

The effect of Social Anxiety Disorder on perception and Therapeutic treatments for
Social Anxiety disorder.

by

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Abstract

Social Anxiety Disorder is one of the most common mental health conditions and is characterized by fear of negative evaluations. This fear can influence perceptions of how people with social anxiety disorder view the world and themselves. It has been found that people with social anxiety disorder have interpretation biases that make them perceive others as more threatening than they are in reality and often believe others think negatively of them. This is influential as people with Social Anxiety Disorder view themselves as they think others perceive them, which can negatively affect their self-image. Therapy that has addressed these perceptions has been found to be influential in reducing social anxiety. The goal of this paper is to review the biased perceptions of facial processing, negative beliefs, and negative body image, as well as how therapy can be an effective treatment for social anxiety disorder.

Keywords: Social Anxiety Disorder, Observer perspective, Biased perceptions, Interpretation bias.

Social Anxiety and Perception

Social Anxiety Disorder is a disorder that is characterized by recurrent fear and avoidance of being placed in social situations in which the individual can be scrutinized by another (DSM-5; American Psychiatric Association, 2013). Those with Social Anxiety Disorder have intrusive thoughts that people are constantly and incessantly evaluating them. In addition, people who have high levels of social anxiety hold unrealistically high standards of what others should expect of them (Roth & Heimberg, 2001). These unrealistic perceptions and expectations can foster the impression that people are more socially threatening than they truly are. This is primarily connected to how socially anxious individuals perceive facial expressions, as there is evidence which illustrates that people who experience high levels of social anxiety perceive negative facial expressions as more threatening than those with low social anxiety (Schulze et al., 2013, Heuer et al., 2007, Meredith et al., 2008). This constant fear of social situations involving perceived aggressors can affect one's sense of self. This can also alter the unreasonably high criteria they believe others have set for them. Thus, when they do not achieve that success, it negatively affects their belief in their ability to perform well in social situations. There is evidence that suggests there is a correlation between negative self-belief and high levels of social anxiety (Voncken et al., 2010, Abbott & Rapee, 2004). Additionally, this can influence their view on their body image and physical appearance. There is evidence that shows there is a correlation between negative body image and social anxiety (Levinson & Rodebaugh, 2012, Pawijit et al., 2017). This is crucial as Social Anxiety Disorder is estimated to affect 15 million adults, or 6.8% of the U.S. population (Anxiety & Depression Association of America, 2021). However, due to the Covid-19 pandemic, people being forced to socially isolate to reduce human contact could increase rates of Social Anxiety Disorder. This is increasingly relevant as it was found that being

socially isolated is found to be correlated with social anxiety (Teo, et al., 2013). Additionally, it was found that social isolation and loneliness are correlated with increased risks of depression and anxiety (Loades et al., 2020). There is also evidence that during the pandemic, rates of adults experiencing symptoms of anxiety disorders rose from 31.4 percent to 36.9 percent between August 2020 and December 2020 (Vahratian et al., 2021). The increased risk for social anxiety means it is more crucial than ever to examine the disorder and possible treatments. However, many different types of therapy have been found to be effective treatments for lowering symptoms of Social Anxiety Disorder (Mayo-Wilson et al., 2014, Goldin et., 2014, Willutzki et al., 2012, Abbott & Rapee, 2004, Cederlund & Öst, 2011). The goal of this paper is to explore research involving how having high levels of social anxiety can influence face perception, body image, and self-appraisals. Additionally, it will explore possible treatments for Social Anxiety Disorder and how these treatments affect the perception of self as well as beliefs about how one may be viewed by others.

Facial Processing

The ability to interpret facial expressions is essential, as it assists humans in determining if an individual may be a threat or safe to approach. Rapee and Heimberg (1997) developed a model to illustrate how individuals with Social Anxiety Disorder perceive and process information. In their model, they describe individuals with social anxiety as more likely to believe that people will negatively evaluate them. The belief that everyone is inherently negative in their evaluations causes people with Social Anxiety Disorder to perceive social situations as an inherent threat. The perception of social situations as a threat will cause individuals with social anxiety to attend to external information, including facial expressions such as frowning or an expression of boredom. Additionally, information from an audience influences the anxious

individual's perception of themselves and how they assume others will understand them. People with Social Anxiety Disorder are constantly monitoring potential external threats of negative social evaluations while simultaneously monitoring the potential aspects of their appearance or behavior that might induce those negative evaluations.

A study examining the perception of facial emotions and eye-gaze in individuals with high levels of social anxiety provided evidence that these individuals experienced an increased perception of social scrutiny (Schulze et al., 2013). The study recruited 174 participants from the internet to do a yes-or-no task interpreting whether 3D images of actors were looking at them or not. Participants had to take the Social Phobia Inventory to assess their levels of social anxiety. Then they were then presented with images of four actors' faces—two of whom were male, and two of whom were female. Each of the faces was presented an equal number of times expressing one of the four following emotions: fearful, neutral, angry, and happy. Each image of the actors was also presented at angles of 0, 2, 4, 6, and 8 degrees to the left and right of the direct gaze of the participant. Participants then were asked in two-hundred-eighty trials to determine whether the actors were looking at them or not. The two-hundred-eighty trials consisted of nine views of each image. Every gaze angle had to display each of the four emotional expressions for each of the four actors, and every stimulus was presented twice in random order. The results indicated that the more socially anxious an individual was, the more likely they were to respond that they were being looked at. It is also worth noting that participants with high social anxiety believed they were looked at more when the image shown expressed a negative or neutral facial expression rather than a positive expression. This provides evidence that the more socially anxious someone is, the more likely they are to feel someone is observing them, and certain facial expressions exacerbate this effect. For the socially anxious individual, they possess an

increased sensitivity to people watching and evaluating them. A possible explanation for why there was an increased perception of being looked at by neutral expressions is that a socially anxious individual may not be able to interpret what the actor is feeling, and since socially anxious individuals believe people are inherently judgmental, they may project their feelings of being judged onto the actor.

Facial expressions help people determine whether someone is a threat or not. It is common for individuals with social anxiety to avoid social situations when they feel threatened. A study (Heuer et al., 2007) examined whether certain facial expressions would cause a socially anxious individual to have a stronger desire to either approach or avoid. This study recruited 86 participants: 43 of them were highly socially anxious individuals and the other 43 were non-anxious controls. Participants were presented with twenty-seven pictures of people showing angry, smiling, and neutral facial expressions and nine puzzle pieces as control stimuli. The pictures consisted of 9 people (four men and five women) with each person expressing either an angry, smiling, or neutral facial expression. Participants were placed in front of a computer screen with a joystick and had to complete two different blocks of trials, each in separate conditions. In the Approach condition, participants were told to move the joystick towards themselves when they viewed a face, which brought the face closer to them, and to move the joystick away from them when presented with a puzzle piece. In the Avoid condition, when participants were presented with a face, they were told to move the joystick away from them, which would move the face further away from them. And when they were presented with a puzzle piece, they were told to move the joystick towards themselves. Researchers then recorded the amount of time it took them to either fully approach or avoid the image presented. In total, each participant completed 144 trials, which consisted of thirty-six practice trials and 54 trials for

each condition. Participants were then asked to evaluate every facial picture by rating its emotional valence on a 5-point scale that ranged from very unpleasant to very pleasant. The results of this study suggested that highly socially anxious individuals were quicker to avoid smiling and angry faces compared to non-anxious controls. A possible explanation for this is that highly socially anxious individuals perceive smiling and angry faces as threatening and thus seeing those faces activated avoidance mechanisms in their bodies. This is due to the fact that individuals with Social Anxiety fear both negative and positive evaluations. The fear of positive evaluation originates from a fear of not being able to live up to the expectations of others and a fear of the resulting negative consequences from not living up to those expectations (Weeks & Howell, 2012).

Another study that examined facial processing in individuals with heightened social anxiety also provided evidence of increased attention to facial expressions (Coles et al., 2008). The article focused on whether the interpretation of faces by individuals with elevated social anxiety is generally distorted or whether the distortion is specific to negative faces. Sixty-one undergraduate students were recruited for this experiment and then divided into two groups. Thirty-two participants made up the high social anxiety group, and 29 participants were a part of the low social anxiety group. Each participant was required to take three tests: Social Interaction Anxiety Scale, Brief Fear of Negative Evaluation Scale, and Beck Depression Inventory 2nd Version to determine their level of social anxiety. Participants were then exposed to 12 schematic faces within an experimental booklet. Each of these faces had different expressions, with either their eyebrows facing upward or downward, the mouths either smiling or frowning, and the eyes either looking up, looking straight ahead, or looking down. While being shown each of these faces, participants then had to decide between two adjectives to describe each face and rate on a

1-7 Likert scale the intensity of the emotion presented in each face. The results suggest that both groups perceived the facial expressions in terms of their evaluations and ratings of intensity similarly. However, the high social anxiety group only required the eyebrows facing downwards to interpret a facial expression as a threat, and people with low social anxiety usually required both the frowning mouth, and downward eyebrows to describe the facial expression as threatening. This implies that if one has high social anxiety, they may require less external information to interpret an expression as threatening than people with low social anxiety.

Facial processing is crucial in determining if a person is a threat or not. However, studies indicate that compared to those with low social anxiety, people with high levels of social anxiety require less external information to determine that an expression is threatening (Coles et al., 2008), feel a stronger desire to avoid smiling and angry faces (Heuer et al., 2007), and have an increased sensitivity to feeling like they are being watched when they see neutral and negative facial expressions (Schulze et al., 2013). This biased perception of facial expressions can reinforce the fear of being watched and receiving negative evaluations in those with social anxiety. The perception that people are more likely to be looking at them validates the irrational thought that there is an imaginary audience consistently judging them. There is also less information needed to perceive a facial expression as threatening, and this increased recognition of threats will validate the thought process that people are inherently judgmental. The external information people with social anxiety receive not only influences their thoughts of what a perceived audience expects of them but can also transform how they view themselves (Rapee & Heimberg, 1997).

Body Image

One primary concern of those with social anxiety is how their appearance is perceived by others. This perception of viewing oneself through the eyes of others may influence how someone with Social Anxiety Disorder may perceive their own body. One study on spontaneously occurring images in Social Phobia provides evidence of this “observer perspective” (Hackmann et al., 2000). In this study, 60 participants were recruited, 30 of these participants were outpatients who were referred for treatment for social phobia. The last 30 participants were non-anxious controls. Each participant was interviewed individually. Each participant was asked to think about certain social situations where they had felt anxious. Participants then had to indicate how frequently they experienced mental images in anxiety-provoking social situations or when they anticipate anxiety provoking social situations. Participants were then asked to recall a recent episode of social anxiety, and rate how anxious they were feeling in the worst moment of the episode on a 0-to-100-point scale. They were also asked whether an image had passed through their minds while recalling that episode. If they did not report an image, the interviewer asked whether they had an impression of how they came across, and how others might have reacted to them. Participants were then asked to evoke the image or impression, and rate whether their predominant perspective was of them viewing the situation through their own eyes and observing the details of what was going on around them. This is called the field perspective, where they were observing from their own perspective, while examining oneself from an external point of view is the observer perspective. Next, they were asked to describe the image or impression in as much detail as possible including everything they felt, saw, or heard. They then had to rate on a 0-to-100-point scale of the extent to which the image or impression seemed to be distorted. At the conclusion of the interview, the interviewer

rated whether the image or impression reported appeared to have had the characteristics of a clear visual picture, using a 3-point scale. After the interview an experienced clinical psychologist, with no relation to the participants, rated descriptions of their images or impressions on a 7-point emotional valence scale. The results of this study showed that socially anxious participants were more likely to report spontaneously occurring images compared to non-anxious controls. In addition, images perceived in the Social Anxiety group were more likely to be negative and more likely to cause social anxiety compared to the non-anxious group. It was also found that images from the participants in the socially anxious group were predominantly from an observer perspective compared to the field perspective. This means that people with Social Anxiety Disorder are more likely to view themselves as others may see them, which could increase their levels of social anxiety and may affect their self-perception.

There is evidence that suggests that there is a relationship between a negative perception of one's own body and fear of evaluations in individuals with social anxiety. For example, one study tested the relationship between social anxiety and eating disorders (Levinson & Rodebaugh, 2012). In this study, 118 college students were recruited and filled out tests and questionnaires that measured five domains of social anxiety and indicators of disorganized eating. The five domains of social anxiety include: social appearance anxiety, fear of positive evaluation, fear of negative evaluation, fear of scrutiny, and social interaction anxiety. The indicators of disordered eating were body dissatisfaction, bulimia, drive for thinness, weight concern, eating concern, shape concern, and restraint. The results of this study showed that social appearance anxiety predicted signs of body dissatisfaction, bulimia, shape concern, weight concern, eating concern, fear of scrutiny, social interaction anxiety, and fear of positive evaluation. It was also found that negative evaluations predicted a drive for thinness and

restraint. These results imply that appearance anxiety can not only influence the fear of evaluations but also influences how one views their own body and impacts their motivations to change their body and eating habits. It also implies that fear over negative evaluations may cause an individual to have an increased desire to control their appearance, so they are more socially appealing.

Another study provides evidence of an association between social anxiety and negative body image and analyzes the association between fear of negative evaluations, body image dissatisfaction, and social anxiety (Pawijit et al., 2017). In this study 77 Thai college students were recruited and given an online survey that assessed their levels of social anxiety, body dissatisfaction, and fear of negative evaluations. The results of this study revealed there was a positive relationship between social anxiety and body dissatisfaction. This relationship was mediated by a fear of negative evaluations. It was also revealed that body image dissatisfaction and social anxiety were linked through fear of negative evaluations. These results provide evidence that fear of negative evaluations and social anxiety can be a factor in determining how someone feels about their body. This is essential as people with social anxiety inherently believe people are judgmental, thus the fear of negative evaluations is quite prevalent. As a result, this means there would be an increased susceptibility to negative body image for people with Social Anxiety Disorder.

Anxiety over how one's appearance can be perceived by others is a crucial component for those with social anxiety. However, there is evidence that shows that while anticipating or imagining a social situation, people with social anxiety will view themselves from an observer's perspective and that observer perspective will likely be a negative viewpoint (Hackmann et al., 2000). Hence, they may consistently perceive themselves through a negative outside perspective.

There is evidence that shows there is a positive relationship between social anxiety, fear of negative evaluations, and body dissatisfaction. Additionally, the fear of negative evaluations is the mediating factor between the two (Pawijit et al., 2017). There is evidence that anxiety over one's appearance is associated with body dissatisfaction, bulimia, shape concern, weight concern, eating concern, fear of scrutiny, social interaction anxiety, and fear of positive evaluation (Levinson & Rodebaugh, 2012). This is vital, as information collected in social situations that people with Social Anxiety Disorder partake in are formed through the perspective of others. They inherently believe others are judgmental; hence, this can be damaging to the view of their own body image.

Negative Self Beliefs

As exemplified by the findings related to body image, people with Social Anxiety Disorder have been shown to have negative self-beliefs. Individuals with Social Anxiety Disorder experience increased anxiety in social situations when they wish to convey a desired impression but are unsure whether they can convey that desired impression. People with Social Anxiety Disorder tend to catastrophize the negative consequences of a social encounter, they believe they have very little control over their emotions, and that their social skills are too poor to cope with the social situation (Hofmann, 2007). One study that researched the negative beliefs of people with social anxiety and its effect on social performance provides evidence of an association of negative beliefs with social anxiety (Voncken et al., 2010). A total of 100 female undergraduate students were recruited for this experiment. These 100 participants were selected from a prescreening of 462 students who filled out the Blushing Trembling and Sweating Questionnaire. Based on how they scored on the questionnaire, participants were separated into two groups: a high-blushing group and a low-blushing group. The participants in the two groups

were then randomly assigned into two conditions. The two conditions were a blush feedback condition and a no feedback condition. In this study, all participants were hooked to a device connected to their cheeks and fingers that would vibrate throughout the study. Participants in the blush feedback condition were told that their body showed a blushing response from vibrations. In the control condition, however, participants were told that the vibrations were not due to their blushing. In the blush feedback condition, there were 24 participants from the high-blushing group, and 26 participants in the low-blushing group. The control condition contained 23 high-blushing participants and 24 low-blushing participants. Then, participants were required to have a 5-minute conversation with two unknown confederates. The participants then had to report how much attention they paid to the device via a scaled that measured their self-focused attention. Additionally, they had to rate their levels of anxiety during the conversation with the confederate on a 9-point Likert scale. They then had to self-report on a scale, which focused on how the participant perceived the confederate judged their social ability. The social performance of the participants was then rated by two video-observers using scales that measured participants' social behavior and how anxious they appeared. Social rejection was assessed by the confederates using a scale that measured the likability and a desire for future interaction with a participant. They rated the likeability of the participants with a scale that measured the desire for a future interaction with the participants. The results revealed that participants in the blush feedback condition had increased self-reported negative beliefs and self-focused attention, decreased social performance, and increased social rejection, as confederates were less likely to rate them as likeable. It was also discovered that negative self-beliefs were associated with poor social performance. This means that participants who were aware that they were appearing anxious were likely to have negative beliefs about themselves, which may have negatively influenced

their ability to perform in social situations. This is essential, as the negative beliefs held by someone with Social Anxiety Disorder about their social performance can negatively affect their social performance, validating their negative thoughts about their social ability. These effects may increase their anxiety towards social situations.

Clark and Wells' (1995) cognitive model of social phobia predicts that sensory information received from inside the body is an important source of information which influences thought processes in social situations. Information received from the body is influential to communicating whether someone is in danger. For example, awareness of a fast heartbeat or sweating would indicate to someone if they were in distress. Papageorgiou and Wells (2001) collected evidence that body state information has a direct influence on negative beliefs and self-perception. For their study they recruited eight participants who were referred for treatment of Social Anxiety Disorder. All participants were instructed to engage in a 5-minute conversation task with a confederate. Each participant was tested under three experimental conditions. Each condition contained a five-minute conversation task. First, an initial behavior test. Then, they were given a test which informed them that they had an increased pulse rate, and another test which informed them that they had a decreased pulse rate. Before each conversation task, the participant's pulse rate was measured. Each participant took the initial behavior test first. Then, half the participants were informed that their pulse rate increased before they began another conversation task. After that conversation task, those participants were measured on their pulse rate again and told that their pulse rate decreased. They engaged in the last conversation task. The other half of the participants received the experimental conditions in the opposite order. During the conversation task, participants self-reported their levels of anxiety during the conversation, while the confederate rated how anxious they perceived the participant to be.

Participants were also assessed on their negative self-beliefs, self-focused attention, perspective-taking, and the extent to which they believed the experimental condition manipulation. The results of this study illuminated the fact that when participants received information about an increase in pulse rate, it resulted in greater anxiety, negative beliefs, and self-focused attention. However, when participants received information about a decrease in pulse rate, such a realization led to decreases in anxiety, negative beliefs, and self-focused attention. This means that sensory information participants received not only influenced their levels of anxiety, but influenced their belief in their ability, as well as how much attention they paid to themselves.

Another study that provided evidence that negative beliefs about oneself were associated with individuals who have Social Anxiety Disorder explores the influence of social comparisons between genders on self-appraisal in individuals with social anxiety (Mitchell & Schmidt, 2014). The article focused on whether negative self-appraisals have an association with levels of social anxiety and gender. One-hundred-and five undergraduates were recruited for this study. Each participant had to submit questionnaires to determine their levels of social anxiety and depression. These tests were the Beck Depression Inventory 2nd edition, and the Social Interaction Anxiety scale. Participants were then randomly assigned into two conditions. One group was required to read through a high-performance profile. The other group was required to read through an average performance profile. In both groups, participants were required to read through a profile of someone from the same sex for 5 minutes. In the high-performance profile condition, 31 male and 24 female participants viewed a profile of a person displaying a high GPA, a high number of social activities, and a high number of academic related activities. For example, this profile could include clubs, activities, and a list of academic awards. The average performance condition contained 20 males and 30 females who saw a profile containing lower

amounts of everything listed in the high-performance profile. After viewing the profiles, participants used a visual analog scale to compare themselves to the profile they just read through. This scale also measured their self-reports of personality and signs of anxiety. The results showed that men with high social anxiety in the high-performance profile condition reported the most negative opinions about their anxiety and poorer self-appraisal of their personality. This however was not the case for women. This means that men with high levels of social anxiety perceived themselves more negatively compared to those with low levels of social anxiety. They also had a greater sense of shame related to their anxiety. This is critical as it explores the question of if gender norms relate to the perception of the self in men with Social Anxiety Disorder. It is possible men may be more self-conscious about displaying signs of weakness due to gender norms. This self-consciousness can lead to negative beliefs about oneself when “weakness” is displayed.

Another study that provides evidence of a perception of negative belief in oneself for individuals with high levels of social anxiety examined post-event processing and negative self-appraisals in children with social anxiety (Schmitz et al., 2011). Seventy-three families were recruited for this study and required their children to take the Social Anxiety Scale for Children revised. Based on the scores on the Social Anxiety scale, 40 children were chosen within 10 to 12 years of age. Those 40 children were split into two groups depending on their scores, with 20 participants in the high social anxiety group and 20 in the low social anxiety group. Participants were first told to recount two short stories for 3 minutes in front of a male and female adult judge. The participants were instructed to perform better than other children of their same age group and were advised that other children would watch and rate their performance from a recording. After finishing each recount of a story, participants then had to rate their level of

anxiety from 0 to 10 and self-evaluate how well they recounted the story on a performance questionnaire. Two-and-a-half hours after the participants recounted the stories, participants were instructed to take the performance questionnaire again and the thoughts questionnaire for children, which assessed a participant's negative and positive post-event processing of their social interaction. After one week, participants were asked to complete the thought questionnaire for children and performance questionnaire, one last time. The results of this study revealed that participants in the high social anxiety group reported higher levels of negative post-event processing 2.5 hours after the task and 1 week after compared to the low social anxiety group. The results also showed that self-rated performance in the high social anxiety group got worse over the course of one week but remained the same in the low social anxiety group. Additionally, it was uncovered that negative post-event processing was associated with negative self-performance ratings. Thus, participants with high levels of social anxiety were more critical of their social performance, because their social anxiety causes them to view their social performance through a negative framework.

Hence, individuals with social anxiety already have preconceived standards of what people expect of them. However, it is also true that those same individuals do not hold strong beliefs in themselves. These negative beliefs maintain their anxiety and make it harder for them to socialize. This can lead to an impression that people in general are a threat because the anxious individual will believe they will never achieve the standard they believe others hold for them. These negative beliefs have been found to be closely associated with poor social performance and increased levels of social rejection (Voncken et al., 2010). This is vital, as social rejection can lead to a further increase in negative beliefs. Social rejection can provide validation to thoughts of self-doubt, which could increase their anxiety. It was also revealed that sensory

information received from inside the body could influence anxiety levels, negative beliefs, and attention to oneself (Papageorgiou & Wells, 2001). Additionally, a greater sense of shame and negative self-appraisals can be found in males with high social anxiety (Mitchell & Schmidt, 2014). Finally, it was found that high levels of anxiety were associated with negative post-event processing, which resulted in increased negative feelings about their social performance (Schmitz et al., 2011). Social anxiety can transform an individual's perception of how capable they feel they are. Hence, when they do not feel capable enough to meet the expectations of others, their fear of social situations is only maintained.

Therapeutic Treatments

Biased perceptions in individuals with social anxiety assist in maintaining their anxiety. However, many types of therapy have been found to be effective treatments for Social Anxiety Disorder. Cognitive Behavioral Therapy has been found to be one of the best intervention strategies for Social Anxiety Disorder (Mayo-Wilson et al., 2014). It is important to examine the effectiveness of these intervention strategies. One study that specifically analyzed the effectiveness of Cognitive Behavioral Therapy (Goldin et., 2014) examined the weekly changes in emotion regulation and social anxiety levels during Cognitive Behavioral Therapy (CBT). The goal of this study was to investigate changes in the frequency and success of the use of cognitive reappraisal and expressive suppression, as well as changes in social anxiety levels during Cognitive Behavioral Therapy for individuals with Social Anxiety Disorder. Cognitive reappraisal is an emotional regulation technique that requires the individual to attempt to reinterpret a stressful situation in a way that changes its meaning and emotional impact. Expressive suppression is another emotion regulation technique that has the individual either attempt to hide or reduce the emotion (for example, smiling when you are sad to reduce or hide

the emotion). For this study, 75 participants were recruited who all fulfilled the criteria for Social Anxiety Disorder. Participants were then randomly assigned to either receive immediate CBT or waitlisted to receive CBT after serving as a control group. There were 38 participants who received the CBT immediately and 37 participants who were waitlisted to receive CBT.

Participants were asked to self-report how often they utilized and how often they were successful in the use of cognitive reappraisal and expressive suppression during social situations on a scale from 0 to 100. Participants were also asked questions about how often and how successful they were in altering their ways of thinking in order to assess frequency and success rate of cognitive reappraisal. Participants were also questioned on how often and how successful they were in hiding their emotions to assess the frequency and success rate of expressive regulation in participants. The waitlisted group was asked these questions monthly, while the immediate CBT group was asked these questions on a weekly basis. All participants received 16 sessions of Cognitive Behavioral Therapy and after finishing treatment were asked to self-report their levels of social anxiety after treatment. The results revealed: compared to the waitlisted group, participants who received immediate CBT had increased cognitive reappraisal frequency and success, as well as decreased social anxiety. However, it had no impact on their levels of expressive suppression. Weekly decreases in social anxiety were shown to be associated with increases in reappraisal success and decreases in suppression frequency. The results also brought to light how CBT was effective in reducing social anxiety levels in all participants. Thus, while participants were in therapy, they were able to reinterpret information they received from their biased perceptions utilizing a thought process that would reduce their levels of anxiety more often and more successfully than participants who were not in therapy. This provides evidence that therapy can be a method to change their biased perceptions and lower their anxiety.

Not only can therapy reduce anxiety levels during sessions, but it is also found to be a long-term treatment for Social Anxiety Disorder. There is evidence that displays how therapy can be a long-term solution, as this study (Willutzki et al., 2012) explored the long-term effectiveness of Cognitive Therapy and Resource-Oriented Cognitive-Behavioral Therapy (ROCBT) on individuals with social anxiety. The goal of this study was to find out which type of therapy was more useful for individuals with social anxiety. Cognitive Therapy focuses on altering an individual's thought process to better help them problem-solve and reinterpret situations to improve their emotional response. ROCBT is a method of therapy which has aspects of cognitive behavioral therapy. However, it focuses on utilizing whatever resources or skills someone already has, instead of learning to develop new skills. For this study, 83 participants were recruited, all of whom met the criteria for Social Anxiety Disorder. Of these, 47 participants were randomly assigned to receive ROCBT while the other 36 participants received Cognitive Therapy. All participants received individual therapy from 22 different therapists, with 8 in the cognitive therapy group and 14 therapists in the ROCBT group. All participants received a maximum of 30 sessions of therapy. Before and after treatment, participants were assessed on their social anxiety and fear of negative evaluations. The same participants were then assessed the same way two years later with 16 people were reassessed from the cognitive group and 35 people were reassessed from the ROCBT group. Ten years after the original study, 11 people in the cognitive therapy group were reassessed and 16 people in the ROCBT group were reassessed. The results revealed that both therapies provided individuals with a significant decrease in social anxiety levels and symptoms. It was found that ROCBT provided a greater reduction of symptoms compared to the Cognitive Therapy group right after treatment. However, it should be noted after 2 years, and 10 years later there was barely any difference between reduction in levels

of social anxiety for each therapy. Hence, over a long-term period, both therapies were effective in reducing social anxiety before they began treatment, thus providing further evidence of therapy being an effective treatment.

It has been found that CBT can also assist in resolving some of the biased perceptions socially anxious people will experience. This was found to be the case in a study examining Post-Event Rumination and Negative Self-Appraisal in Social Phobia Before and After Treatment (Abbott & Rapee, 2004). In this study, 73 participants were recruited and separated into two groups. Of these, 43 participants who met the criteria for Social Anxiety Disorder were put into the social anxiety group while the other 30 participants were non-anxious participants. For this study, participants were asked to give a three-minute speech on any topic they wanted to speak about. Before they began their speech, participants were told that an independent judge would rate their performance from the videotape of their speech. After the speech, participants were instructed to complete a performance questionnaire that self-reported how they felt they performed on the speech task. A week later, participants were asked to complete a post-event rumination questionnaire to assess how often they thought about the speech task and their performance on the task. They also had to complete the performance questionnaire a second time. For the second part of the experiment, 20 participants from the socially anxious group were asked to complete a 12-week cognitive behavioral program. After treatment, those 20 participants were asked to repeat the study to see if treatment influenced their perception of their performance and their rumination. The results of this study found that the socially anxious group continued to have negative appraisals of their performance over the one-week span, whereas the group without Social Anxiety Disorder showed more positive appraisals about their performance. It was also found that the socially anxious group engaged in increased levels of negative

rumination than the controls. After treatment, it was found that participants with Social Anxiety Disorder had increased positive perceptions of their performance. Additionally, there was a reduction in how much they would negatively ruminate over their performance. This reveals that therapy was an effective method to change the perceptions of those with Social Anxiety Disorder from a negative perception to a more positive one.

Not only was therapy found to be effective in rectifying biased perceptions of the self for people with Social Anxiety Disorder, but it was also impactful in transforming interpretations of threatening situations. This was shown in a study examining the perception of threat in children with social phobia (Cederlund & Öst, 2011). In this study, 98 children from the ages of 8 to 14 were recruited. Of these, 49 of these children met the criteria for Social Anxiety Disorder while the other 49 were non-anxious controls. In this study, all participants were presented with seven ambiguous scenarios. During each presentation of the scenarios, participants gave interpretations and rated their levels of fear. After completing the scenario, participants rated how threatening they found the scenario on a 9-point Likert scale and rated the intensity of negative emotion the scenario made them feel. These questionnaires were given to assess how participants interpret information and how much information is needed to determine whether or not a situation is dangerous. The study also examined whether treatment would improve interpretation biases of children with Social Anxiety Disorder. Twenty-six of the children from the socially anxious group were given a 12-week behavioral treatment plan for children with social phobia. Those participants were then tested again using the same methods to see if there were changes in interpretation biases and changes in how much information was needed for them to determine if a situation was threatening or not. Thirteen participants were then assessed again a year after treatment. The results of this study showed that children with Social Anxiety Disorder displayed

an interpretation bias. This is because they required less information from an ambiguous situation to perceive that situation as threatening compared to non-anxious children. Additionally, it was found that children with Social Anxiety Disorder made significantly less biased interpretations after a 12-week behavior therapy program. However, there were no changes in how much information they needed to find a situation threatening after treatment. Lastly, 1 year after treatment, socially anxious participants had nearly identical measurements to the non-socially anxious group in terms of their levels of interpretation biases as well as in how much information was needed to determine if a situation is threatening. This reveals that children with Social Anxiety Disorder perceived ambiguous scenarios differently, as well as perceived situations as threatening with less information compared to children who didn't have social anxiety. However, therapy was an effective treatment in regulating these biased perceptions. Therapy was discovered to be an effective method of lowering social anxiety levels and undoing the skewed perceptions people with Social Anxiety Disorder have about themselves and others. Specifically, normalizing the biased perceptions held by people with Social Anxiety Disorder eliminates some of the factors that maintain Social Anxiety Disorder. This is a possible explanation as to why CBT, a method of therapy that helps contextualize biased perceptions, is found to be one the most effective ways to treat Social Anxiety Disorder (Mayo-Wilson et al., 2014).

CBT was found to be an effective way of allowing people with Social Anxiety Disorder to reinterpret information and overall lower their Social Anxiety levels (Goldin et., 2014). Different therapies that also focus on reinterpreting biased perceptions such as Cognitive Therapy and Resource-Oriented Cognitive-Behavioral Therapy have been found to be successful long-term treatments for Social Anxiety Disorder (Willutzki et al., 2012). CBT was also found to

be successful at increasing one's positive perceptions of performance and reducing one's negative rumination frequency (Abbott & Rapee, 2004). Behavioral therapy was found to be an effective way of reducing interpretation biases in children with Social Anxiety Disorder (Cederlund & Öst, 2011). Therapy is effective at resolving the biased perceptions that maintain social anxiety and remains effective at treating Social Anxiety Disorder.

Conclusion

In conclusion, people with Social Anxiety Disorder have biased perceptions that maintain their fear, though therapy is an effective method of resolving these perceptions and has proven successful in doing so. It is essential to consider how the information received from external environments, such as facial processing, influences how a person with Social Anxiety Disorder understands a situation. Due to their core beliefs that people are inherently judgmental, socially anxious individuals are more sensitized to negative facial expressions. (Schulze et al., 2013, Heuer et al., 2007) Additionally, they require less information to perceive such expressions as negative (Coles et al., 2008). Receiving a negative expression from others is very likely to make a socially anxious individual feel socially rejected. This can further validate their fear of other people being a social threat. This external information can influence their sense of self. This can also result in further negative perceptions of a socially anxious individual's social mobility, likability, and body image (Voncken et al., 2010, Pawijit et al., 2017, Levinson & Rodebaugh, 2012). This is especially influential, because people with social anxiety have been found to project how they view themselves through others' eyes (Hackmann et al., 2000). Therefore, external information can deeply affect the internal self of someone with social anxiety. The bias towards the external information in the environment can result in more evidence for the minds of socially anxious individuals, that they have the potential to appear undesirable to others. Their

interpretation bias influences how they view their performance in situations and how desirable they are ((Mitchell & Schmidt, 2014, Schmitz et al., 2011). This intense attention towards the self can result in a reduction in their social performance (Voncken et al., 2010). Additionally, physical symptoms can lead to an influence in anxiety levels, sensitivity, and hyper-awareness (Papageorgiou & Wells, 2001). The biased perception of outside information can lead a socially anxious individual to be less likely to engage with others. This is essential, as socially anxious people will be unable to redirect their misconceptions, as they do not seek out social situations that would enable them to disprove their own negative self-beliefs. This can lead to excessive self-focused attention, as anxious individuals get caught up in concerns about their social inadequacies. Since people with social anxiety view themselves often through an observer's perspective, they perceive their body through a lens. This lens is through the eyes of others,' which they often believe to be a negative viewpoint. Hence, they view their own bodies negatively. This negative body image can only inhibit positive beliefs involving social performance and likability. However, due to their fear of social interaction, they may not receive evidence to refute these deeply seated claims. All of these are key factors in maintaining Social Anxiety Disorder. These perceptions often create a vicious cycle, where those with Social Anxiety Disorder believe others are dangerous and intend to harm them. They do not have the adequate skills or mindset to handle such situations. However, therapy has been found to be beneficial to socially anxious individuals, reshaping biased perceptions and reframing their view that others are predominantly judgmental (Goldin et., 2014, Willutzki et al., 2012, Abbott & Rapee, 2004, Cederlund & Öst, 2011). Being able to recontextualize situations in a positive, unbiased light removes countless factors that maintain Social Anxiety Disorder. In the future, perhaps researchers can focus on some fascinating questions. One might ask: does the duration

of therapy influence the treatment for Social Anxiety Disorder? For example, are 12 weeks of therapy more effective than 8 weeks of therapy? Furthermore, has the use of face masks alleviated some of the symptoms suffered by those with Social Anxiety Disorder? This is important to ask, because if there is a lessening of symptoms, it is possible that when there is no more need for face masks, there might be a resurgence of anxiety symptoms. Finally, how does social media affect the perception of the self in those with Social Anxiety Disorder? For example, does the number of likes affect the amount of negative self-appraisals of people with Social Anxiety Disorder? Many research studies include college-aged participants alongside younger participants. There should be a greater focus on analyzing data for all age groups, so that the data previously compounded on Social Anxiety Disorder is bound to be applicable to all age groups. There should be a focus on other methods besides therapy to further increase the amount of support that can be provided to those with Social Anxiety Disorder.

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