Tampereen yliopisto

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“THE EFFECTS OF DEVELOPMENTALLY ORIENTED COGNITIVE THERAPY ON SAFETY BEHAVIOURS OF ADOLESCENTS WITH SOCIAL ANXIETY DISORDER”

“A Developmentally Oriented Cognitive Therapy - DOCT-SAD"

Faculty of Social Sciences
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ABSTRACT

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Introduction. Social anxiety disorder (SAD) is defined in the DSM-5 as an intensive and persistent fear of one or multiple social situations, that causes suffering and functional impairment for the individual. Adolescence is a particularly sensitive time for the onset of SAD, due to the increasing need for peer acceptance and support. In addition, the young person's further evolving cognition and independence from their parents increases the risk of SAD. Left untreated, SAD can have multiple negative life-long impacts on one's academic success, social relationships, and family life. According to the Cognitive Model of SAD by Clark and Wells (1995), primary maintaining factors of SAD are in-situation safety behaviours, increased attentional focus on oneself and bias negative cognitions related to self and others. A cognitive therapy treatment program focusing on these factors specified by the cognitive model of SAD has been found effective among adults in several studies. For adolescents, there is preliminary evidence on efficacy. An emerging need for more developmentally sensitive treatments for adolescents. A Developmentally Oriented Cognitive Therapy for Social Anxiety Disorder DOCT-SAD (in Finnish: Tosi Minä- treeni) was developed. The aim of this case series was to examine the effects of the DOCT-SAD -treatment on the symptoms of SAD and safety behaviours in the participants, and to further examine the different subscales of safety behaviours in the participants.
Methods. Ten (n = 10) adolescents from upper secondary schools in Tampere participated in the treatment (13-15 years old, mean age = 13.8, SD = 0.92, one male, nine females). DOCT-SAD consists of 10 sessions: four individual sessions and six group sessions. In the first two individual sessions diagnostic assessments were made, interviewing the parent(s) and the adolescents face-to-face. In addition to the diagnostic assessment, the researchers evaluated the severity of SAD with CSRs. The participants were also given a set of self-report measures, including the SPIN and the SAFE measures. Pre- and post-treatment scores were collected from the participants, and the diagnostic remission and remission according to SPIN were calculated.
Results. The mean difference between pre- and post-treatment scores were significantly different in SPIN (d = 1.614), SAFE (d = 1.614) and CSRs (d = 1.497). Six out of ten (60%) participants were in diagnostic remission and in remission according to SPIN.
Conclusion. This study provides emerging evidence that the participants benefited from a short 10-session cognitive therapy. Further studies are needed, with larger sample sizes and control groups.

Keywords: social anxiety disorder, adolescents, cognitive therapy, cognitive behavioural therapy, developmental factors, SPIN, SAFE

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1. INTRODUCTION

1.1. Social Anxiety Disorder in Adolescents

Social Anxiety Disorder (SAD) is defined as an intensive fear of one or multiple social situations, that is persistent, causes suffering and harms the functional capacity of the individual suffering from it (APA, 2013). The main fear among individuals with SAD is the fear of being negatively and critically evaluated by others (APA, 2013; Moscovitch, 2009). Both the fear of being negatively evaluated and the fear of possible emotional, bodily, and social consequences of becoming criticized are experienced with high intensity, typically leading to the avoidance of one or more social situations (Clark and Wells, 1995; Rapee and Heimberg, 1997).

The lifetime prevalence of SAD in adults ranges from 6.7%, observed in a German population sample (Fehm et al., 2005) to 12.1%, observed in the United States (Kessler et al., 2005). These estimates are based on epidemiological sampling and confirmation of diagnoses with structured interviews. Kessler and colleagues (2005) discovered in the above-mentioned study, that the median onset age for SAD was 13 years. This is relatively early compared to other anxiety disorders (i.e., panic disorder, agoraphobia without panic, specific phobia, generalized anxiety disorder, post-traumatic stress disorder and obsessive-compulsive disorder), in which the onset age fluctuates between ages 19-31 (Kessler et al., 2005). Since these findings, a recent meta-analysis, sampling 192 epidemiological studies globally also found median age of onset for SAD being 13 years (Solmi et al., 2022).

Thus, SAD seems a mental disorder with a typical origin in the adolescent period. In Finland, Ranta and colleagues (2009) studied the prevalence of SAD amongst Finnish 12–17-year-old adolescents during a 12- month period. According to their study, 3.2% of the adolescents reached the criteria for SAD in a clinical interview. Another clinical interview study conducted in Germany (Wittchen et al., 1999) found that 4.9% of males and 9.5% of females in a community sample of adolescents and young adults aged 14-24, fulfilled the DSM-IV criteria for SAD. In their study, Wittchen and colleagues (1999) concluded that the twelve-month prevalence of SAD was only slightly lower than the lifetime prevalence, which according to them indicates notable persistence of the disorder.

A population study by Whisman and colleagues (2000) showed that adults with SAD have fewer friends and find it difficult to get along with them. When followed up in longitudinal research, individuals with SAD were more likely to prematurely withdraw from school, which leads to attaining lower education level, fewer friends, and therefore lower

quality of life (Van Ameringen et al., 2003). The onset of SAD during adolescence is particularly detrimental, due to the importance of peer relationships, which is greater than in any other stage of life (Moshman, 2011, Blakemore & Mills, 2014). A meta-analysis investigating the effects of social deprivation in animal adolescents concluded that social isolation has negative impacts on a behavioural and brain-level changes, for example a heightened sensitivity on social cues, and on mental health, for instance anxious- and depression- like symptoms (Orben et al., 2020). Orben and colleagues (2020) cautiously extended these findings to human adolescents, as they were examining the effects of social deprivation on adolescents during the Covid-19 lockdown and concluded that adolescents are disproportionately affected by physical deprivation from their peers.

Comorbidity, the concurrent occurrence of more than one mental health disorder, is typical for individuals with SAD. According to a meta-analysis as many as 69-99% of individuals with SAD have one or more comorbid disorder (Steinert et al., 2013). In his review study, Keller (2006) found that adults with SAD and comorbid severe depression, were more likely to have other anxiety disorders, lower socio-economic and educational status, disability covering more areas of social functioning and lower life quality than individuals without severe depression comorbidity.

Garzia-Lopez et al., (2016) studied a clinical sample of adolescents with SAD and found that those with one comorbid disorder, the most common were specific phobia (48.9%), generalized anxiety disorder (26.1%), ADHD (7.6%), and dysthymic disorder (5.4%). According to a study conducted by Essau and colleagues (1999) the most common comorbid disorders among adolescents with SAD were somatoform disorders (41.2%), any depressive disorder (29.1%), and substance use disorders (23.5%). Comorbidity is associated with worse treatment outcome in adolescents and in young adults (Beesdo-Baum et al., 2012).

Research has found several risk factors for the development of SAD in adolescence. According to a systematic review, the heritability rates for SAD vary between 13% and 76% (Moreno et al., 2016). The contribution of hereditary factors to the development of SAD has been examined in few studies (Olson, 2021). It has been suggested that behavioural inhibition, an innate temperament style characterized by experienced distress in novel situations and with unfamiliar people, increases the risk for SAD (Caouette & Guyer, 2014). In addition, a suggested pathway aiming to explain the development of SAD is intergenerational transmission, with multiple studies associating SAD in the offspring to a heightened probability of SAD in the parents (Halldorsson et al., 2018; Isomura et al., 2015). However, presence of hereditary risk factors does not automatically lead to the development of

SAD (Spence & Rapee, 2016). Most researchers emphasize the impact of environmental factors in addition to hereditary factors, such as intra-familial factors (Rapee & Spence, 2004) and extra-familial factors (Ranta et al., 2013).

In adolescence, the further development of the prefrontal cortex enables new cognitive functions, such as the increase of self-consciousness, self-regulation, and metacognition (Steinberg, 2005). Self-consciousness reaches its peak in adolescence (Rankin et al., 2004), and it seems that acute self-consciousness in early adolescence may operate as a risk factor for subsequent onset of SAD (Haller et al., 2015). The development of social cognition in adolescence, i.e., increased novelty-seeking, emotional lability, and social salience, are fundamental for seeking independence, however, may also place adolescents to a vulnerable position in respect of mental health disorders (Kilford et al., 2016). With advancing cognitive capabilities the young person is able to compare all the more vividly themselves to others, focus increasingly on oneself and form more versatile interpretations of others' thoughts and feelings (Moshman, 2011; Blakemore & Mills, 2014).

The significance of environmental risk factors for the development of SAD has been studied, both with respect to intra-familial factors, such as parenting (Rapee & Spence, 2004) and extra-familial environmental factors, such as traumatic social events (Ranta et al., 2013). Dysfunctional parenting, especially overprotective parenting style and parental modelling of fear responses are connected to the development of SAD (Rapee & Spence, 2004). As the parents' role in the increasingly independent life of the young person becomes less and less meaningful, familial factors do not cover all the social and interactional risk factors contributing to the occurrence of SAD in adolescence.

Peer victimization (PV) has been found to associate with internalizing psychopathology, such as depression and anxiety among adolescents (Brunstein Klomek et al., 2007). There is some research evidence indicating that antecedent PV may lead to subsequent social anxiety (Storch et al., 2005). Ranta and colleagues (2013) studied over 2000 Finnish adolescents aged 15-17 in a longitudinal study, reporting their experiences of direct and relational PV. The purpose of this follow-up study was to examine the interaction between PV and SAD. Direct PV refers to physical or verbal aggression, whereas relational PV to intentional manipulation of interpersonal relationships and social status (e.g., leaving somebody out of a group). The authors found a bidirectional association between direct PV and SAD among boys and that relational PV predicted SAD among girls. The results from the study by Ranta and colleagues (2013) also showed that the percentage of relational PV increased, the older the participants were. The finding is intuitive, since physical and verbal aggression is

more common among younger children, whereas the manipulation of social relationships requires more versatile cognitive abilities.

Adolescence may be a particularly sensitive developmental phase for the negative impacts of PV, as the importance of peers and the need for approval increase as the individual becomes more independent from his/her parents (Kilford et al., 2016; Platt et al., 2013). It is possible, that this is one of the reasons why adolescence is such a sensitive phase for the onset of SAD.

1.2. The Cognitive Model of Social Anxiety Disorder

In 1995, David M. Clark and Adrian Wells introduced the cognitive model of SAD. The model explains the development and maintenance of social anxiety as the result of interacting effects of negatively biased thoughts and beliefs, self-focused perception, and safety-seeking behaviours performed in a social situation. Cognitive therapy treatment based on this theoretical model was originally developed for adults. However, during the last ten years research examining the cognitive factors underlying SAD in adolescent samples (Leigh & Clark, 2018), and the cognitive therapy treatment model as applied to adolescents has increased (Melfsen et al., 2011; Ingul et al., 2013; Leigh & Clark, 2016; Creswell et al., 2021). The cognitive model is displayed in Figure 1.

According to the cognitive model of SAD prior negative or traumatic social experiences of the individual affect how they perceive social situations. When the individual enters a new social situation (rectangle on top, Fig. 1), memories from such situations arise and assumptions based on sequence of the events, and cognition, emotions, perceptions experienced in the prior situation are activated on to the present (second rectangle from top, Fig. 1). This process leads to anticipation of danger in the present situation (third rectangle from top, Fig. 1) and triggers a threat response, which then leads to series of cognitive, affective, and somatic responses that maintain and aggravate feelings and bodily sensations related to anxiety response in the situation (rectangle at the bottom right corner, Fig. 1). When this happens, attention shifts from the external environment to the individual's internal sensations. (Clark & Wells, 1995).

According to the cognitive model of SAD the individual becomes increasingly aware of him/herself and forms negatively-valenced predictions of how he/she is coming across to others. For a significant part, this is caused by focus of attention inwards, which makes the bodily and emotional anxiety responses appear stronger for the individual. Furthermore, another consequence of inward- focused attention, accurate observations of the reactions of

other people in the situation are compromised. In the situation, the individual subsequently constructs a picture of how he/she is coming across, mainly according to how he/she feels on the bodily and emotional level, which does not correspond with reality (circle in the middle, Fig. 1).

The key maintaining factor of social anxiety on the behavioural level, also affecting the processing of information by individuals with SAD in a social situation, is their engagement in safety seeking behaviours (rectangle at the bottom left corner, Fig. 1). According to the cognitive model of SAD, the function of safety behaviours for the individual is to prevent feared social outcomes and catastrophes from happening. (Clark & Wells, 1995).

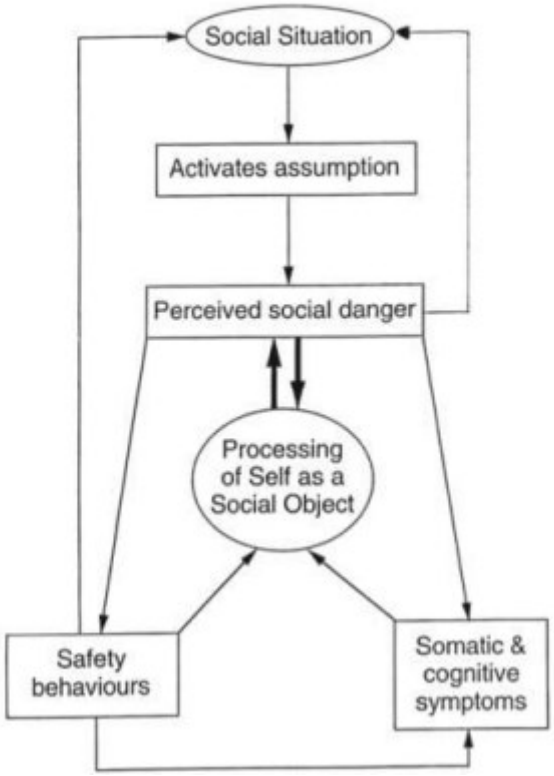

Figure 1. The cognitive model of social anxiety disorder (Clark & Wells, 1995).

The cognitive model includes two additional cognitive activities performed by the socially anxious individual outside the social situation that contribute to the onset and maintenance of social anxiety: anticipatory worry and negative post-event processing. Individuals with SAD typically anticipate what will happen in a social situation and frequently practise how to act in advance. However, anticipatory worry triggers further negative cognitions and causes the individual to feel more anxious when entering the situation. Frequently, they will form a mental image of themselves or a cognitive script of how they will come across in the upcoming situation and believe it to be true. In some cases, this leads to a

complete avoidance of the situation. However, if the individual decides to go, the negative beliefs and anxiety will dominate their thoughts during the event. Individuals with SAD also engage frequently in negative post-event processing, reviewing social interactions and their performance in them in a negative light and in detail after the event. (Clark & Wells, 1995).

Studies with socially anxious adolescents show indeed, that they display exaggerated negative beliefs about themselves (Norton & Abbott, 2016). Furthermore, they believe that the way they behave, does not meet social norms (Moscovitch, 2009; Ranta et al., 2022). Socially anxious adolescents make negative assumptions about their personality, appearance, and social skills, and perceive others as highly critical (Schreiber & Steil, 2013). A study conducted by Miers and colleagues (2014) discovered that post-event processing is associated with increased avoidance behaviours among socially anxious adolescents.

Finally, complete avoidance of social situations is also seen as a maintaining factor in the cognitive model of SAD; avoiding an anxiety evoking situation prevents any contradicting evidence for the notion that the feared outcome is not likely to occur (Clark & Wells, 1995).

1.3. Social Anxiety and Perceived Self-Deficiencies

According to theory presented by David Moscovitch, individuals with SAD hold particularly negative, persistent and wholistic beliefs about their personality characteristics, physical appearance, abilities to control or hide visible signs of anxiety, and social skills, which may represent the core beliefs in SAD (Moscovitch, 2009). According to this theory, individuals with SAD experience their personality and personal characteristics as deficient and falling short of what is expected. These negative attributes of self, self-deficiencies, are formed, when the individual anticipates, acts, performs, or reflects upon a social situation, and interprets events, and behaviours and presumed characteristics other people in the outside world according to their cognitive-emotional inferiority schemas. Accordant with the cognitive model of SAD, they shift their attention inwards, engage in self-monitoring, and see themselves in a negative light, according to their experienced self-deficiency schema.

In addition, according to Moscovitch (2009), individuals with SAD see others as highly critical and appraise their own social performances as inferior compared to others'. They fear that catastrophic consequences, for example loss of self-worth, loss of social status and social rejection become reality, if they reveal aspects of their negatively defined self in social interactions. This leads to fears that they will be perceived as boring, uncool, sweaty, or blush-

prone by others. Thus, they will form a behavioural tendency to self-conceal in social situations (Moscovitch, 2009).

Adolescence is an essential period for the development of the self and identity (Erikson, 1968; Harter, 2012). Peers are an important part of this development, as the young person is continuously comparing him/herself to his/her peers and given the adolescents' tendency to focus on personal characteristics and self in social situations, a likelihood for heightened social anxiety emerges (Sebastian et al., 2008; Clark & Wells, 1995). Sebastian and colleagues present the idea of "looking glass self", described first by Cooley (1902, p. 179-185), where the focus on others' perspective has and increasing role in the self-concept of adolescents compared to children (Sebastian et al., 2008). It is conceivable that perceived self-deficiencies, such as those presented by Moscovitch (2009), will induce heightened sense of social threat. Such negative self-attributes would also be detrimental to the development of positive identity and self-esteem of the young person.

The effects of social comparisons to the development of self-concept have been studied among adolescents (van der Aar et al., 2018). In their study, van der Aar and colleagues (2018) discovered, that children and younger adolescents (9-14 years) had more positive self-views than older adolescents (15-17 years). They concluded that the reason behind this division, is due to the increase of domain-specific self-concepts in later adolescence. The domain-specific self-concepts are distinctive beliefs and evaluations about different traits and competencies, for example academic self-concept and social self-concept (Harter & Bukowski, 2012). Adolescents rely more on external feedback than younger children and compare themselves to others separately on each domain (van der Aar et al., 2018).

1.4. Safety Behaviours

In the cognitive model of SAD by Clark and Wells (1995), in-situation safety behaviours are presented as one of the key maintaining factors in SAD (see Figure 1). According to the model, both safety- and avoidance behaviours are means of emotional regulation. In social situations safety behaviours are all kinds of usually deliberate actions, which are performed with the aim of relieving anxiety, to gain sense of safety and to prevent feared outcomes (i.e., social catastrophes) from occurring (Salkovskis, 1991; McManus et al., 2008). In contrast, avoidance behaviour occurs when the upcoming social situation causes excessive amounts of anxiety to the individual and results in avoiding the situation completely (Clark & Wells, 1995).

The causal role of safety behaviours and self-focused attention as the maintaining factors of SAD in adult samples have been studied in multiple studies (McManus et al., 2008;

Piccirillo et al., 2016). Safety behaviours are dependent on the specific fears the individual experiences in social situations, and the individual usually beliefs these behaviours to be helpful in reducing their anxiety (McManus et al., 2008). In their study McManus and colleagues (2008) found it difficult to measure safety behaviours, since any behaviour can potentially function as a safety behaviour. For this reason, they used semi-structured interviews in addition to self-report measures to assess the participants' safety behaviours. Safety behaviours, according to Clark and Wells (1995), include for example talking too fast or silently, avoiding eye contact, staying on the edge of groups, or wearing lots of makeup.

According to Moscovitch (2009), safety behaviours linked to the core fears of the individual, i.e., beliefs related to their experienced self-deficiencies are of primary importance in SAD. In his article, Moscovitch (2009) presents the core fears for individuals with SAD, which he describes as "characteristic of self that they perceive as being deficient or contrary to perceived societal expectations or norms" (Moscovitch, 2009, p. 125). These core fears can be divided into four dimensions: 1) perceived flaws in social skills and behaviours, 2) perceived flaws in concealing possible signs of anxiety, 3) perceived flaws in physical appearance, and 4) perceived characterological flaws, for example in personality. These dimensions can, and in most cases will appear simultaneously. A situation is considered threatening if these self-deficiencies are at risk of exposure and the individual does not successfully perform self-concealment strategies (i.e., safety behaviours) (Moscovitch, 2009). For example, the individual might fear that other people find out they are boring. According to Moscovitch, this can lead to avoidance of talking about oneself or to asking a lot of questions during a conversation. In addition, the individual might use excessive self-censoring in the conversation, or practice topics to talk about in advance (Moscovitch, 2009).

According to the cognitive model of SAD safety behaviours are unhelpful for multiple reasons (Clark & Wells, 1995; McManus, 2008). Firstly, the individual concludes that they survived the situation only because of safety behaviours. Whenever they rely on safety behaviours in a social situation, it confirms the belief that they are not able to experience a successful social situation. When dropping safety behaviours, the individual would notice that the feared outcome is very unlikely to happen. Secondly, safety behaviours increase self-focused attention, which according to the model maintains and increases anxiety. When individuals with SAD focus on their safety behaviours, for example talking fast to prevent others from noticing that they are boring, it prevents them from capturing others' true reactions during the conversation. These reactions are most likely in contrast with their negative beliefs, but the individuals are too focused on themselves to notice that. Self-monitoring increases

feelings of anxiety, because it causes the individuals to focus more on their internal sensations and not the external environment (McManus, 2008).

The third reason, why safety behaviours are seen as unhelpful according to the cognitive model of SAD (Clark & Wells, 1995), is that they might make the feared outcome true. Talking too fast to appear smarter or to get out of a situation faster, might lead to having to repeat oneself multiple times, which makes the conversation longer and makes others focus more closely on what the individual is saying. Individuals with SAD might look at their phone during a conversation to avoid awkward silences and to avoid being judged as boring. Looking at one's phone during a conversation is usually perceived as rude and contrary to social norms, which is the fourth reason why safety behaviours are unhelpful. Some safety behaviours, such as avoiding eye contact or withdrawing from the group are frequently perceived as unfriendly by other people. Blushing is not seen as deviation of social norms but covering one's face with a turtleneck sweater might be. Clark and Wells (1995) point out that these behaviours of socially anxious individuals are not sufficiently explained with lack of social skills; the deficit of social skills is not present, when they are not feeling anxious and therefore, lack of social skills is more likely due to safety behaviours.

1.5. Research on Safety Behaviours Among Socially Anxious Adolescents

Adolescents have an excessive need to be accepted by others (Fuligni, 2019) and therefore, engaging in multiple safety behaviours in social situations may be particularly unhelpful for them. The amount of research considering the effects of safety behaviours on adolescents with SAD is relatively small. In their experimental study, Leigh and colleagues (2021) illustrated the causal role of safety behaviours and self-focused attention in the maintenance of social anxiety. Their results support the hypotheses that the effects of safety behaviours and self-focused attention are similar in adolescents and in adults. They found that using safety behaviours and self-focused attention increased feelings and appearance of anxiety and it undermined performance in social situations in both high and low self-reported social anxiety groups among adolescents identified from secondary school. However, only adolescents with high social anxiety used safety behaviours and self-focus habitually (Leigh et al., 2021).

Another study (Evans et al., 2021a) conducted, that two types of safety behaviours found in adults: avoidance and impression management (Hirsch et al., 2004), are also found amongst adolescents with SAD. Both avoidance- type (e.g., avoiding eye contact, hiding your face) and impression management- type (e.g., monitoring, and rehearsing sentences in conversations, asking a lot of questions) safety behaviours were found in a clinical sample

of adolescents (aged 11-18 years) with primary SAD diagnosis and a community sample of younger (aged 11-14 years) and older (aged 16-18 years) adolescents collected from secondary schools and sixth form college. In this study the avoidance -and impression management - subtypes of safety behaviours were identified using the Social Behaviour Questionnaire (SBQ; Clark, 2005). However, Evans and colleagues (2021a) further concluded that all of the items could not be placed in the two factors and these two subtypes might not sufficiently cover all safety behaviours found among adolescents.

Subtle Avoidance Frequency Examination (SAFE) is a 33-item self-report measure that was developed by Cuming and colleagues (2009) to measure the use of safety-seeking behaviours. SAFE has demonstrated good internal consistency, construct validity and ability to differentiate between clinical and non-clinical in adult participants (Cuming et al., 2009). In adolescents (aged 14-17 years) clinical and non- clinical samples, SAFE has demonstrated adequate internal consistency, relates positively to other measures of adolescence social anxiety, and differentiates clinical from non-clinical controls (Thomas et al., 2012; (Qasmieh et al., 2018).

Research with adult clinical (adults with primary or additional social anxiety diagnosis, mean age = 33.8) and non-clinical (university students, mean age = 20.2) samples has concluded, that items in the SAFE- measure can be divided into three distinct subscales (Cuming et al., 2009; Piccirillo et al., 2016). According to the factor analysis conducted by Cuming and colleagues (2009), the first subscale includes inhibiting or restricting behaviours to avoid attracting attention (e.g., speaking quietly). The second subscale active behaviours that individuals use to present well in social situations (e.g., rehearsing what to say before a conversation). The third subscale involves managing the physical signs of anxiety (e.g., hiding one's face when blushing). According to Piccirillo and colleagues (2016) these three subscales in the SAFE- measure are theoretically comparable to the two safety behaviour- subtypes avoidance and impression management, found in the SBQ- measure (Clark 2005), where subscale 1. Restricting behaviours is comparable to the avoidance- subtype, and subscales 2. Active behaviours and 3. Managing the physical signs of anxiety fall into the impression management- subtype.

Previous research conducted by Okuno and colleagues (2022) divided clinical and non- clinical adolescent samples (aged 14-15 years) into high and low social anxiety and safety behaviour subscales. Social anxiety was measured with Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998) and safety behaviours with SAFE (Cuming et al., 2009). The reported mean in SAFE- scores in the whole sample (n = 134) was 66.19 (SD = 20.24). Okuno

and colleagues (2022) concluded that adolescents who displayed both high social anxiety and safety behaviours exhibited greater levels of functional impairment. A similar study conducted by Qasmieh and colleagues (2018) observed 14-15- year- old clinical and non-clinical adolescent samples and correlations between SIAS- and SAFE- scores. In their study, the correlation between SIAS- and SAFE- scores was $r = .29$ ($p < .01$).

In their study, Evans and colleagues (2021a) observed that among adolescents with SAD and the community sample avoidance- type safety behaviours were more common among younger individuals, whereas older adolescents used impression management- type safety behaviours more frequently. They hypothesized that impression management- type safety behaviours require more versatile cognitive skills that further develop during adolescence. In addition, there is some evidence, that avoidance- type safety behaviours are associated with poorer peer relationships and more negative reactions from interaction partners, than the impression management- type safety behaviours (Plasencia et al., 2011; Evans et al., 2021a).

To the best of my knowledge, there is no previous research examining the three safety behaviour- subscales in the SAFE- measure (1. Restricting behaviours, 2. Active behaviours, and 3. Managing physical signs of anxiety) among adolescents. However, Moscovitch and colleagues (2013) examined these three subscales among adults with SAD (mean age 33.7 *SD*= 12.0). In their study, the mean SAFE- score was 90.7 (*SD*= 20.1) and the mean scores for the three subscales were: 1. Restricting behaviours (38.6), 2. Active behaviours (39.1), and 3. Managing physical signs of anxiety (13.4) among adults with SAD and without depressive disorder (Moscovitch et al., 2013). Furthermore, Wong and colleagues (2022) studied two samples of undergraduate students and community adult participants with social anxiety symptoms. Sample 1 included undergraduate students (aged 18-48 years), and their mean scores in the three subscales of SAFE were: 1. Restricting behaviours (35.65), 2. Active behaviours (28.67), and 3. Managing physical signs of anxiety (12.23) (Wong et al., 2022).

In their study of an adult sample, Plasencia and colleagues (2011) examined the different effects of the safety behaviour subtypes in SAD. They concluded, that whilst impression management- type safety behaviours do not elicit as negative reactions from interaction partners as avoidance- type safety behaviours, they are still damaging. According to Plasencia and colleagues (2011), this should be considered when tailoring cognitive therapies by planning behavioural experiments that encourage spontaneity. In addition, it could be useful to explain the participant using impression management- type safety behaviours that being their authentic self is more helpful than creating an inauthentic façade to please other

people (Plasencia et al., 2011). It is important that the positive feedback from the interaction is associated with the person him/herself and not the safety behaviours used (Clark & Wells, 1995). In contrast, cognitive therapy for participants who engage in avoidance- type safety behaviours should, according to Plasencia and colleagues (2011) contain attention shifting exercises, in order for the participant to notice other's reactions when they are dropping the avoidance- type safety behaviours. Evans and colleagues (2021a) suggest that since older adolescents use more impression management- type safety behaviours, their symptoms might be less noticeable to others, which makes it important to actively screen social anxiety in schools. Furthermore, adolescents using the avoidance- type safety behaviours are more likely to be exposed to victimization, which should be considered in treatment (Evans et al., 2021a).

According to the research done by Plasencia and colleagues (2011), avoidance-type safety behaviours were associated with negative social outcomes such as increased social rejection. In their experiment, using avoidance strategies did not reduce anxiety in social interactions, contrary to the general belief that avoidance behaviours decrease anxiety levels in exposure tasks (Plasencia et al., 2011). However, contrary to previous studies on the effects of safety behavioural subtypes in adolescents (Evans et al., 2021a), Plasencia and colleagues (2011) found that also impression management- subtype was associated with negative social outcomes in adults. Evans and colleagues (2021a) concluded that adolescents who used more avoidance- type safety behaviours were younger, reported more frequent peer victimization experiences, had lower social satisfaction and friendship quality than adolescents who used impression management- type strategies. Adolescents are more sensitive to peer feedback (Kilford et al., 2016) and experience heightened distress from rejection (Platt et al., 2013) than any other age group, and are since more vulnerable to the effects of avoidance- type safety behaviours, which usually results in hiding in social situations or complete avoidance of social situations (Evans et al., 2021).

1.6. Early Interventions for Social Anxiety Disorder

The recommended, evidence-based treatment options for SAD among children and young people include cognitive therapy and cognitive behavioural therapy (NICE, 2013). Cognitive behavioural therapy (CBT), which is characterized by teaching patients cognitive and behavioural skills to help them gain competence in their lives, typically includes exposure, cognitive restructuring, relaxation training and social skills training (Heimberg, 2002). A cognitive therapy model (CT-SAD), based on the cognitive model of SAD (Clark & Wells, 1995), aims to help individuals drop safety behaviours and redirect attention outwards. In

addition, CT-SAD contains behavioural experiments instead of traditional exposure (Clark et al., 2006).

Early interventions of SAD are important due to the early onset and detrimental consequences of the disorder (Herbert et al., 2009). Adolescence is a particularly efficient period for cognitive interventions due to increased plasticity and learning during that age period (Haller et al., 2015). One of the early treatments examined in a controlled study for adolescent SAD was CBGT-A (Albano, 1995; 2007), a developmental adaptation of the group CBT treatment for adults with SAD. The CBGT-A makes use of the group format in many ways, with the aim of evoking peer support and exposure practices with the same aged peers (Albano et al., 1995).

A well-known CBT- based intervention for adolescents is the Skills for Social and Academic Success (SASS) program, which combines group and individual sessions (Fisher et al., 2005). The SASS program is an early low threshold treatment that includes psychoeducation, cognitive restructuring, social skills training. Another CBT- based intervention is the C.A.T project, which is modified for adolescents from the original intervention for children "The Coping CAT", which includes modelling, relaxation, *in vivo* exposures, problem solving and help to cope with anxiety, and it has been used to treat anxiety disorders in general (Kendall & Hedtke, 2006).

There is no sufficient evidence, whether diagnostic specific treatment is more effective than transdiagnostic treatment. Spence and colleagues (2017) compared in an adolescent sample social anxiety-specific treatment to generic CBT and found no difference between the two treatments. However, there is evidence that transdiagnostic treatment models are not as effective for the treatment of SAD compared to other anxiety disorders (Evans et al., 2021b).

According to David Moscovitch, significant number of individuals with SAD experience symptoms after treatment (Moscovitch, 2009). Exposure as a part of CBT is a conditioning process, in which the individual exposes him/herself to an anxiety evoking situation and persists in that situation until anxiety symptoms decrease (Heimberg, 2002). Moscovitch (2009) emphasized the importance of an individualized case formulation, where the core fears of each individual are established, and treatment is customized based on those core fears. Moscovitch presents five ways to improve treatment of SAD: 1) assessing anxiety symptom profiles, 2) shifting the emphasis from situational exposure to dimension-specific exposure, i.e., basing the exposure on typical dimensions of self-deficiencies experienced by individuals with SAD, 3) developing creative strategies to self-exposure and eliminating self-

concealment (e.g., using video feedback), 4) challenging patients' misperceptions of social norms and costs of violating them (e.g., social mishap experiments), and 5) challenging patients' view of critical audience (e.g., surveys). Exposure exercises should target these core fears instead of feared outcomes (Moscovitch, 2009).

Compared to adolescents with other anxiety disorders, adolescents with SAD are less likely to recover after CBT (Evans et al., 2021b). It has been proposed, that more developmentally sensitive treatment models are needed for achieving better treatment outcomes for adolescents with anxiety disorders and SAD (Baker et al., 2021; Leigh & Clark, 2018). Leigh and Clark (2016) performed a pilot study among adolescents, using a developmentally adapted treatment manual, based on the cognitive model of SAD (Clark & Wells, 1995). Although the sample size was small, all five adolescents with severe SAD reported remission after treatment and at six-month follow-up (Leigh & Clark, 2016).

In their article, Leigh and Clark (2018) reviewed the applicability of the Clark and Wells' (1995) model to adolescents. They concluded that negative social cognitions, that is the negative assumptions of self, others and social situations, occurred more often with these adolescents, the higher their Social Phobia Inventory (SPIN; Connor et al., 2000) or Social Phobia Anxiety Inventory (SPAI; Turner et al., 1989) score was. Although all the studies Leigh and Clark (2018) reviewed were correlational, they supported the cognitive model of SAD.

In their article, Leigh and Clark (2018) also reviewed studies of self-focused attention among adolescents with SAD. Higher scores of self-focused attention, which were measured with Focus of Attention Questionnaire (FAQ; Woody, 1996) were associated with higher social anxiety. In addition, negative self-images in social situations were associated with SAD (Leigh & Clark, 2018). Hignett and Cartwright-Hatton (2008) examined in their study the phenomenon that negative self-images in SAD tend to be from the observer's perspective. They found that as the adolescents' social anxiety increased, they viewed themselves from the observer's perspective more often. According to the cognitive model (Clark & Wells, 1995), self-focused attention increases the use of internal information to interpret social situations. Leigh and Clark (2018) summarized multiple studies where the heart rates of adolescents with SAD and control groups were compared. No difference was found between the two groups, even though the SAD -group rated themselves more physiologically aroused with the Beck Anxiety Inventory (BAI; Beck et al., 1988). This suggests that adolescents use internal information (e.g., heart rate or sweating) as evidence that they appear anxious in social situations, when in reality they show no more visual signs of anxiety than control groups.

Leigh and Clark (2018) presented studies that measured the use of safety behaviours and concluded that adolescents with SAD used more safety behaviours than control groups. They also made the division to avoidance- and impression management- subtypes and concluded that avoidance- type safety behaviours are associated with negative social interactions. In their review, Leigh and Clark (2018) found studies that support pre-and post-event processing, which are described in the cognitive model of Clark and Wells (1995), amongst adolescents with SAD. In conclusion, efficient treatment components for adults that target self-focused attention, fear of negative evaluation and safety behaviours, are also applicable for adolescents.

1.7. DOCT-SAD (Tosi Minä- Treeni)

DOCT-SAD (Developmentally Oriented Cognitive Therapy for Social Anxiety Disorder, in Finnish: Tosi Minä- Treeni) is a CT- based group intervention for adolescents with SAD. It was developed in Tampere University and is based on the work of David M. Clark and Eleanor Leigh (2016). The intervention emphasizes the developmental aspects of adolescence and the importance of peer relationships. The primary focus of this intervention was to provide normalizing psychoeducation and encourage adolescents to engage in spontaneous interaction as themselves. One central aspect of adolescence is the development of identity (Moshman, 2011). DOCT-SAD provides tools for these young people not to lean too much on the acceptance of others and to accept themselves as they are, while normalizing the phenomenon of seeking acceptance from others. The intervention is implemented in groups, which exposes the individuals to social interactions and provides peer support.

The guiding principles of DOCT-SAD are:

1. The development and maintenance of SAD are understood in the framework of the cognitive model of SAD (Clark & Wells, 1995).
2. The treatment considers the core self-related fears of adolescents as presented by Moscovitch (2009), when evaluating the social feared stimulus.
3. Negative beliefs and disorder-maintaining behaviours are targeted by developmentally appropriate behavioural experiments.
4. Understanding the specific factors of individual development and peer relationships in adolescence.
5. Specific focus on normalization, development of self-identity, alleviation of self-criticism through self-compassion, and peer support.

The intervention is composed of four individual sessions and six group sessions. First two individual sessions include assessment, case formulation and psychoeducation, and later two behavioural experiments, working with possible traumatic memories and self-compassion exercises. Normalizing begins in the individual sessions and continues in the group sessions. Peer support is an important aspect of DOCT-SAD. The main goal of the intervention is to help the participants eliminate in-situation safety behaviours and to indulge in spontaneous interaction with others. The participants are encouraged to actively take part in the group sessions, to gain maximum benefit from the intervention. Behavioural experiments and normalizing psychoeducation are carried out both in the individual and in the group sessions. Behavioural experiments target the core fears of the participants, which are identified in the first individual sessions. In addition, the group sessions include attention training, experimental experiments, improvisation experiments, social mishap experiments and homework.

I present the following research questions:
1. Will the symptoms of SAD measured with the SPIN- measure decrease after DOCT-SAD?
2. Will safety behaviours measured with the SAFE- measure decrease after DOCT-SAD?
3. Will the descriptive examination of adolescents' safety behaviours generate similar results as previous studies, regarding the three subscales included in the SAFE- measure (1. Restricting behaviours, 2. Active behaviours, and 3. Managing physical signs of anxiety) and will there be age differences between younger and older adolescents on these three safety behaviour subtypes.

Based on previous research, my hypotheses are that:
1. Overall symptoms of SAD, measured with SPIN will decrease from pre- to post-treatment after DOCT-SAD,
2. Safety behaviours, measured with SAFE, will decrease from pre- to post-treatment after DOCT-SAD, and
3. In a descriptive examination of safety behaviours, three components are found (1. Restricting behaviours, 2. Active behaviours, and 3. Managing physical signs of anxiety), and their frequency differs between the younger and older participant group.

2. METHODS

2.1. Participants

Participants (n = 10) were students from five upper secondary schools in Tampere. At baseline assessment the mean age of participants was 13.8 years (SD = 0.92). Nine (90%) were girls, one (10%) was a boy. Adolescents reported having suffered of symptoms of social anxiety approximately two years prior to treatment (mean 2.3 years, SD = 0.82). All participants had had a previous contact with the school health and welfare services, either to school psychologist, nurse, or social worker. Two participants reported having been previously treated or evaluated in child/adolescent psychiatric services. None of the participants had been previously treated for SAD. All participants were Caucasian, and 90% had Finnish as their native language. Of the participants, four (40%) had a comorbid depressive disorder and five (50%) had a comorbid anxiety disorder. Baseline characteristics are shown in Table 1.

Baseline characteristics	**GROUP 1**	**GROUP 2**	**GROUPS 1&2**
	***n* = 5**	***n* = 5**	***n* = 10**
Age (Mean [SD])	13 (0.0)	14.6 (0.55)	13.8 (0.92)
Gender	4 (80%) females	5 (100%) females	9 (90%) females
Pre -treatment scores (Mean [SD])			
SPIN	44.8 (12.91)	40.2 (9.5)	42.5 (10.96)
SAFE	68.6 (27,74)	65 (20.89)	66.8 (23.23)
CSR	6 (1)	4.8 (0.84)	5.4 (1.08)
Comorbid disorders			
Dysthymia	2	-	2
Depression NOS	-	2	2
Any depressive disorder	2	2	4
Generalized anxiety disorder	-	2	2
Anxiety disorder NOS	-	1	1
Specific phobia	1	1	2
Any anxiety disorder	1	4	5

Table 1. Baseline characteristics of the participants.

2.2. Procedure

This study reports results from a pilot trial of DOCT-SAD for treatment of adolescents with SAD identified at school health and welfare services. The DOCT-SAD interventions were conducted at the teaching and research clinic at Department of Psychology, Tampere University. The two therapists were graduate major psychology students, who received theoretical and clinical training by an experienced cognitive therapy trainer. The study was

reviewed and approved by the Regional Ethics Committee of the Expert Responsibility area of Tampere University Hospital.

Screening, the first stage

The school welfare and health service (SWHS) professionals were regularly met. They were instructed to use a toolkit (i.e., a checklist) to detect possible cases of SAD. After reviewing the checklist, they provided the researchers with the phone numbers and SPIN -scores of the eligible cases.

Second stage

The researchers conducted a mobile phone assessment with both the adolescent and a parent, in which the diagnostic criteria and primary SAD were assessed. Possible comorbid depressive and anxiety disorders were reviewed, as well as motivation to participate in the intervention. If the intake criteria were met, or deemed very likely to be met, the adolescent and their parent(s) were invited at the university for a first assessment face-to-face interview.

Third stage

The young person and their parent(s) were met for the full diagnostic interview at the university, which concluded the first individual session. The primary SAD and possible comorbid disorders were further confirmed.

2.3. Primary Outcome Measures

Social Phobia Inventory SPIN

SPIN is a 17-item self-report measure of SAD symptoms with good internal consistency, test-retest reliability, and convergent and divergent validity to assess SAD (Connor et al., 2000). The three symptom areas of SAD as defined in the DSM-5: avoidance behaviours, physical symptoms, and social fears during previous two weeks, are assessed by SPIN (Connor et al., 2000). SPIN has been found reliable and valid measure of SAD among Finnish adolescents (Ranta et al., 2007). Remission according to SPIN was determined as points under 24, which is the clinical cut-off point according to research (Ranta et al., 2007).

Subtle Avoidance Frequency Examination SAFE

SAFE is a 33- item self-report measure that has demonstrated adequate psychometric properties such as relatively high internal consistency, and some evidence of convergent and criterion

validity, when administered to for socially anxious adolescents (Cuming et al., 2009; Thomas et al., 2012; Qasmieh et al., 2018). The SAFE items are rated from 0-5 in accordance with how frequently they engage in the behaviours (0: "Never", 5: "Always"). The three safety behaviour subscales 1. Restricting behaviours, 2. Active behaviours, and 3. Managing physical signs of anxiety are hereafter referred as 1. RB, 2. AB, and 3. MP, respectively.

2.4. The Diagnostic Evaluation and Severity of SAD

The Diagnostic Interview

The diagnostic interview was carried out at the first face-to-face interview with the participating adolescents and their parent(s). Symptoms of SAD and possible comorbid disorders were systematically reviewed according to the DSM-5 (American Psychiatric Association, 2013) and diagnoses were assigned accordingly. After the intervention a remote interview, where the diagnostic criteria were evaluated again with the adolescent and the parent was conducted.

Severity of SAD - CSR

The severity of SAD was determined with the ADIS-5 clinician severity rating scale (CSRs) (Silverman, 1996). The CSRs evaluates the severity and the functional impairment associated with the anxiety symptoms in a scale of 0-8: the clinical cut point for SAD is 4, 4-5: moderate SAD, 6-7: severe SAD and 8: very severe SAD.

2.5. Descriptive Examination of Safety Behaviours

The three components found in the SAFE- measure: 1. Restricting behaviours (RB), 2. Active behaviours (AB), and 3. Managing physical signs of anxiety (MA) (Cuming et al., 2009) were further examined in this study. The mean answers to every question were examined at pre- and post-treatment. In addition, non-statistical comparisons of the three safety behaviour components (RB, AB, and MA) between the younger and older groups at pre- and post-treatment were conducted.

2.6. Statistical Analysis

Data were analysed with IBM SPSS statistics version 28. Due to a small sample size (n = 10) the data were not normally distributed. Therefore, the non-parametric alternative to paired samples t- test, Wilcoxon signed ranks test was used (Cleophas & Zwinderman, 2016). Statistical methods included comparing means and calculating effect sizes (Cohen, 1988).

3. RESULTS

3.1. Symptom Change in the Primary Outcome Measures

SPIN. SPIN measures the overall symptom change of SAD. The pre- and post-treatment scores of the SPIN- measure were examined in the whole group (n = 10). The mean pre- post- change was –18.75 (Z = -2.80, p = .005, d = 1,614). Remission according to SPIN was 60%.

SAFE. The SAFE- measure was used to detect the occurrence of safety behaviours in the participants. The pre- and post-treatment scores of the SAFE- measure were examined in the whole group (n = 10). The mean pre- post- change was – 31.4 (Z = -2.80, p = .005, d = 1.614). (Connor et al., 2000).

3.2. Diagnostic Remission and Severity of SAD

Diagnostic Remission. At post-treatment, six out of ten (60%) adolescents were in diagnostic remission. All participants that were not in diagnostic remission, and one in remission, had comorbid depression or anxiety.

CSRs. The mean change of pre- and post-treatment CSRs, which was used to determine the severity of participants' SAD, was -2.3 (Z = -2.68, p = .007, d = 1.497). See Table 2.

	Pre- treatment Mean (SD)	Post-treatment Mean (SD)	Pre-post-change	P- value[1]	Effect size[2]
SPIN	42.5 (10.96)	23.75 (9.28)	-18.75	0.005	1.614
SAFE	66.8 (23.23)	35.3 (17.4)	-31.5	0.005	1.614
CSRs	5.4 (1.07)	3.1 (1.1)	-2.3	0.007	1.497

[1] Wilcoxon signed ranks test
[2] Cohen's *d*

Table 2. Pre- and post-treatment mean change and effect sizes in the SPIN- and SAFE-measures and CSR in the whole group (n = 10).

3.3. Descriptive Examination of Safety Behaviours

Items in the SAFE- measure were divided by Cuming and colleagues (2009) into three subscales: RB, AB, and MA (Cuming et al., 2009). In the present study, items in the SAFE- measure were similarly divided into three subscales (RB, AB, and MA), and mean answers to every question were calculated. Distribution of answers in the SAFE- measure in the three subscales at pre- and post-treatment are shown in Figure 2.

At pre-treatment, group 1 used more subscale 1 (RB)- safety behaviours than group 2, when comparing the mean scores of the SAFE- subscales (see Table 3). In contrary, group 2 used more subscale 2 (AB) and 3 (MA)- safety behaviours than group 1 at pre-treatment.

Safety behaviours in all three subscales decreased at post-treatment, as seen in Table 3. The greatest change in mean scores was in subscale 2 (AB) in the younger group (group 1). In contrary, the smallest change in mean scores was in subscale 3 (MA) in the older group (group 2). Group 1 used more subscale 1 (RB) safety behaviours than group 2 at pre- treatment, but not at post- treatment. Group 2 used more subscale 2 (AB) and 3 (MA) safety behaviours than group 1 at pre- and post-treatment. Overall, group 1 had lower mean scores in the SAFE- measure at post-treatment than group 2.

Pre-treatment

Safety Behaviour Subscale	Group 1[1]	Group 2[2]	Total
Restricting	30.6	22.2	26.4
Active	29.2	31.4	30.3
Managing	8.8	11.4	10.1
Total	68.6	65	

Post-treatment

Safety Behaviour Subscale	Group 1[1]	Group 2[2]	Total
Restricting	13.4	16.2	14.8
Active	9.0	19.6	14.3
Managing	3.2	8.6	5.9
Total	25.6	44.4	

[1.] Group 1 mean age: 13 (SD: 0.0).
[2] Group 2 mean age: 14.6 (SD: 0.55).

Table 3. Pre- and post-treatment mean scores on the three safety behaviour subscales 1. Restricting behaviours ("Restricting"), 2. Active behaviours ("Active"), and 3. Managing physical signs of anxiety ("Managing") in both groups 1 and 2.

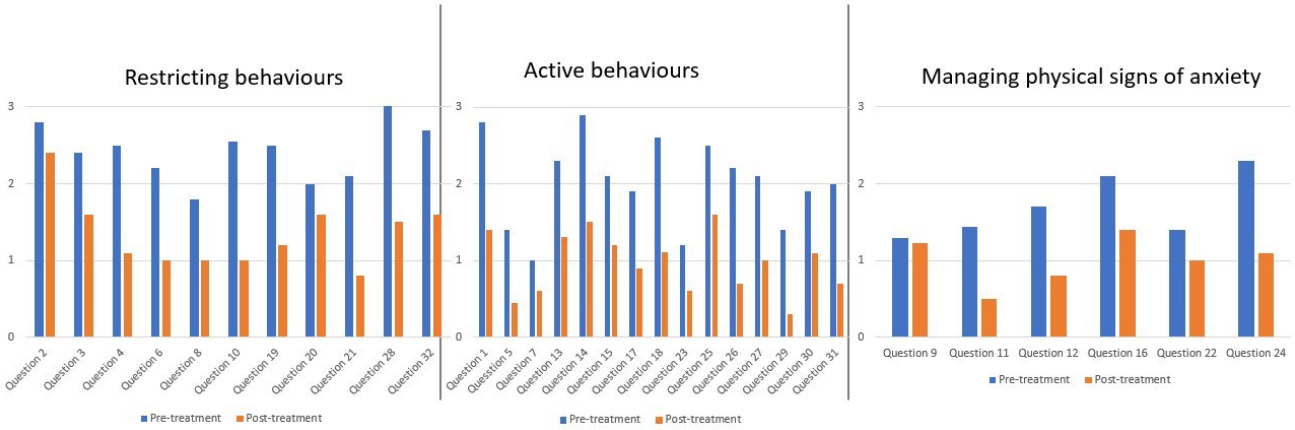

Figure 2. Questions in the SAFE- measure divided into three subscales: 1. Restricting behaviours, 2. Active behaviours, and 3. Managing physical signs of anxiety. Pre- and post-treatment changes in each subscale are presented.

Item		Safety behaviour subscale
1.	Before you arrive, excessively rehearse what you might say or how you might behave	Active
2.	Remain silent	Restricting
3.	Try to keep tight control of your behaviour	Restricting
4.	Speak softly	Restricting
5.	Say 'I'm not usually like this'	Active
6.	Blank out or switch off mentally	Restricting
7.	Hold your arms still	Active
8.	Spend time thinking of good excuses for escaping	Restricting
9.	Wear cool clothes to prevent sweating	Managing
10.	Avoid eye contact	Restricting
11.	Wear clothes or makeup to hide blushing	Managing
12.	Say 'it's hot' to explain sweating or blushing	Managing
13.	Account for poor performance by saying that you didn't have time to prepare	Active

14.	Rehearse sentences in your mind	Active
15.	Spend hours on grooming prior to the situation	Active
16.	Wear clothes that will conceal sweating if it occurs	Managing
17.	Say that you are sick/unwell	Active
18.	Look closely at other people and try to gauge their reactions to you	Active
19.	Avoid asking questions	Restricting
20.	Speak in short sentences	Restricting
21.	Keep still to avoid drawing attention to yourself	Restricting
22.	Hide your face	Managing
23.	Make excuses about your appearance	Active
24.	Check the redness of your face in a mirror	Managing
25.	Try to think about other things	Active
26.	Try to think of reasons why the other person is inferior to you	Active
27.	Avoid pauses in speech	Active
28.	Position yourself so as not to be noticed	Restricting
29.	Hold your cup or glass tightly	Active
30.	Ask others about your performance	Active
31.	Imagine you are somewhere else	Active
32.	Be reserved about what you say	Restricting

Table 4. Items in the SAFE- measure divided into three subscales: 1. Restricting behaviours ("Restricting"), 2. Active behaviours ("Active"), and 3. Managing physical signs of anxiety ("Managing").

4. DISCUSSION

The main aims of this study were to examine whether the overall symptoms of SAD (hypothesis 1) and safety behaviours (hypothesis 2) decrease during Developmentally Oriented Cognitive Therapy (DOCT-SAD) among adolescents with SAD. In addition, descriptive examination of the frequency and pre- to post-treatment change in the three subscales of safety behaviours (hypothesis 3) among adolescents with SAD were conducted in the light of previous research. In addition, frequencies in the three safety behaviour subscales at pre- and post-treatment were examined in the younger and older participant groups. In support of my hypotheses, the symptoms of SAD and the frequency of safety behaviours decreased. Furthermore, the descriptive examination of safety behaviours supported the three subscales of safety behaviours

among socially anxious adolescents, as well as the age differences between the younger and the older group in the three subscales.

Based on findings on the effects of cognitive therapy for SAD in adolescents and basic research on safety behaviours in adolescents with social anxiety (Leigh & Clark, 2016; Leigh & Clark, 2018), the SPIN- and SAFE- scores were expected to decrease. DOCT-SAD stresses psychoeducation on safety behaviours and their effects on social anxiety, and active examination, identification, and monitoring of individual safety behaviours of each participant throughout the intervention. Furthermore, a key treatment component of DOCT-SAD is the construction of behavioural experiments helping participants to recognize and drop their safety behaviours. During DOCT-SAD, the therapists use examples from their own experiences on safety behaviours, in order to normalize the phenomenon. In addition, according to the Cognitive Model of SAD by Clark and Wells (1995), safety behaviours are one of the key maintaining factors of anxiety in SAD and recognizing and dropping them is an essential part of reducing symptoms of SAD.

Decrease in SAD symptoms

Symptoms of SAD, measured with the self-reported SPIN- measure decreased significantly during the DOCT-SAD intervention, in support of the 1. hypothesis. The effect size of the mean change at pre- and post-treatment (d = 1.614) was compatible with previous research (Scaini et al., 2016). Among adolescents with SAD, the average effect size for pre-post-treatment design, according to research, varies between 0.86-0.99 (Segool & Carlson, 2008; Scaini et al., 2016). A significant reduction was also gained in the CSRs among adolescents treated with DOCT-SAD and 60% were in diagnostic remission at post-treatment. Both findings provide evidence for reduction of the clinical severity of SAD in the participants. These findings are broadly compatible with results from previous trials of diagnostic-specific SAD treatments for adolescents (Yang et al., 2019).

Similar to a previous longitudinal study with participants aged 14-24 years from a German community sample (Beesdo-Baum et al., 2012), comorbid disorders were associated with worse treatment outcome compared to participants who did not have comorbid disorders, all participants in the present study not in diagnostic remission (40%) had comorbid diagnoses.

Decrease in safety behaviours

Supporting the second hypothesis, safety behaviours, measured with SAFE decreased during the DOCT-SAD- intervention. There are fewer previous studies examining safety behaviours

among adolescents with SAD. However, Leigh and Clark (2016) used cognitive therapy (CT-SAD) to treat five adolescents with SAD and found a 66.7% decrease in SBQ (Social Behaviour Questionnaire, Clark 2005) -scores, which were used to measure safety behaviours among five adolescents with SAD. Similarly in the present study, safety behaviours, although measured with SAFE, decreased 47.1% among all participants.

Scores in both SPIN- and SAFE- measures decreased significantly from pre- to post-treatment, indicating a decrease in SAD symptoms and safety behaviours in the adolescents during DOCT-SAD. These results are concurrent with findings from previous CBT- treatment trials for SAD (Evans et al., 2021b; Scaini et al., 2016) and results from CT for SAD, based on the cognitive model of SAD (Leigh & Clark, 2016, Creswell et al., 2021). Several studies have shown an association between dysfunctional safety behaviours and social anxiety symptoms in adolescent samples (Schreiber et al., 2012; Thomas et al., 2012; Ranta et al., 2014). According to these studies, adolescents with more severe symptoms of social anxiety, use more safety behaviours than controls. In their study, Schreiber and colleagues (2012) found using sequential regression analysis, that key clinical variables delineated by the cognitive model of SAD, among them the use of safety behaviours, predicted social anxiety symptoms in a population sample of German adolescents. Aligned with these results, in the present study, participants who were in diagnostic remission, had lower SAFE- points at post-treatment (mean 26.7; *SD* = 14.38), than those not in diagnostic remission (mean 48.25; *SD* = 13.84). Similarly, SPIN- scores of the participants in diagnostic remission (mean 18.58; *SD* = 5.46) were lower than those who were not (mean 31.5; *SD* = 8.66).

Descriptive examination of safety behaviours

Items in the SAFE- measure were initially divided by Cuming and colleagues into three subscales in clinical and non-clinical adult samples: 1. Restricting behaviours (RB), 2. Active behaviours (AB), and 3. Managing physical signs of anxiety (MA) (Cuming et al., 2009). To the best of my knowledge, there are no previous studies researching safety behaviour- subtypes among adolescents. In the present study, the mean score in the SAFE- measure in both groups was 66.7 (*SD*= 23.23) at pre-treatment. The mean scores in the three subscales in both groups were: 1. RB (26.4), 2. AB (30.3), and 3. MA (10.1) at pre-treatment. These means are somewhat smaller than in previous research conducted with adult samples (Moscovitch et al., 2013; Wong et al., 2022). However, in the study conducted by Moscovitch and colleagues (2013), the difference between subscale 1 (RB) and subscale 2 (AB) were not as prominent as in the present

study conducted with an adolescent sample. This tentative result suggests that adolescents are more polarized in regards of the safety behaviours they use.

Evans and colleagues (2021a) divided safety behaviours into two distinct subtypes: avoidance and impression management in a population and a clinical sample of 11–18-year-old adolescents. According to Piccirillo and colleagues (2016) these two subtypes, although originally defined in the SBQ- measure, based on empirical research among adults (Clark, 2005), are theoretically comparable to the three subscales found in the SAFE- measure. They concluded that subscale 2 (AB) and 3 (MA) in the SAFE- measure, were comparable to the impression management- subtype, and subscale 1 (RB) in the SAFE- measure was comparable to the avoidance- subtype in the SBQ (Piccirillo et al., 2016).

Similar to the study conducted by Evans and colleagues (2021a), the results in this study implicate differences in the safety behaviours used, depending on the age of the adolescent. The descriptive examination of the results indicates that younger adolescents in group 1 used more safety behaviours in the RB- subscale (1) than older adolescents in group 2. Respectively, adolescents in group 2 seemed to use more safety behaviours in the AB- and the MA- subscales than group 1. The small sample size (n = 10) in the present study limits conclusions on the age differences in the three safety behaviour subscales. However, this tentative result, although similar to Evans and colleagues (2021a), might have been affected by the age differences in groups 1 and 2, which were narrower than in Evans and colleagues (2021a). The mean age of group 1 was 13 (SD = 0.0) and 14.6 (SD = 0.55) in group 2. In the study carried out by Evans and colleagues (2021a), the mean age in the younger group was 12.72 (SD = 1.98), and in the older group 17.12 (SD = 0.72), respectively.

At post-treatment, the older adolescents in group 2 used overall more safety behaviours than younger adolescents in group 1. An interesting result in this sample was that the greatest decrease in safety behaviours was in the AB- subscale in group 1. Out of the three subscales, the AB- subscale decreased the most in group 2, also. This result raises questions, whether the treatment included more components that targeted elements in the AB- subscale than the two other subscales (i.e., RB and MA). Active behaviours include actions aiming to modify the appearance or behaviours of the individual in a way that is more favourable to others. In other words, the individual attempts to please others with his/her behaviour or appearance. The DOCT-SAD intervention emphasizes the benefits of being yourself, despite what other people may think. The treatment encourages adolescents to be more their authentic self and not to excessively worry about what others might think of them.

Limitations and strengths

This study has several limitations. Firstly, the sample size was small; only ten adolescents. Furthermore, conclusions about the effectiveness of the treatment cannot be made without a control group. Thirdly, nine out of ten adolescents were female, which limits the generalizability of the results to males. Fourthly, the diagnostic assessment was not made by independent assessors. Lastly, the study lacked a follow-up assessment, thus conclusions about the permanence of the results cannot be made. There is a need for further studies with larger sample sizes and control groups.

In this study, both the adolescents and their parents were used as informants, which can be considered as increasing the validity and accuracy of the diagnostic evaluation. In addition, self-report measures were used to amplify the adolescents' point of view. All the symptom measures used, were validated to use among adolescents. Lastly, the treatment was modified to be more developmentally sensitive for adolescents.

Implications and conclusions

Adolescence is a particularly sensitive period for the onset and effects of SAD, possibly due to the increased importance of peer relationships, the need to establish independence from parents, and the further development of social cognition (Kessler et al., 2005; Larson & Richards, 1991). Based on developmental and clinical research, there is a need for more developmentally sensitive psychotherapeutic interventions for adolescents, which consider the inherent characteristics of adolescence. The DOCT-SAD -treatment was modified to be more developmentally sensitive and the results indicate that the treatment seems suitable for treating adolescents with SAD. This study consolidates the importance of considering safety behaviours as one of the key maintaining factors of social anxiety in adolescents, and they should be accounted for in treatment. However, the results ought to be interpret with caution, due to the small sample size and a lack of a control group. This study presents promising results for a short, 10- session treatment for adolescents with SAD, although supplement research is needed with larger sample sizes.

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