

1 2 9 0



UNIVERSIDADE D
COIMBRA

Diana Vieira Figueiredo

(e-mail: dianavieiraf@hotmail.com)

Testing Clark and Wells' (1995) Cognitive Model in Adolescents with Social Anxiety Disorder

Dissertação no âmbito do Mestrado Integrado em Psicologia, Área de Psicologia Clínica e da Saúde, Subárea de Especialização em Intervenções Cognitivo-Comportamentais nas Perturbações Psicológicas e Saúde, orientada pelo Professor Doutor Daniel Maria Bugalho Rijo e pela Professora Doutora Paula Emanuel Rocha Martins Vagos e apresentada à Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra

Julho de 2020

**Testing Clark and Wells' (1995) Cognitive Model in Adolescents with Social Anxiety
Disorder**

Diana Vieira Figueiredo

Dissertação no âmbito do Mestrado Integrado em Psicologia, Área de Psicologia Clínica e da Saúde, Sub-Área de Especialização em Intervenções Cognitivo-Comportamentais nas Perturbações Psicológicas e Saúde, orientada pelo Professor Doutor Daniel Maria Bugalho Rijo e pela Professora Doutora Paula Emanuel Rocha Martins Vagos e apresentada à Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra



*“Let's both reclaim our superpowers
The ones we all have and lose with our milk teeth
The ability not to fear social awkwardness
To panic when locked in the cellar
Still sure there's something down there
And while picking from pillows each feather
Let's both stay away from the edge of the bed
Forcing us closer together*

*Let's sit in public, with ice cream all over both our faces
Sticking our tongues out at passers by
Let's cry
Let's swim
Let's everything”*

Keaton Henson

Agradecimentos

Ao professor Daniel Rijo pela honestidade, rigor e compreensão. Acima de tudo, obrigada por nunca deixar de incentivar em mim a curiosidade que me permitiu crescer e por sempre me fazer acreditar nas minhas capacidades.

À Dr^a Paula Vagos por toda a paciência, cuidado e atenção que dedicou à minha aprendizagem. Obrigada por ser a minha *safety net*, principalmente nos momentos em que a estatística se revelou uma verdadeira dor de cabeça.

À Rita por todas as partilhas e conselhos. Obrigada pela tua incansável disponibilidade e compreensão.

A todos os adolescentes que participaram neste estudo, obrigada pela corajosa vulnerabilidade que tornaram este trabalho possível.

Às minha colegas de estágio e tese, pelas palavras de conforto quando os prazos se aproximavam, pela partilha de experiências e pelo à-vontade e honestidade que permitiram as reuniões serem verdadeiros lugares de aprendizagem.

Aos meus amigos mais antigos, em particular, ao Henrique, por ouvir e se interessar por todos os meus devaneios sobre psicologia.

À Joana por, mesmo longe, estar presente em todos os momentos.

À Raquel, à Mariana e à Candeias, por serem a minha família de Coimbra, por, apesar de mais distantes, nunca deixarem de estar, mesmo quando eu não estive. Obrigada pelos cafés, pelos jantares e por todos os momentos que me permitiam “escapar” à realidade alucinante deste último ano. O verdadeiro valor desta aventura reside na possibilidade de a ter partilhado com vocês.

Em particular, à Candeias, pelas boleias, pelas manhãs de sábado na biblioteca, pelos almoços e, acima de tudo, por seres sempre tão verdadeiramente tu.

Ao Dinis, pelo caminho que percorremos juntos e por todo o que está por percorrer. Obrigada por seres a minha fonte inesgotável de *soothing*, por aceitares incondicionalmente quem sou e por estares, sem exceção, e me permitires não estar. Mal posso esperar pelo que virá a seguir.

À minha família, por todo o apoio e compreensão que me permitiram embarcar nesta viagem. À minha mãe, pela coragem que eu sei que corre permanentemente nas suas veias. Obrigada por me permitirem ser quem sou.

A todos vocês,

Obrigada, por tudo.

Testing Clark and Wells' (1995) Cognitive Model in Adolescents with Social Anxiety Disorder

Diana Vieira Figueiredo¹

Daniel Rijo¹

Paula Vagos²

¹Universidade de Coimbra, Portugal

² Universidade Portucalense Infante D. Henrique, Porto, Portugal

A correspondência relativa a este artigo deverá ser enviada a:

Diana Vieira Figueiredo

Faculdade de Psicologia e Ciências da Educação,

Universidade de Coimbra

Rua do Colégio Novo, Apartado 6153

3001-802 Coimbra, Portugal

Email: dianavieiraf@hotmail.com

Table of contents

Abstract	8
Resumo	9
Introduction.....	10
The present study	16
Method	17
Participants	17
Procedures	17
Measures.....	18
Data analysis	22
Results.....	24
Preliminary Data Analysis	24
Model Testing	25
Discussion	26
References.....	33

Abstract

Social anxiety disorder (SAD) typically has its onset during adolescence. It is associated with serious and persistent impairment throughout life and tends to be particularly persistent, especially in the absence of treatment. Moreover, literature offers undeniable evidence supporting the high prevalence rates of the disorder in adolescents. There is considerable empirical evidence for Clark and Wells' cognitive model of SAD maintenance factors in adults. Although research has shown that treatments based on cognitive models were also effective in adolescents with anxiety disorders, research addressing factors that may be responsible for the maintenance of SAD in adolescents is still scarce. This study aimed to fill this gap, by exploring simultaneous relationships between negative social thoughts and beliefs, self-focused attention, safety-seeking behaviors, and social anxiety as described by theory, in a clinical sample of adolescents. Participants were recruited within school settings and assessed through a structured clinical interview for the assessment of mental disorders (MINI-KID). Forty adolescents ($M_{\text{age}} = 16.13$, $SD = .76$) with a primary diagnosis of SAD completed a set of self-report measures assessing the variables included in the model. Using SEM techniques, pathways linking negative social thoughts and beliefs and social anxiety, directly, and indirectly through self-focused attention and safety-seeking behaviors were examined. Findings revealed that negative social thoughts and beliefs yielded positive effects on social anxiety, both directly and indirectly, through self-focused attention and safety-seeking behaviors sequentially. These findings offer evidence for the applicability of the model to this age range and support the use of clinical interventions based on Clark and Wells' cognitive model of social anxiety, delivered to adolescents with SAD.

Key-words: social anxiety disorder, adolescents, negative social thoughts and beliefs, self-focused attention, safety-seeking behaviors

Resumo

A perturbação de ansiedade social (PAS) inicia-se tipicamente durante a adolescência. Tem sido associada a graves e persistentes prejuízos ao longo da vida e tende a ser particularmente persistente na ausência de tratamento. A literatura apresenta incontestáveis evidências para a elevada prevalência da perturbação em adolescentes. Apesar de ter vindo a ser demonstrado que tratamentos baseados em modelos cognitivos são eficazes no tratamento de perturbações de ansiedade em adolescentes, é escassa a investigação sobre os fatores responsáveis pela manutenção da PAS nesta população. Este estudo teve por objetivo explorar relações simultâneas entre pensamentos sociais negativos, atenção auto-focada, comportamentos de procura de segurança e ansiedade social, numa amostra clínica de adolescentes, avaliando a adequabilidade do modelo cognitivo proposto por Clark e Wells na explicação dos fatores de manutenção da PAS. Os participantes foram recrutados em contexto escolar e avaliados através de uma entrevista clínica estruturada (MINI-KID). Quarenta adolescentes ($M_{idade} = 16.13$, $DP = .76$) com diagnóstico primário de PAS completaram um conjunto de instrumentos de autorresposta que mediam as variáveis em estudo. Por recurso a Modelos de Equações Estruturais, foram examinadas as trajetórias entre pensamentos sociais negativos e ansiedade social, diretamente e indiretamente através da atenção auto-focada e dos comportamentos de procura de segurança. Os resultados apontam para a presença de efeitos positivos dos pensamentos sociais negativos na ansiedade social, quer diretamente, quer indiretamente através da atenção auto-focada e pelos comportamentos de segurança, sequencialmente. Estes resultados oferecem evidência para a aplicabilidade do modelo de Clark e Wells em adolescentes e fundamentam a utilização de intervenções clínicas baseadas no mesmo em adolescentes com PAS.

Palavras-chave: perturbação de ansiedade social, adolescentes, pensamentos sociais negativos, atenção auto-focada, comportamentos de procura de segurança

Introduction

Social anxiety is a common experience among all humans. Although most people experience mild levels of anxiety in novel, unfamiliar or social-evaluative situations, some individuals experience excessive levels of anxiety in a variety of social situations (Clark & Beck, 2010). This could lead to the adoption of maladaptive social behaviors or to the avoidance of social situations altogether. In such cases, social anxiety disorder (SAD) could be present. SAD is characterized by a marked and persistent fear of social and/or performance situations in which one may be exposed to the scrutiny of others (American Psychiatric Association, 2013). Individuals with SAD fear that they will do something that embarrasses or humiliates them and, consequently, that others will negatively evaluate such behaviors and reject them. This leads to a marked fear response in situations such as social interactions, performing in public or just being observed.

In adults, SAD is the third most common mental disorder, with prevalence rates between 8 and 12% (Kessler et al., 2005; Somers et al., 2006). Even though not many prevalence studies have been conducted in adolescents, a few reported the presence of the disorder in 1.6% (Essau et al., 1999), 7.3% (Wittchen et al., 1999) and 8.6% (Burstein et al., 2011) of this population. Social fears and SAD typically exacerbate and have their onset during adolescence, with a reported onset between 11 and 17 years old (Beesdo et al., 2007; Fehm et al., 2005; Kessler et al., 2005; Schneier et al., 1992), with new cases being rare after the age of 25 (Heimberg et al., 2000). Adolescents with SAD tend to experience excessive levels of anxiety in social situations or to avoid them, which could hamper the normal socialization process. Hebert et al.'s (2012) research suggests that social anxiety has a significant impact on romantic relationships during adolescence and that social anxious individuals report having fewer friends. Even when friendships are established, they are felt as less gratifying (Vagos, 2009). Adolescents with social anxiety tend to be less well-accepted, more

victimized by peers and to display less prosocial behaviors (Erath et al., 2007). Consequently, they may present more social withdrawal, which, in turn, may lead to experiencing more social difficulties (Erath et al., 2007) and to a poor acquisition of important social and coping skills (Rubin & Burgess, 2001). SAD has also been associated with educational impairment such as lower grades and higher risk of dropping out from school (Stein & Kean, 2000). These difficulties tend to persist throughout adulthood and have been linked to a marked reduction in quality of life, to a greater tendency to report dissatisfaction with one's family, friends, main activity and income (Stein & Kean 2000), and loneliness and isolation (Albano & Detweiler, 2001).

Understanding what maintains social anxiety disorder in early stages of development becomes crucial, not only because of its prevalence (e.g., Burstein et al., 2011) and high comorbidity with other mental health problems such as other anxiety disorders and major depression (Beidel et al., 2007; Rao et al., 2007) but also because of its serious and persistent impairment throughout life (Beidel et al., 2007; Erath, et al., 2007; Wittchen & Beloch, 1996; Rao et al., 2007).

Cognitive-behavioral models of social anxiety have emphasized the role of cognitive (e.g. beliefs, negative thoughts, biased information processing, attentional processes) and behavioral (e.g. avoidance, safety-seeking behaviors) processes in the maintenance of social anxiety (Beck et al., 1985; Clark & Wells, 1995; Rapee & Heimberg, 1997). Interventions based on these models have proven to be efficacious in treating adults with SAD (Mayo-Wilson et al., 2014). In particular, therapeutic programs based on Clark and Wells' (1995) approach have shown the most consistent evidence for its effectiveness (e.g. Clark, 1999; Mayo-Wilson et al., 2014; Stangier et al., 2003) and are one of the first-line treatments recommended by the National Institute for Health and Care Excellence (NICE, 2013).

Clark and Wells' (1995) cognitive model provides a theoretical framework for the conceptualization of the maintenance of social anxiety and was specifically developed to explain why social anxiety persists, despite regular exposure of social anxious individuals to feared situations (Clark, 2001). According to this theoretical framework, when individuals with social anxiety enter a social situation, dysfunctional assumptions, based on early experiences, about themselves and their social world (and associated with a strong desire of creating a positive image of themselves in the mind of others and a low perceived ability to do so) are activated (Clark & Wells, 1995; Wells & Clark, 1997). The activation of such assumptions may lead to the appraisal of the social situation as a threatening one, to predictions of failure and to the biased interpretation of benign or ambiguous social cues as signs of negative evaluation by others or as confirming the failure in achieving a desired level of performance (Clark, 2001). These negative social thoughts may then lead individuals to become anxious.

Experiencing social situations as threatening motivates a chain of self-perpetuating cognitive, affective and behavioral responses that prevent the disconfirmation of the negative thoughts and assumptions, maintaining individuals' distress (Leigh & Clark, 2018). These responses include several inter-linked processes such as excessive self-focused attention, decreased processing of external cues, use of interoceptive information to infer how one appears to others, use of safety-seeking behaviors, misinterpretation of somatic and cognitive symptoms and pre- and post- event processing (Clark & Wells, 1995). In the present work we will focus on the processes by which social anxiety is maintained during social situations.

When **negative social thoughts** occur and individuals believe they are in danger of negative evaluation, attention is shifted to a predominantly internal focus in order to monitor how they appear to others (Clark, 2001). This **self-focused attention** enhances the awareness of feelings, thoughts, physiological symptoms and negative mental representations of the self,

leading to a reduced processing of external social cues and to a diminished capacity of processing external information that might disconfirm dysfunctional assumptions (Leigh & Clark, 2018). This could hamper interactions as a result of reduced attentional resources for successful task handling. Even when individuals are not self-focused, the processing of external information is biased in favor of the detection of cues that could be interpreted as signs of disapproval or rejection by others, maintaining the dysfunctional assumptions. The enhanced awareness and hypervigilance towards internal cues may also lead individuals to more easily notice and interpret them as signs of anxiety or loss of control and, thus, to their intensification (Clark & Wells, 1995). Interoceptive information made accessible through self-focused attention is then used to create a mental image of how individuals think others see them, often from an observer perspective. Given that this information includes feelings of anxiety and negative social thoughts, socially anxious individuals tend to make excessively negative inferences about how they appear to others and to overestimate how anxious they look (e.g. I feel hot therefore my face must be really red; Clark, 2001), confirming dysfunctional assumptions.

Motivated by the desire to prevent or minimize expected feared outcomes, socially anxious individuals tend to engage in a variety of **safety-seeking behaviors** (Clark & Wells, 1995). When in social situations, the use of such behaviors often serves to maintain negative assumptions about the self and the social world. This occurs for several reasons. Firstly, if an individual with social anxiety uses safety-seeking behaviors in a social situation and the feared outcome does not occur, instead of concluding that the situation is less dangerous than they previously estimated, they assign the non-occurrence of those undesired outcomes to the use of safety-seeking behaviors. Secondly, safety-seeking behaviors can generate some of the symptoms feared by individuals with social anxiety (e.g. if they try to hide underarm sweat by wearing a jacket, it will make them sweat more), elicit less friendly response from others

(e.g. efforts to hide signs of anxiety can make them appear unfriendly and distant, leading others to respond in a less warm and friendly way) and draw attention to one-self (e.g. if someone covers his face with his arms when he feels he's blushing, others will probably notice this behavior more than if he simply blushes), thus confirming their social fears . Lastly, the use of these behaviors can increase self-focused attention and self-monitoring, enhancing negative self-images and anxiety symptoms and reducing attention to the behavior of others. It is also important to mention that, even though the designation "safety-seeking behaviors" is commonly used, safety-seeking acts can also be internal mental processes (e.g. rehearse or memorize what they'll say in a conversation; Clark, 2001).

There is considerable evidence for Clark and Wells' (1995) cognitive model of SAD for the adult population (e.g. McManus et al., 2008; Mellings & Alden, 2000; Stopa & Clark, 2000) as for the effectiveness of interventions targeting its cognitive maintenance processes (e.g. Clark, 1999; Stangier et al., 2003). Although it has been demonstrated that treatments based on cognitive models are also effective in adolescents with anxiety disorders (Cartwright-Hatton et al., 2004; In-Albon & Schneider, 2007), there is a relative lack of research addressing factors that may be responsible for the maintenance of SAD in this population and, therefore, a lack of evidence for treatment efficacy.

Specifically, concerning **negative social thoughts**, research with non-clinical samples of children and adolescents has shown that higher levels of social anxiety are associated with a higher frequency of negative social cognitions (Hodson et al., 2008, Schreiber et al., 2012). Moreover, Ranta et al. (2013) study showed that adolescents with clinical and sub-clinical SAD reported more negative thoughts in comparison to a no diagnose group, and that those thoughts were predominantly self-focused. In line with these findings, a study comparing adolescents with SAD and a healthy control group found that individuals with social anxiety more frequently engaged in negative self-talk (Alfano et al., 2006). Rudy et al. (2014)

demonstrated that negative self-referent cognitions yielded significant effects on social anxiety, indicating that negative cognitions were an important cognitive variable that may influence social anxiety in children and adolescents.

Regarding **self-focused attention**, research suggests that children and adolescents with higher levels of social anxiety reported experiencing more self-focused attention in comparison to low social anxiety groups (Blöte et al. 2014; Hodson et al., 2008; Schreiber et al. 2012). Kley et al. (2012) study also showed that children with SAD reported significantly higher self-focused attention during a social performance task compared to a non-clinical group. Self-focused attention was also found to be an independent predictor of social anxiety (Hodson et al., 2008). However, in contrast to Hodson et al. (2008), in Schreiber et al. (2012) study, self-focused attention was not found to be a significant independent predictor of social anxiety.

In concern to **safety-seeking behaviors**, Schreiber et al. (2012) study suggested that adolescents with higher levels of social anxiety resorted more frequently to safety-seeking behaviors, which had a strong independent predictor effect over social anxiety. Their findings further demonstrated that self-focused attention yielded significant direct and indirect (via social cognitions) positive effects on safety-seeking behaviors. Ranta and collaborators (2013) reported that safety-seeking behaviors were more frequent in adolescents with a clinical and sub clinical diagnosis of SAD than in adolescents without a diagnosis. Hodson and et al.(2008) findings also showed that high socially anxious children scored significantly higher in a measure of safety seeking behaviors, compared to the low socially anxious individuals. However, Hodson et al. (2008) study did not replicate the results from Schreiber et al. (2012) regarding the independent predictive effect of safety seeking-behaviors over social anxiety.

The present study

There is some evidence for Clark and Wells' (1995) conceptualization of maintenance processes of social anxiety in adolescents. However, only a few studies included a clinical sample and, for this reason, conclusions about the applicability of the model in adolescents with SAD cannot be drawn. Moreover, given that the majority of studies only assessed the correlation between the variables of Clark and Wells' model (1995) and social anxiety, evidence for the predictive pathways between those same variables and social anxiety symptoms is limited.

With that in mind, the aim of the present study was to understand the role of the maintenance processes of Clark and Wells' (1995) cognitive model of social anxiety in a sample of adolescents with SAD. By using SEM techniques, we aimed to explore simultaneous relationships between negative social thoughts and beliefs, self-focused attention, safety-seeking behaviors, and social anxiety as described by theory. Specifically, negative social thoughts and beliefs were expected to yield a positive direct effect on social anxiety. Considering that, when entering a social situation, individuals with social anxiety tend to shift their attention internally and that this enhances awareness about feelings, thoughts, physiological symptoms, negative mental representations of the self (Clark, 2001) and the sense of threat, self-focused attention could contribute to an increased tendency to engage in safety-seeking behaviors. Schreiber et al. (2012) study points to a direct effect of self-focused attention on safety-seeking behaviors. In line with this, social thoughts and beliefs were expected to yield a positive indirect effect on social anxiety through self-focused attention and safety-seeking behaviors, separately and sequentially (see Figure 1 for a display of these effects).

Method

Participants

Forty adolescents from the 10th and 11th grades with a primary diagnosis of SAD participated in this study. Participants' age ranged between 15 and 18 years-old ($M = 16.13$, $SD = .757$). Regarding gender, 67.5% were female ($n = 27$) and 32.5% were male ($n = 13$). No differences were found between girls ($M = 16.04$, $SD = 0.71$) and boys ($M = 16.31$; $SD = 0.86$) concerning age ($t_{(38)} = -1.060$, $p = .296$). Regarding socioeconomic status (SES¹), 57.5% of the participants had low SES ($n = 23$), 37.5% had medium SES ($n = 15$) and 5% had high SES ($n = 2$). Boys and girls were homogeneously distributed by SES ($\chi^2_{(2)} = 1.39$, $p = .499$). From the 40 participants with a primary diagnosis of SAD, 97.5% ($n = 39$) met full DSM-5 criteria for Generalized SAD and 2.5% ($n = 1$) only met criteria for the Performance subtype. Twenty-nine participants (72.5%) presented one diagnosis (SAD) and eleven (27.5%) presented an additional diagnosis (Panic Disorder (3), Attention-Deficit Disorder (3) Agoraphobia (2), Specific Phobia (2) and Generalized Anxiety Disorder (1)). In respect to the severity of the symptoms² presented by the adolescents, 22.5% ($n = 9$) were considered moderated, 65% ($n = 26$) marked and 12.5% ($n = 5$) severe. No differences were found between boys and girls regarding number of diagnosis presented ($\chi^2_{(1)} = 3.790$, $p = .052$) and severity of symptoms ($\chi^2_{(2)} = 2.19$, $p = .334$).

Procedures

Participants were recruited in school settings within the TeenSAD project - Changing the course of social anxiety in adolescence: What works, why, and for whom (C492522605-00087032). The study's procedures were approved by the ethics committee of the Faculty of

¹ Socioeconomic status (low, medium, high) was assessed based on Simões' classification (1994).

² Symptoms severity was assessed through the "Severity of Illness" item of the **Clinical Global Impression Scale** (Zaider, et al., 2003; Portuguese version by Vagos, unpublished material). It is rated by the clinician on a seven-point scale (1=normal to 7=extremely ill) and takes into account the severity of social anxiety disorder symptoms, as well as impairment and distress resulting from the disorder, and the presence of related problems.

Psychology and Educational Sciences of the University of Coimbra and consent from executive boards of the schools was requested. Nine schools from the districts of Coimbra and Santarém were contacted and asked to screen all 10th and 11th graders using the Portuguese version of the Social Anxiety Scale for Adolescents (SAS-A; Cunha et al., 2004). Before any contact with the participants, written and informed consent from the guardian or legal representatives was requested for all students under the age of 18. Potential participants were orally informed on the goals and procedures of the research and the confidentiality and anonymity of their responses was guaranteed. Students were asked to voluntarily participate in the study and consent was requested. Participants who scored more than one standard deviation above the mean on the SAS-A were called for specific and individual recruitment procedures. The inclusion of participants was based on the following criteria: 1) aged between 15 and 18 years old; 2) main diagnosis of Social Anxiety Disorder assessed through the MINI-KID (Sheehan, et al., 2010). Participants presenting psychotic symptoms and/or being placed in the special needs teaching classes were excluded (these conditions would require specific intervention cautions). Selected participants were assessed using self-report questionnaires validated or in process of validation for Portuguese adolescents. The research protocol took approximately 30 minutes to answer and it was given to the adolescents to be answered at home. Given the limitations imposed by the pandemic, not all adolescents were able to complete the protocol in paper format. For those, an online version of the protocol was created using the *Lymesurvey* software and sent to the participants through e-mail. For the online version, the confidentiality and anonymity of the responses was also guaranteed.

Measures

Screening and clinical interview

The **Social Anxiety Scale for Adolescents** (SAS-A; La Greca, & Lopez, 1998; Portuguese version by Cunha et al., 2004) is a self-report questionnaire comprised of 22 items

assessing the adolescents' social anxiety experiences in their relationship with peers. It is answered using a 5-point Likert-scale according to how much the item "is true for you" (1 = not at all, 5 = all the time). Higher scores reflect higher levels of social anxiety. Besides the total score, the scale is comprised of three other subscales derived from factors, namely, the Fear of Negative Evaluation (FNE), the Social Avoidance and Distress of New Situations (SAD-New), and the Generalized Social Avoidance and Distress (SAD-General). In the original study, FNE, SAD-New and SAD-General subscales presented good internal consistencies, with Cronbach's alphas ranging from .76 to .91. In the Portuguese version, values reached .87 for the FNE, .74 for the SAD-New, .71 for the SAD-General, and .88 for the total score, also representing a good internal consistency. Only the total score was used for the initial screening phase of the current work, as described above.

The **Mini International Neuropsychiatric Interview for Children and Adolescents** (MINI-KID; Sheehan, et al., 2010; Portuguese Authorized version by Rijo et al., 2016) is a structured, psychiatric interview used for children between the ages of 6 and 17 years old and designed to assess psychiatric disorders from the DSM-V. This interview is a downward extension of the adult version of the interview (MINI), which has been validated against other diagnostic interviews (i.e., the Structured Clinical Interview for DSM-III-R and the World Health Organization designed Composite International Diagnostic Interview). Similar to the adult version, the MINI-KID is organized into diagnostic modules. The instrument utilizes branching tree logic, wherein two to four screening questions are asked for each disorder. If the screening questions are positively answered, additional symptom questions are given for the particular disorder. All questions are presented in a yes/no format. The interview also comprises a screening section of autism spectrum disorders. Furthermore, it includes items that allow the exclusion of medical, organic, and/or drug causes for disorders. With an administration time of 30 to 90 minutes, it has the advantage of being a short and accurate

instrument to diagnose 23 Axis I disorders. The MINI-KID has shown good to excellent specificity for all disorders (with K values between .73 and 1.00) and good test-retest and inter-observer reliability (with K values between .94 and 1.00). Thus, the MINI-KID is claimed to be a useful tool for diagnostic screening in child and adolescent psychiatry (Sheehan et al., 2010). The Portuguese version of the MINI-KID (Rijo et al., 2016) has already been used with Portuguese samples of children and adolescents (e.g. Ribeiro da Silva et al., 2020).

Self-report measures

A **socio-demographic questionnaire** assessing age, gender, school year and parents' profession was completed by all participants.

The **Social Thoughts and Beliefs Scale** (STABS; Turner et al., 2003; Portuguese version by Vagos et al., 2010) is a 21 item self-report instrument rated using a five-point Likert scale (ranging from 1 = never characteristic to 5 = always characteristic) to measure the degree in which a particular thought or belief is typical of the individuals' thinking when anticipating or participating in social encounters. The original study revealed a two-factor structure comprised of Social Comparison and Social Ineptness, with Cronbach's alphas of .95 and .93, respectively, and a value of .96 for the total score. The STABS presented a highly reliable temporal stability and a high degree of accuracy to discriminate between individuals with social anxiety disorder, other anxiety disorders and those with no psychopathology (Turner et al., 2003). The Portuguese version did not replicate the original factor structure, revealing two different factors called Discomfort in Social Interaction and Discomfort in Public Performance, with Cronbach's alphas of .93 and .91 respectively, and a value of .82 for the total score, which represents a good internal consistency (Vagos et al., 2010). In the present study, only the total score of STABS was used. It presented an excellent internal consistency with Cronbach's alpha of .90.

The **Self-focused Attention Scale** (SFA; Bögels et al., 1996; Portuguese version for adolescents by Fontinho & Salvador, manuscript in preparation) is a self-report questionnaire to assess the focus of attention in social situations. It comprises 11 items distributed by two factors: focus of attention in one's behavior (SFA-behavior) and focus of attention in one's physiological arousal (SFA-arousal). In its original version, the SFA revealed Cronbach's alphas of .88, .86 and .78 for the total score, SFA-arousal and SFA-behavior, respectively. The Portuguese adolescent version revealed good to excellent internal consistencies, with Cronbach's alphas of .91 for the total score, .88 for SFA-behavior and .86 for SFA-arousal. In the present study, only the total measure of the SFA was used and it presented an excellent internal consistency with a value of .90.

The **Safety Behaviors in Social Situations Scale for Adolescents** (SBSSS-A; Salvador et al., non-published article) is comprised of 20 items rated using a four-point Likert scale (from 1 = Never to 4 = Almost Always) to assess the frequency of safety-seeking behaviors in social situations. A higher score represents a higher frequency of practicing safety behaviors. The scale revealed a unifactorial structure, good internal consistency and temporal stability and a moderate convergent validity (Silva, 2010). The SBSSS-A also showed sensitivity to treatment results (Salvador, 2009). The adult version demonstrated a capacity to discriminate individuals with generalized social anxiety from individuals with non-generalized social anxiety, with other anxiety disorders and without psychopathology (Pinto-Gouveia et al., 2000). In our study the SBSSS-A presented an excellent internal consistency with a value of .90.

The **Social Anxiety and Avoidance Scale for Adolescents** (SAASA; Vagos et al., 2013 adapted from Cunha et al., 2008) is made of 30 items (34 in its original version) that seek to assess the degree of anxiety and frequency of avoidance in social situations representative of the most frequent social fears in adolescents. Each item is answered twice, for two subscales

– anxiety and avoidance, using a five-point Likert scale (ranging from 1 = none to 5 = very much, for anxiety; and from 1 = never to 5 = almost always, for avoidance), in which higher scores represent higher levels of anxiety and avoidance. Each subscale is comprised of six non-coincident factors: interaction with the opposite sex, assertive interaction, observation by others, interaction in new social situations, performance in social situations, and eating and drinking in public. In its original version, the SAASA has shown good internal consistency, with Cronbach's alpha values above .87 for total score and subscales (Cunha et al., 2008). In its 30-item version, factors achieved adequate internal consistency values with Cronbach's alphas above .70 (Vagos et al., 2013). SAASA has also demonstrated good test-retest reliability, convergent and divergent validities, capacity to discriminate adolescents with social anxiety from adolescents with other anxiety disorders and without psychopathology (Cunha et al., 2008) and sensitivity to treatment results (Salvador, 2009). In the present study only the total score for the anxiety subscale was used, and achieved an excellent internal consistency with a Cronbach's alpha of .94.

Data analysis

Initial statistical analysis were conducted using IBM SPSS Statistic 22 (Statistical Package for the Social Sciences version 22; IBM Corp.) whereas the path analysis was conducted using Mplus v7.0 software (Muthén & Muthén, 2010). Data were also screened for missing values. Adherence to normality was assessed through the Shapiro-Wilk test of normality, where it was assumed that the sample was reasonably normally distributed if $p > .05$. Outlier's analysis were performed by graphing the results (box diagrams). Pearson correlation coefficients were conducted to identify possible covariates and analyze the associations between variables, according to the proposed hypotheses. To assess the magnitude of correlations, correlation coefficients lower than .20 were considered to reveal a very low association, between .21 and .29 a low association, between .30 and .69 a moderate one,

between .70 and .89 a high association, and between .90 and 1.00 an excellent one (Pestana & Gageiro, 2008). Internal consistency indices were calculated for each instrument, considering Cronbach's values of less than .60 as inadmissible, between .60 and .69 weak, between .70 and .79 acceptable, between .80 and .89 high, and between .90 and 1 excellent (Pestana & Gageiro, 2008). To detect multicollinearity, the variance inflation factor ($VIF < 5$) and the correlation matrix for all constructs were examined (Kline, 2005). To ensure that all SEM assumptions were met, homoscedasticity, normality of the residuals and linearity were also computed, by analyzing the dispersion graphs of the residuals, and autocorrelation of the residuals through the Durbin-Watson test (values around 2 indicating no autocorrelation).

Data analysis relied on a path analyses model, with social anxiety as the dependent variable and social thoughts and beliefs as the independent variable. Indirect effects between the independent and dependent variables were also considered through safety-seeking behaviors and self-focused attention. An all-item parcel approach was applied to increase the common-to-unique ratio for each indicator, as well as the data-to-variable ratio. Total scores for each variable were used to represent latent variables according to the formula suggested by Matsunaga (2008). A model generation approach was followed, in which an a priori model was tested on the data (i.e., the one depicted in Figure 1) and it was sequentially improved with only one modification at a time, based on theoretical considerations and statistical indications, until acceptable fit values were obtained. Acceptable fit considered a two-index strategy, based on Standardized Root Mean Square Residual ($SMRM < .08$) (Hair et al., 2014) and Comparative Fit Index ($CFI > .95$) or Root Mean Square Error of Approximation ($RMSEA < .08$). Additionally, through path analysis, the percentage of variance of social anxiety, self-focused attention and safety-seeking behaviors explained by the respective predictor variables were analyzed.

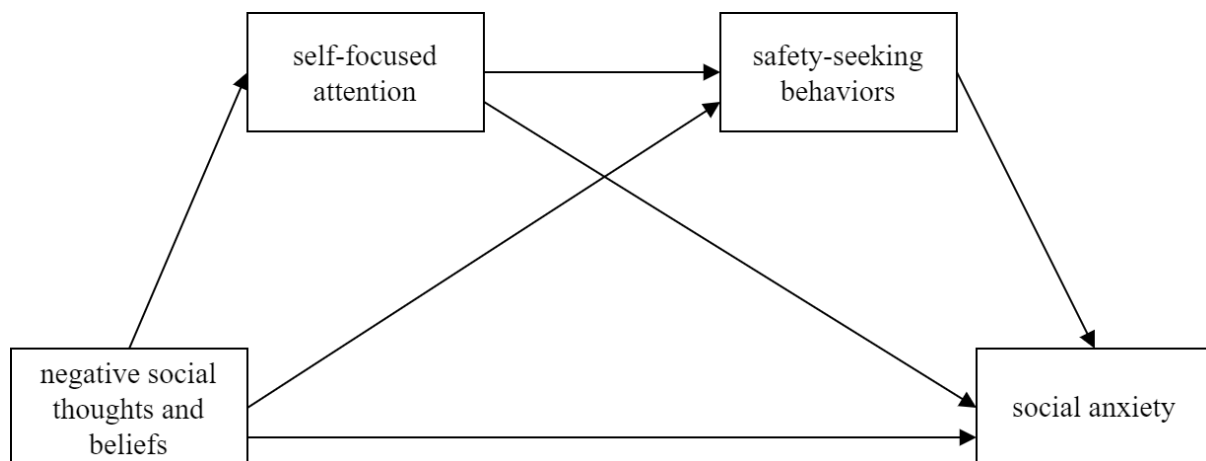
Results

Preliminary Data Analysis

In assessing adherence to normality, no violations were found, with p-values above .05. An outlier was found for some variables under study; after assessing that there were no significant differences in outcomes with and without the outlier, we opted to keep it and insure ecological validity. Even though one participant only presented SAD performance subtype, considering that no distinction is made in the theory concerning the underlying processes of generalized and performance subtypes of SAD, we opted not to exclude that participant. Missing values were found for 3 participants on the SBSSS-A and for 1 participant in the STABS, representing 7.5% and 2.5% of the total sample, respectively. These missing values were missing completely at random (MCAR (227) = 3.667, $p = 1.00$). Considering the small sample size, an arbitrary value not within the normal values of the variable was assigned to missing values.

Figure 1

Conceptual diagram of the proposed model



Gender differences for variables under study were investigated and no differences were found. Correlations between sociodemographic variables (i.e., age, gender and SES) and variables under study revealed non-significant associations between them. For these reasons,

we decided not to control for sociodemographic variables. As expected, correlations between variables in the study revealed significant moderated and high associations (Table 1). Despite some correlations revealing values indicative of possible multicollinearity, by examining the variance inflation factor, no multicollinearity problems were found among those variables ($VIF < 5$). The analysis of the dispersion graphs of the residuals showed a normal distribution with homoscedasticity and linearity. Moreover, the Durbin-Watson test indicated no autocorrelation for the residuals.

Table 1

Means, standard deviation and matrix of inter-correlations among study variables (N=40)

Variables	1	2	3	4	<i>M (SD)</i>		
					Total sample	Girls (n=27)	Boys (n=13)
1.SFA	-				26.38 (9.46)	26.19 (8.63)	26.77 (11.38)
2.SAASA	.69*	-			89.95 (22.21)	89.41 (21.99)	91.08 (23.54)
3.SBSSS-A	.73*	.76*	-		50.84 (11.17)	51.28 (10.92)	49.92 (12.11)
4.STABS	.75*	.79*	.71*	-	67.85 (13.72)	67.67 (11.68)	68.25 (18.10)

Note. STABS = Social Thoughts and Beliefs Scale; SFA = Self-Focused Attention Scale; SBSSS-A = Safety Behaviors in Social Situations Scale for Adolescents; SAASA_A = Social Anxiety and Avoidance Scale for Adolescents: Anxiety Subscale. *M* = Mean; *SD* = Standard Deviation; * $p < .001$.

Model Testing

Regarding path analysis, the initial model included social anxiety as the dependent variable (i.e., SAASA-A). Social thoughts and beliefs were entered as the independent variable (i.e., STABS) directly and indirectly (through self-focused attention [i.e., SFA] and safety-seeking behaviors [i.e., SBSSS]) associated with the dependent variable (see Figure 1). The baseline model was just identified (Table 2). Changes were sequentially made to the model based on the following criteria: 1) exclusion of all nonsignificant pathways; and 2) inclusion of pathways that could be theoretically relevant and were suggested by the modification indices, one at a time. It was not necessary to apply criterion 2. This resulted in

a specific model that achieved good fit indices (Table 2). The specific model, standardized regression coefficients and variance of each dependent variable explained by this model are presented in Figure 2.

Social thoughts and beliefs were positively and directly associated with social anxiety and self-focused attention. In turn, self-focused attention yielded a positive direct effect on safety-seeking behaviors. Safety-seeking behaviors were also positively and directly associated with social anxiety. A positive indirect effect was found in the relationship between social thoughts and beliefs and social anxiety through both self-focused attention and safety-seeking behaviors sequentially ($\beta = .29, p < .05$), partially mediating this relationship.

Table 2

Fit Indices for Path Analysis

	χ^2	<i>df</i>	<i>p</i>	RMSEA	90% CI for RMSEA	CFI	SRMR
Structural Model							
Baseline	.000	0	<.001	.000	[.000, .000]	1.000	.000
First model adjustment*	.092	1	.762	.000	[.000, .284]	1.000	.004
Specific**	2.740	2	.291	.077	[.000, .333]	.996	.033

Note. χ^2 = Chi-Square; RMSEA = root mean square error of approximation; CI = confidence interval; CFI = comparative fit index; SRMR = standardized root mean square residual. * exclusion of the non-significant path from SFA to SAASA_A ($p = .762$). **exclusion of the non-significant path from STABS to SBSSS-A ($p = .111$).

Discussion

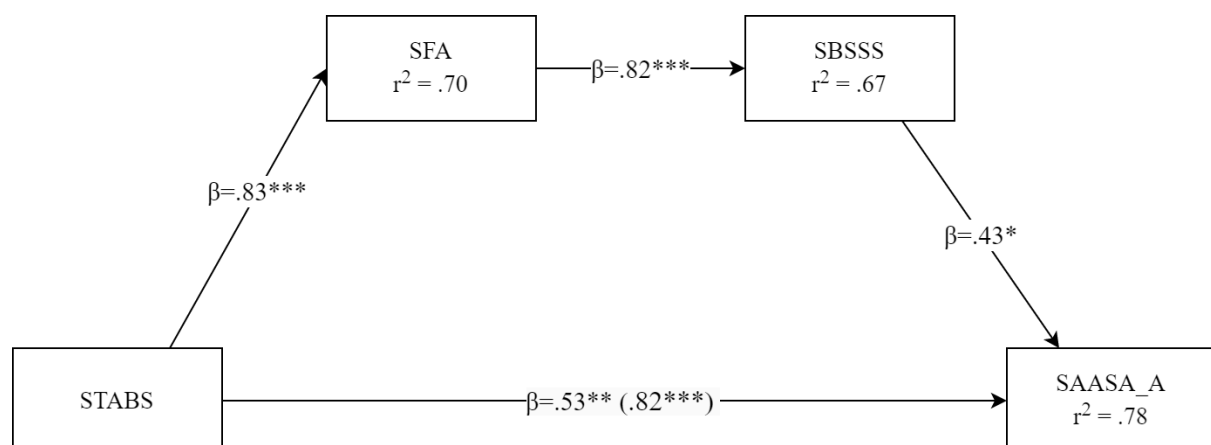
. As previously stated, studies undertaken with a clinical sample of adolescents are scarce and, therefore, conclusions about the applicability of the model in this population cannot be drawn. Additionally, the majority of studies with adolescents only assessed the correlation between the variables of Clark and Wells' model (1995) and social anxiety and, for that matter, evidence for the predictive pathways between those variables is limited.

Using SEM techniques, the present study aimed to bridge the abovementioned gap by investigating the suitability of Clark and Wells' (1995) maintenance processes of social anxiety in a clinical sample of adolescents.

As expected, our findings suggested a positive direct effect of negative social thoughts and beliefs on social anxiety. This is consistent with previous research suggesting that adolescents with higher levels of social anxiety reported more negative social cognitions (Alfano et al., 2006; Hodson et al., 2008; Ranta et al., 2013; Schreiber et al., 2012) and that socially oriented negative self-referent cognitions yielded positive effects on social anxiety (Rudy et al., 2014). This is also in line with Clark and Wells' (1995) model of social anxiety given that negative social cognitions, and the underlying appraisal of the social situation as dangerous, predictions of failure and misinterpretation of social cues as signs of negative evaluation, may lead individuals with social anxiety to become more anxious.

Figure 2

Specific Model



Note. STABS = social thoughts and beliefs scale; SFA = self-focused attention scale; SBSSS-A = safety behaviours in social situations scale for adolescents; SAASA_A = social anxiety and avoidance scale for adolescents: anxiety subscale. Values inside parenthesis represent the total effect of x on y. * $p < .05$; ** $p < .01$; *** $p < .001$.

We also found a direct effect between negative social thoughts and beliefs and self-focused attention. In line with the hypothesized relationships of Clark and Wells' (1995) model, the appraisal of a social situation as threatening often leads individuals to shift their

attention internally so they can monitor in detail how they appear to others. Thus, and according to our findings, negative social thoughts and beliefs may lead directly to self-focused attention as a result of the interpretation of the social situation as dangerous. This is also consistent with previous research showing that adolescents with higher levels of social anxiety reported experiencing more self-focused attention (Blöte et al., 2014; Hodson et al., 2008; Kley et al., 2012; Schreiber et al., 2012).

Moreover, self-focused attention revealed a positive direct effect on safety-seeking behaviors. In line with theory (Clark, & Wells, 1995), we could hypothesize that self-focused attention enhances awareness of feelings, thoughts and physiological symptoms leading adolescents to more easily notice and interpret them as signs of anxiety or loss of control and thus, contributing to a greater tendency to engage in safety-seeking behaviors in order to prevent feared outcomes. It can also be that the information made accessible by self-focused attention may be used as a confirmation of the negative thoughts about oneself and one's performance, thus confirming that the feared catastrophe is actually happening and, consequently, contributing to a greater tendency to engage in safety-seeking behaviors in order to prevent the feared outcome. This explanation would be in line with previous research showing positive associations between self-focused attention and safety-seeking behaviors (Schreiber et al., 2012).

A direct effect between safety-seeking behaviors and social anxiety was also found. This is consistent with existing research showing that adolescents with higher levels of social anxiety engaged more frequently in safety-seeking behaviors (Hodson et al., 2008; Ranta et al., 2013; Schreiber et al., 2012). This is also in line with Clark and Wells' (1995) cognitive model of social anxiety, given that the use of such behaviors often leads individuals to fail to benefit from the non-occurrence of the feared catastrophe, maintaining dysfunctional beliefs,

increasing feared symptoms and making individuals come across in a way that is likely to elicit less friendly responses, thus maintaining social fears and anxiety.

On the other hand, no direct effects were found from self-focused attention to social anxiety or from negative social thoughts and beliefs to safety-seeking behaviors. Thus, and contrarily to our expectations, only a sequential indirect effect through self-focused attention and safety-seeking behaviors was found in the relationship between negative social thoughts and beliefs and social anxiety. According to the model (Clark & Wells, 1995), when social anxious individuals appraise a social situation as dangerous, attention is shifted internally in order to monitor how they appear to others. This may explain why no direct effect was found between negative social thoughts and beliefs and safety-seeking behaviors given that the change in focus of attention is often automatic. Therefore, it may be the enhanced awareness of feared anxiety responses that most motivates the adoption of safety-seeking behaviors in order to prevent others from noticing those feared anxiety responses. Since information made accessible through self-focused attention is frequently used to infer how one appears to others, we could also hypothesize that self-focused attention provides specific information that motivates specific safety-seeking behaviors. For instance, if the information made accessible through self-focused attention is related to blushing and one anticipates negative evaluations if others notice the blushing, the adopted safety-seeking behaviors will probably intend to prevent this specific feared outcome, for example, by covering the face. This, in turn, could also explain why no direct effect was found between self-focused attention and social anxiety, suggesting that it is not the monitorization of the self (or the consequent heightened awareness of thoughts, feelings and symptoms of anxiety) *per se* that leads to the maintenance of social anxiety, but rather the adoption of maladaptive coping behaviors (that prevent the disconfirmation of the information made accessible by self-focused attention) that most contributes to the maintenance of social anxiety. It is also noteworthy that a clinical

sample of adolescents was used and thus, they may have a broader range of safety-seeking behaviors and adopt them more promptly when social danger is perceived in comparison to adolescents without SAD.

Additionally, in this study's sample, negative social thoughts and beliefs, self-focused attention, and safety-seeking behaviors accounted for 78% of social anxiety variance, indicating that these are core features of social anxiety in adolescents with SAD.

Overall, our findings suggest that the maintenance processes of Clark and Wells' (1995) cognitive model of social anxiety are present in adolescents with SAD, offering evidence for its applicability within this developmental phase.

Considering the present study's findings, as well as findings from previous research (Blöte et al., 2014; Hodson et al., 2008; Kley et al., 2012; Schreiber et al., 2012), it could be important to target both self-focused attention and safety-seeking behaviors when treating adolescents with social anxiety problems. Adolescents may display difficulty in giving up on safety-seeking behaviors given the false sense of safety that the adoption of such behaviors provide. In such cases, and in line with our findings, it could be helpful to practice an external focus of attention in a first moment, as an indirect way to reduce reliance on such behaviors. Considering that safety-seeking behaviors seem paramount to the maintenance of social anxiety problems in adolescents, without disregarding the importance of self-focused attention, interventions should focus on adolescents giving up on safety-seeking behaviors, in order to provide opportunities to disconfirm social fears. This gives further support to the inclusion of techniques targeting both self-focused attention and safety-seeking behaviors when intervening with adolescents (e.g. video-feedback). Our findings also suggest that negative social thoughts and beliefs have an important role in the maintenance of social anxiety. This seems extremely relevant considering that cognitions are frequently overlooked

in treatment with adolescents (Davis et al., 2011). Thus, thought modification and cognitive restructuring may be an important component of treatment in adolescents with SAD.

Despite the relevance of the present study, there are some limitations that should be considered when interpreting the results. Firstly, our sample size was small and, for that matter, did not allow to investigate model invariance regarding gender. Secondly, we considered a model generation approach where pathways were only excluded based on statistical indications (criterion 2 was not applied; see results section). Thirdly, this study relied uniquely on self-report measures. Even though all measures were successfully applied to Portuguese adolescent samples in previous studies (as outlined in the method section) and have shown good to excellent internal consistencies in our sample, SFA and SBSSS-A have not yet been validated for Portuguese adolescents. Fourthly, since this study relied on cross-sectional data, conclusions about the causal role of the included variables in the maintenance of social anxiety in adolescents are limited. Thus, findings need to be considered with caution.

In trying to overcome these limitations, future research should attempt to use a larger clinical sample, alternative assessment methods and a longitudinal design. It could also be important to explore differences in these processes across samples (e.g. clinical and non-clinical), gender and age (e.g. early and late adolescence). Considering that previous research with adults pointed to a bidirectional relationship between self-focused attention and safety-seeking behavior (Desnoyers et al., 2016), it could be worthwhile to explore this relationship in adolescent population. Research with adolescents has also suggested an indirect effect between self-focused attention and safety-seeking behaviors through negative social thoughts (Schreiber et al., 2012). It could be relevant to include this relationship in future researches regarding the maintenance processes of social anxiety in adolescents.

Literature offers undeniable evidence supporting the high prevalence rates of social anxiety in adolescents (Burstein et al., 2011; Essau et al., 1999; Wittchen et al., 1999) which seems incongruent with the scarcity of research within this population. This study's aim was to try to bridge this gap and contribute to a more robust theoretical background which is crucial to derive effective interventions at an early stage of SAD, helping to prevent long-term developments and severe impairment later in life. Our findings support existing research suggesting that negative social thoughts and beliefs, self-focused attention and safety-seeking behaviors contribute to the maintenance of social anxiety in adolescents. They also offer support for the use of clinical interventions based on Clark and Wells' (1995) cognitive model of social anxiety, delivered to adolescents with SAD.

References

- Albano, A. M., & Detweiler, M. F. (2001). The developmental and clinical impact of social anxiety and social phobia in children and adolescents. In S. G. Hoffman & P. M. DiBartolo (Eds.), *Social phobia and social anxiety: An integration*, (pp. 162–178). Plenum.
- Alfano, C. A., Beidel, D. C., & Turner, S. M. (2006). undefined. *Journal of Abnormal Child Psychology*, 34(2), 182-194. <https://doi.org/10.1007/s10802-005-9012-9>
- American Psychiatric Association (2013). *Manual de Diagnóstico e Estatística das Perturbações Mentais* (5a Ed.). Climepsi Editores.
- Beck, A.T., Emery, G. & Greenberg, R.L. (1985). *Anxiety Disorders and Phobias. A cognitive perspective*. Basic Books.
- Beesdo, K., Bittner, A., Pine, D. S., Stein, M. B., Höfler, M., Lieb, R., & Wittchen, H. (2007). Incidence of social anxiety disorder and the consistent risk for secondary depression in the first three decades of life. *Archives of General Psychiatry*, 64(8), 903. <https://doi.org/10.1001/archpsyc.64.8.903>
- Beidel, D. C., Turner S. M., Young, B. J., Ammerman, R. T., Sallee, F. R., Crosby, L. (2007) Psychopathology of Adolescent Social Phobia. *J Psychopathol Behav Assess*, 29, 47–54. <https://doi.org/10.1007/s10862-006-9021-1>
- Blöte, A. W., Miers, A. C., Heyne, D. A., Clark, D. M., & Westenberg, P. M. (2013). The relation between social anxiety and audience perception: Examining Clark and wells' (1995) model among adolescents. *Behavioural and Cognitive Psychotherapy*, 42(5), 555-567. <https://doi.org/10.1017/s1352465813000271>

- Bögels, S. M., Alberts, M., & de Jong, P. J. (1996). Self-consciousness, self-focused attention, blushing propensity and fear of blushing. *Personality and Individual Differences*, 21(4), 573–581. [https://doi.org/10.1016/0191-8869\(96\)00100-6](https://doi.org/10.1016/0191-8869(96)00100-6)
- Burstein, M., He, J., Kattan, G., Albano, A. M., Avenevoli, S., & Merikangas, K. R. (2011). Social phobia and subtypes in the national comorbidity survey–adolescent supplement: Prevalence, correlates, and comorbidity. *Journal of the American Academy of Child & Adolescent Psychiatry*, 50(9), 870-880. <https://doi.org/10.1016/j.jaac.2011.06.005>
- Cartwright-Hatton, S., Roberts, C., Chitsabesan, P., Fothergill, C., & Harrington, R. (2004). Systematic review of the efficacy of cognitive behaviour therapies for childhood and adolescent anxiety disorders. *British Journal of Clinical Psychology*, 43(4), 421-436. <https://doi.org/10.1348/0144665042388928>
- Clark, D. M. (1999). Anxiety disorders: Why they persist and how to treat them. *Behaviour Research and Therapy*, 37, 5-27. [https://doi.org/10.1016/s0005-7967\(99\)00048-0](https://doi.org/10.1016/s0005-7967(99)00048-0)
- Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. G. Heimberg, M. R. Liebowitz, D. Hope, & F. Scheier (Eds.), *Social phobia: Diagnosis, assessment, and treatment*. The Guilford Press.
- Clark, D. M. (2001). A cognitive perspective on social phobia. In W. R. Crozier & L. E. Alden (Eds.), *International handbook of social anxiety: Concepts, research and interventions relating to the self and shyness*, (pp. 405-430). Wiley.
- Clark, D. A., & Beck, A. T. (2010). Cognitive Therapy of Social Phobia. In *Cognitive therapy of anxiety disorders: Science and practice*, (pp. 332-387). Guilford Press.

- Cunha, M., Pinto-Gouveia, J. P., & Salvador, M. C. (2008). Social fears in adolescence – The social anxiety and avoidance scale for adolescents. *European Psychologist*, 13, 197–213. <https://doi.org/10.1027/1016-9040.13.3.197>
- Cunha, M., Pinto Gouveia, J., Alegre, S., & Salvador, M. C. (2004). Avaliação da ansiedade na adolescência: A versão portuguesa da SAS-A. *Psychologica*, 35, 249-263.
- Davis, T. E., III, May, A. C., & Whiting, S. E. (2011). Evidence-based treatment of anxiety and phobia in children and adolescents: Current status and effects on the emotional response. *Clinical Psychology Review*, 31, 592–602.
- Desnoyers, A. J., Kocovski, N. L., Fleming, J. E., & Antony, M. M. (2016). Self-focused attention and safety behaviors across group therapies for social anxiety disorder. *Anxiety, Stress, & Coping*, 30(4), 441-455. <https://doi.org/10.1080/10615806.2016.1239083>
- Essau, C. A., Conradt, J., & Petermann, F. (1999). Frequency and comorbidity of social phobia and social fears in adolescents. *Behaviour Research and Therapy*, 37(9), 831-843. [https://doi.org/10.1016/s0005-7967\(98\)00179-x](https://doi.org/10.1016/s0005-7967(98)00179-x)
- Erath, S. A., Flanagan, K. S., & Bierman, K. L. (2007). Social anxiety and peer relations in early adolescence: Behavioral and cognitive factors. *Journal of Abnormal Child Psychology*, 35(3), 405-416. <https://doi.org/10.1007/s10802-007-9099-2>
- Fehm, L., Pelissolo, A., Furmark, T., & Wittchen, H. (2005). Size and burden of social phobia in Europe. *European Neuropsychopharmacology*, 15(4), 453-462. <https://doi.org/10.1016/j.euroneuro.2005.04.002>
- Fontinho, A. & Salvador, M. C. (2012). *O papel da atenção auto focada na fobia social na adolescência: validação da versão portuguesa da Escala de Atenção Auto Focada*

- (SFA) e estudos preliminares [Unpublished master dissertation]. Faculty of Psychology and Educational Sciences of University of Coimbra.
- Hair, J.F., Hult, G.T.M., Ringle, C.M. & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage Publication
- Hebert, K. R., Fales, J., Nangle, D. W., Papadakis, A. A., & Grover, R. L. (2012). Linking social anxiety and adolescent romantic relationship functioning: Indirect effects and the importance of peers. *Journal of Youth and Adolescence*, 42(11), 1708-1720. <https://doi.org/10.1007/s10964-012-9878-0>
- Heimberg, R., Stein, M., Hiripi, E., & Kessler, R. (2000). Trends in the prevalence of social phobia in the United States: A synthetic cohort analysis of changes over four decades. *European Psychiatry*, 15(1), 29-37. [https://doi.org/10.1016/s0924-9338\(00\)00213-3](https://doi.org/10.1016/s0924-9338(00)00213-3)
- Hodson, K. J., McManus, F. V., Clark, D. M., & Doll, H. (2008). Can Clark and wells' (1995) cognitive model of social phobia be applied to young people? *Behavioural and Cognitive Psychotherapy*, 36(4), 449-461. <https://doi.org/10.1017/s1352465808004487>
- In-Albon, T., & Schneider, S. (2006). Psychotherapy of childhood anxiety disorders: A meta-analysis. *Psychotherapy and Psychosomatics*, 76(1), 15-24. <https://doi.org/10.1159/000096361>
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry*, 62(6), 593. <https://doi.org/10.1001/archpsyc.62.6.593>

- Kley, H., Tuschen-Caffier, B., & Heinrichs, N. (2012). Safety behaviors, self-focused attention and negative thinking in children with social anxiety disorder, socially anxious and non-anxious children. *Journal of Behavior Therapy and Experimental Psychiatry*, 43(1), 548-555. <https://doi.org/10.1016/j.jbtep.2011.07.008>
- Kline, R. B. (2005). *Principles and Practice of Structural Equation Modeling* (2nd ed.). The Guilford Press
- La Greca, A. M., & Lopez, N. (1998). Social anxiety among adolescents: Linkages with peer relations and friendships. *Journal of Abnormal Child Psychology*, 26, 83-94
- Leigh, E., Clark, D.M. Understanding Social Anxiety Disorder in Adolescents and Improving Treatment Outcomes: Applying the Cognitive Model of Clark and Wells (1995). *Clinical Child and Family Psychology Review*, 21, 388–414 (2018). <https://doi.org/10.1007/s10567-018-0258-5>
- Matsunaga, M. (2008). *Item Parceling in Structural Equation Modeling: A Primer. Communication Methods and Measures*, 2(4), 260-293. <https://doi.org/10.1080/19312450802458935>
- Mayo-Wilson, E., Dias, S., Mavranzouli, I., Kew, K., Clark, D. M., Ades, A. E., & Pilling, S. (2014). Psychological and pharmacological interventions for social anxiety disorder in adults: A systematic review and network meta-analysis. *The Lancet Psychiatry*, 1(5), 368-376. [https://doi.org/10.1016/s2215-0366\(14\)70329-3](https://doi.org/10.1016/s2215-0366(14)70329-3)
- McManus, F., Sacadura, C., & Clark, D. M. (2008). Why social anxiety persists: An experimental investigation of the role of safety behaviors as a maintaining factor. *Journal of Behavior Therapy and Experimental Psychiatry*, 39(2), 147-161. <https://doi.org/10.1016/j.jbtep.2006.12.002>

- Mellings, T. M., & Alden, L. E. (2000). Cognitive processes in social anxiety: the effects of self-focus, rumination and anticipatory processing. *Behaviour Research and Therapy*, 38(3), 243-257. [https://doi.org/10.1016/s0005-7967\(99\)00040-6](https://doi.org/10.1016/s0005-7967(99)00040-6)
- Muthén, L. K. & Muthén, B. O. (2010). *Mplus user's guide* (6th ed.). Author
- Pestana, M. H., & Gageiro, J. N. (2008). *Análise de dados para Ciências Sociais: A complementaridade do SPSS* (5th ed.). Edições Sílabo.
- National Institute for Health and Care Excellence. (2013, May 22). Social anxiety disorder: recognition, assessment and treatment. <https://www.nice.org.uk/guidance/cg159>
- Ranta, K., Tuomisto, M. T., Kaltiala-Heino, R., Rantanen, P., & Marttunen, M. (2013). Cognition, imagery and coping among adolescents with social anxiety and phobia: Testing the Clark and wells model in the population. *Clinical Psychology & Psychotherapy*, 21(3), 252-263. <https://doi.org/10.1002/cpp.1833>
- Rao, P. A., Beidel, D. C., Turner, S. M., Ammerman, R. T., Crosby, L. E., & Sallee, F. R. (2007). Social anxiety disorder in childhood and adolescence: Descriptive psychopathology. *Behaviour Research and Therapy*, 45(6), 1181-1191. <https://doi.org/10.1016/j.brat.2006.07.015>
- Rapee, R.M., & Heimberg, R.G. (1997). *A cognitive-behavioral model of anxiety in social phobia*. *Behaviour Research and Therapy*, 35, 741-756.
- Ribeiro da Silva, D., Vagos, P., & Rijo, D. (2019). An evolutionary model to conceptualize psychopathic traits across community and forensic male youth. *International Journal of Offender Therapy and Comparative Criminology*, 63(4), 574-596. <https://doi.org/10.1177/0306624x18823624>

- Rijo, D., Brazão, N., Barroso, R., Da Silva, D. R., Vagos, P., Vieira, A., Lavado, A., & Macedo, A. M. (2016). Mental health problems in male young offenders in custodial versus community based-programs: Implications for juvenile justice interventions. *Child and Adolescent Psychiatry and Mental Health, 10*(1). <https://doi.org/10.1186/s13034-016-0131-6>
- Rubin, K.H. & Burgess, K. (2001). Social withdrawal. In M.W. Vasey & M.R. Dadds (Eds.), *The developmental psychopathology of anxiety*. (pp. 407-434). Oxford University Press.
- Rudy, B. M., Davis, T. E., & Matthews, R. A. (2014). Cognitive indicators of social anxiety in youth: A structural equation analysis. *Behavior Therapy, 45*(1), 116-125. <https://doi.org/10.1016/j.beth.2013.09.003>
- Salvador, M.C. (2009). *Ser eu próprio entre os outros: um novo protocolo de intervenção para adolescentes com fobia social generalizada* [Unpublished doctoral dissertation] Faculty of Psychology and Educational Sciences of University of Coimbra.
- Salvador, M.C., Cunha, M., Pinto Gouveia, J., & Silva [in press]. A Escala de Comportamentos de Segurança em Situações Sociais para Adolescentes (ECSSSA): Características psicométricas.
- Schneier, F. R., Johnson, J., Hornig, C. D., Liebowitz, M. R., & Weissman, M. M. (1992). Social phobia. *Archives of General Psychiatry, 49*(4), 282. <https://doi.org/10.1001/archpsyc.1992.01820040034004>
- Schreiber, F., Höfling, V., Stangier, U., Bohn, C., & Steil, R. (2012). A cognitive model of social phobia: Applicability in a large adolescent sample. *International Journal of Cognitive Therapy, 5*(3), 341-358. <https://doi.org/10.1521/ijct.2012.5.3.341>

- Sheehan, D. V., Sheehan, K. H., Shytle, R. D., Janavs, J., Bannon, Y., Rogers, J. E., Milo, K. M., Stock, S. L., & Wilkinson, B. (2010). Reliability and validity of the mini international neuropsychiatric interview for children and adolescents (MINI-KID). *The Journal of Clinical Psychiatry, 71*(03), 313-326.
<https://doi.org/10.4088/jcp.09m05305whi>
- Silva, C.C. (2010). *A Escala de Pensamentos Automáticos em Situações Sociais para Adolescentes – características psicométricas* [Unpublished master dissertation] Faculty of Psychology and Educational Sciences of University of Coimbra.
- Stangier, U., Heidenreich, T., Peitz, M., Lauterbach, W., & Clark, D. (2003). Cognitive therapy for social phobia: individual versus group treatment. *Behaviour Research and Therapy, 41*(9), 991-1007. [https://doi:10.1016/s0005-7967\(02\)00176-6](https://doi:10.1016/s0005-7967(02)00176-6)
- Stein, M. B., & Kean, Y. M. (2000). Disability and quality of life in social phobia: epidemiologic findings. *The American journal of psychiatry, 157*(10), 1606–1613.
<https://doi.org/10.1176/appi.ajp.157.10.1606>
- Stangier, U., Heidenreich, T., Peitz, M., Lauterbach, W., & Clark, D. M. (2003). Cognitive therapy for social phobia: individual versus group treatment. *Behaviour research and therapy, 41*(9), 991–1007. [https://doi.org/10.1016/s0005-7967\(02\)00176-6](https://doi.org/10.1016/s0005-7967(02)00176-6)
- Stopa, L., & Clark, D. M. (2000). Social phobia and interpretation of social events. *Behaviour Research and Therapy, 38*(3), 273-283. [https://doi.org/10.1016/s0005-7967\(99\)00043-1](https://doi.org/10.1016/s0005-7967(99)00043-1)
- Turner, S. M., Johnson, M. R., Beidel, D. C., Heiser, N. A., & Lydiard, R. B. (2003). The Social Thoughts and Beliefs Scale: A New Inventory for Assessing Cognitions in Social Phobia. *Psychological Assessment, 15*(3), 384-391.
<https://doi.org/10.1037/1040-3590.15.3.384>

- Vagos, P. (2009). Cognitive, affective and behavioral correlates of social anxiety in adolescence. *International Journal of Developmental and Educational Psychology*, 1(1), 293-301
- Vagos, P., Pereira, A., & Beidel, D. (2010). Adaptação e validação de uma escala de medida de cognição na ansiedade social. *Avaliação Psicológica*, 9(3), 393-40
- Vagos, P., Pereira, A., & Cunha, M. (2013). Evaluating social fears in late adolescence: Study with a Portuguese sample. *European Journal of Developmental Psychology*, 11(3), 373-385. <https://doi.org/10.1080/17405629.2013.841093>
- Wells, A. & Clark, D. M. (1997). Social phobia: A cognitive approach. In G. C. L. Davey (Ed.), *Phobias: A handbook of description, treatment and theory*, (pp. 3–26). Wiley.
- Wittchen, H., & Beloch, E. (1996). The impact of social phobia on quality of life. *International Clinical Psychopharmacology*, 11(3), 15-23. <https://doi.org/10.1097/00004850-199606003-00004>
- Wittchen, H., Stein, M. B., & Kessler, R. C. (1999). Social fears and social phobia in a community sample of adolescents and young adults: Prevalence, risk factors and Comorbidity. *Psychological Medicine*, 29(2), 309-323. <https://doi.org/10.1017/s0033291798008174>