidance have become too close, and the basic exposure block cannot reach the deep network of anticipation. The time of educational intervention should also be in line with the stages of natural development, such as the school adjustment period, the internship transition period and the graduation job-hunting period; changes in the environment at these times can provide opportunities for change. The time-blocking effect is weaker in the chronic group, but it has not been lost. Increase the length of the intervention and the frequency of consolidation training to reduce some symptoms, but the cost will be much higher than that of early intervention.

Conclusion

The three levels of correlation among college students' social anxiety and the mental health education intervention are cognitive susceptibility, intervention action pathways and dynamic regulatory mechanisms. At the level of cognitive susceptibility, attention vigilance, negative self-representation and the wish to compare oneself with others are all parts of a system that maintains anxiety and are more complex than simple fear. Education should teach people how to think, not only what to know. Cognitive restructuring can change one's beliefs about behaviour; an exposure hierarchy can be used to reduce a particular behaviour; group-based acceptance and commitment therapy can strengthen psychological flexibility, and all these methods aim to achieve cognitive immunisation by means of linguistic and situational simulation. According to the severity of symptoms, adjust the strength of the intervention; a lack of metacognitive awareness can be considered a graded predictive index, and there is a timing-blocking effect in the window of symptom onset. In the future, we will learn more about the development of adaptive intervention algorithms, build behaviour marker systems to observe deficits in metacognition, investigate the cumulative blocking effect of all combinations of intervention timing on the process of chronicity, and examine the dose effect of activation conditions for acceptance and commitment techniques in group settings. Based on the problems above, more research will be carried out to determine when to conduct educational interventions in the general plan.

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