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2. Social anxiety and its consequences for well-being through test anxiety and academic performance

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Abstract

Social anxiety is one of the most common mental disorders. Studies show that 7-13 % of general population in Western countries suffers from this ailment. It may coexist with depression, general anxiety disorder, panic disorder and more. Moreover, social anxiety can cause eating disorders and a large percentage of social anxiety disorder patients were reported to abuse alcohol and drugs. On the other hand, social fears are also common amongst the general population. Approximately 40% of people find it difficult to talk to strangers, give public speeches or participate in various meetings or any other social situation. Specific form of social anxiety, interesting due to constant examination in educational system, is a problem which has been called test anxiety or examination stress. Evidence suggest that this condition may be responsible for some variation in subjective well-being. This article analyses the prevalence, risk factors, disease impact and treatment of social anxiety from the perspective of its meaning within educational context.

1. Introduction

Schools and to some extent universities are highly social constructs. In this institutions children and adolescents spent considerable amount of time of their everyday life. Environments like that somewhat force students to spend this time in the presence of others. Moreover, this situation fosters the possibility of being observed and judged. Fear and avoidance of being in such position is termed social anxiety and it is one of the most common psychopathologies in modern societies. Furthermore, schools and universities above all else are places to acquire knowledge and education, therefore, should help provide well-being to all current students as well as graduates. However, social anxiety may interfere with this process. Thus, it is essential to understand how social anxiety can influence one's welfare.

2. Social anxiety and Social Anxiety Disorder

Social Anxiety Disorder (SAD), also known as social phobia (SP), commonly begins to develop in childhood or early adolescence (Chavira & Stein 2005) and generally becomes chronic. At pathological level, SAD has immense impact on day-to-day life, thus can diminish quality of relationships between individuals as well as their professional career. Generally, anxiety is connected with four interrelated experiences, including somatic, behavioural, affective and cognitive aspects. DSM-5 points to: a persistent fear of social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others and a continuous fear of judgement and humiliation; situations cause panic attacks, avoidance of social interactions; distress interferes significantly with the person's normal routine, occupational (academic) functioning, and social activities or relationships, or there is a marked distress about having the phobia. Unlike people who willingly separate themselves from others as a result of psychiatric conditions like schizoid personality disorder, individuals with SAD desire the company of other people. However, the discomfort associated with social situations makes them bypass companionship. Such individuals experience distress connected with expecting critical evaluation and they are afraid of acting in embarrassing and inappropriate

way in the presence of others. Participating in social events might invoke anxiety and even cause a panic attack. Most frequently, patients recognize these fears as overblown and unreasonable but they are not able to forestall such reactions. They struggle with visible symptoms such as blushing, nausea, sweating or trembling which are perceived by them as humiliating and as symbols of their condition alarming other of their nervousness. For children, DSM-5 list includes severe, prolonged crying or tantrums, becoming physically immobilized, shrinking away from other people, extreme clinging and not being able to speak in social situations. More severe social phobias are predominantly closely related to low self-esteem.

Social anxiety is one of the most common mental disorders. Studies show that 7-13% of general population in Western countries suffers from this ailment. Lifetime prevalence of SAD when taking in to account all studies, vary from 0% reported in men in Seoul to 52.7 % in Udmurtia, Russia (Furmark 2002). However, outcomes were gathered using different psychological tools, therefore, any assumptions based on this results need to be made carefully. Studies conducted on higher education students in UK show that 10% of learners suffer from marked-to-severe social anxiety (Russell & Shaw 2009). In Sweden prevalence rate of SAD in students was estimated at 16.1% (Tillfors & Furmark 2007). Both results in higher education students are comparable to general populations in respectable countries. This results indicate that social anxiety is a major problem in our society. Thus, it is essential to understand how one can develop SAD.

Social anxiety has no one clear cause, but rather emerges by interaction of many potential risk factors which can be divided into two categories: biological and environmental. The first one contains genes mediating brain changes that affects risk factors. Corticotropin releasing hormone gene is, for instance, associated with behaviourally inhibited temperament. Individuals high in BIS (behavioural inhibition system) sensitivity (temperamental trait) are more likely to be socially anxious (Rowell 2013) just as people with a high level anxiety trait and shyness. The last one is considered biological because of polymorphisms of the serotonin transporter gene (5-HTT) which is related to the trait. The presence of the short form of the 5-HTTLPR polymorphism in fact has a small but reliable influence on the manifestation of trait anxiety (Schinka, Busch, Robichaux-Keene 2004). Studies have shown that people with social anxiety disorders have increased activation in the amygdala and insula (Etkin, Wager 2007). Amygdala activation is induced in genetically determined Williams syndrome - which is revealed by social fearlessness, so activation may be a feature of inter-individual (Stein & Stein 2008). Furthermore, there is also evidence that dysfunction of ventrolateral prefrontal cortex (VLPFC), such as negative correlation between right VLPFC activation and social avoidance and reduced response in close area of VLPFC in response to negative emotional pictures is shown among patients diagnosed with social anxiety disorders (Yokoyama et al. 2015). The second group of risk factors consist of parenting characteristics explicitly parental overcontrol (as it may disturb child's' autonomy development) and to minor degree parental rejection and lack of warmth, which are the root of insecure attachment. Moreover, parents with psychopathological history tend to have their offspring more prone to psychopathologies. Researches show that there is substantial connection between parental social phobia and SP in their descendants. Furthermore, traumatic events that leave an imprint on one's' life can evoke social anxiety disorder, situations like separation from parents, sexual abuse, familial violence and childhood illness or bullying. What is more, socioeconomic status is positively related to SAD as poverty can have immense impact on one's social life. This risk factor has higher prevalence in developing than in developed countries. Not without meaning are cultural norms when it comes to levels of social anxiety. Studies show that participants from collectivistic countries tend to report higher degree of SAD than their individualistic counterparts. This may be occurring due to strict rules about social behaviour in collectivistic countries and social anxiety invoking sanctions for breaking them. Another potential factor responsible for SP can be ethnicity, as different groups are under the influence of one governments, some of them might be treated with cruelty. Last element increasing risk of social anxiety is gender. Studies show that girls suffer from SP than boys with ratio 3:2. It is thought that this difference may be

influenced by gender roles as stereotypical female traits are more in line with symptoms of anxiety (Brook and Schmidt 2008).

Social anxiety is situated among the most frequent psychiatric disorders. It is a significant risk factor for developing major depression and it often coexists with major depression. What is more, the coexistence of SAD and major depressive disorder ($r = .52$) might also intensify the risk of suicide. SAD is also known to be comorbid with panic disorder ($r = .48$), agoraphobia ($r = .68$), PTSD ($r = .43$), separation anxiety disorder ($r = .34$), dysthymia ($r = .55$), manic/hypomanic disorder ($r = .46$), oppositional defiant disorder ($r = .47$), ADHD ($r = .51$) and substance disorders (Kessler et al. 2005). The most prevailing condition occurring with SAD is test anxiety. Longitudinal study conducted by Knappe (2011) throughout ten years suggests that 14% of social phobics fears' only taking tests or exams situations as opposed to any other social situation (e.g. going to parties or meetings). This result is more interesting when taking into account that SAD does not occur with any other singular feared social situation more than in 2% (with exception for fear of speaking in front of others - 7%). What is even more interesting when taking into consideration at least one more fear of social situation plus test anxiety percentage of simultaneously having them with SAD skyrockets to 75%. Thus, it is highly interesting to fully understand this relationship.

3. Test anxiety and subjective well-being

By virtue of living in a world in which students are being constantly tested, they are prone to experience high level of stress during taking various kinds of exams. This caused a problem which is developing over the years and has been called test anxiety or examination stress. It is described as the feeling of hopelessness, expecting oneself to fail, fear and uneasiness. Moreover, individuals with high test anxiety worry about the consequences of failing. Adding to this, their critical thoughts toward themselves and critical internal dialogue lead to disruption in cognitive functions which otherwise, could be used to properly focus on given tasks. However, another understanding of this construct assumes that test anxiety consists of two components: worry, which is connected to cognitive concerns about the exam (focusing on potential negative consequences, failure or preoccupation with comparing one's' abilities to others), and emotionality which is generally characterised as awareness of one's' physiological state (e.g. tension, accelerated heart rate) (Liebert and Morris 1967).

Subjective well-being (SWB) depends on people's happiness and refers to how they experience the quality of their live. Happiness is defined as combination of life satisfaction and relative frequency of negative and positive affect. SWB therefore includes moods, emotions and evaluation of one's satisfaction with general and specific areas of one's life. People with high well-being are characterized by being able to successfully balance their resources and challenges. Subjective well-being appears to be consistent over time and is heavily linked to personality traits. Additionally, health and SWB may mutually influence each other as good health tends to be associated with greater happiness. Furthermore, a number of research have found that positive emotions and optimism can have an advantageous impact on health (Diener & Chan 1984).

The fear of performance and evaluation experienced by individuals with test anxiety is also present in social phobia, however persons with test anxiety frequently claim that it is possible for them to socialize and take part in many events without any problems. Taking that into account, social phobia does not have to be diagnosed in persons with test anxiety (Zeidner 1998).

According to Zeidner (1998), cognitive test anxiety causes decrease in the academic performance. Students expecting failure may avoid preparation to exams, which might lead to a self-fulfilling prophecy. Research shows that individuals with good performance have healthier coping mechanisms (such as confronting with problematic situations), higher levels of satisfaction and general well-being compared to students with regular performance. Low performance is connected with loss of self-confidence, avoidance coping mechanisms and

general lower satisfaction (Trucchia et al. 2013). Academic results shape a person's life chances, and well-being affects social connections and depression level later in life. Published in 2015 German longitudinal study (Steinmayr et al. 2015) was investigating relationship between subjective well-being, test anxiety and academic performance. Scientists reported that test anxiety predicts academic performance (measured with GPA), researchers hypothesized that worry will be a significant predictor of student's GPA. High scores of worry were indeed connected with considerable decreases in achievement scores. Moreover, worry predicted negatively changes in one's GPA. Furthermore, study established that students' academic achievement directly predicts changes in cognitive component of well-being (life satisfaction), but does not the affective component of SWB (mood-level). Researchers suggest that this effect occurred because mood might be more susceptible to activities outside of school rather than to school environment only. Further, scientists were investigating the relation between test anxiety and subjective well-being. They discovered that only worry predicts changes in SWB, both in its cognitive and emotional component.

4. Treatment

Information about treatment is crucial for social phobics and people suffering from social anxiety. Three independent meta-analyses were performed recently (Bandelow et al. 2015; Mayo-Wilson et al. 2014; Canton, Scott, & Glue 2012). Bandelow et al. reported all data as pre-post effect sizes using Cohen's *d*, Mayo-Wilson et al. reported effect sizes comparing placebo, drugs, psychological therapies and combinations of drugs and psychotherapies to waitlist using Cohen's *d* while Canton, Scott and Glue reported efficacy of the drugs comparing them to placebo, psychotherapies and combinations of drugs and psychotherapies as well as effectiveness of psychotherapies collating to combinations of drugs and psychotherapies using Mantel-Haenszel odds ratio.

Control groups. The most common control group is waitlist. According to Bandelow et al. passing time is sufficient to reduce social anxiety ($d = .21$; 95% CI: .09-.33) while psychological placebo has medium effect size ($d = .52$; 95% CI: .20-.84) and placebo pills large ($d = .94$; 95% CI: .77-1.12) and are as efficient as psychological therapies. Researches are inconsistent in comparing placebo pill and psychological placebo. The main reason is the low number of studies including psychological placebo as control group, further research on effect of psychological placebo is needed.

Medications. Selective serotonin reuptake inhibitors (SSRIs) and serotonin norepinephrine reuptake inhibitors (SNRIs) are the most frequently used pharmacological intervention in studies and according to Bandelow et al. are the most effective drugs for social phobics. On the other hand, all studies showed high results of phenelzine, which is irreversible monoamine oxidase inhibitor, and the whole group of monoamine oxidase inhibitors (MAOIs), but the number of studies and size of samples is insufficient to create generalizations. Other groups of compounds which can be used in treatment are benzodiazepines and anticonvulsants but the number of studies including them is low and further studies are needed to properly evaluate effect sizes of MAOIs, benzodiazepines and anticonvulsants.

Psychological therapies. Cognitive-Behavioural Therapies (CBTs) are the most commonly used psychological interventions. According to Mayo-Wilson et al. and Bandelow et al. there is difference in efficacy between group CBTs and individual CBTs in favour of individual therapies. What's more, effectiveness of CBTs varies depending on models, but the number of studies and size of samples is insufficient to create generalizations and further studies are needed. Other therapies effect sizes range from .26 for supportive therapy to .88 for internet with support. Huge inconsistency between meta-analyses occurs in effect sizes of mindfulness training, Mayo-Wilson et al. estimate that mindfulness has medium or even small effect with $d = .39$ (95% CI: .03-.82) while Bandelow et al. estimate effect size of mindfulness on $d = 1.75$ (95% CI: 1.40-2.09). Other studies (Hofmann, Sawyer, Witt, & Oh 2010) showed that mindfulness was moderately effective in treating anxiety with d equal .63 (95% CI: .53-

.73). What is more, Gotink et al. (2015) analysed mindfulness studies related to health care and showed that mindfulness training improves symptoms of depression, stress, anxiety ($d = .49$; 95% CI: .37-.61; $N = 2525$), physical functioning and quality of live. All researches include only 2 or 3 studies with mindfulness training and are insufficient to create generalizations about effect size of mindfulness, but it is reasonable to claim that mindfulness has at least moderate efficacy in treating social anxiety, but further studies are needed to provide strong empirical evidence.

Combined treatment. Different combinations of psychological and pharmacological interventions were examined by researchers, but the quality of evidence was poor. In combined treatment the most commonly used psychotherapies were CBTs and medications were assessed only in one trial. The evidence suggests that phenelzine is the most efficient drug in this type of intervention. Overall, combined treatment appears to be the most effective form of treatment of social anxiety, but further studies including all types of medications and psychotherapies are needed to provide empirical data supporting this thesis.

Both pharmacological and psychological interventions are necessary in treatment of social phobics and people suffering from social anxiety. Medications are more efficient than psychotherapies and less than combined treatment. On the other hand, gains from therapies maintain after termination of treatment, whereas patients receiving drugs experience a recurrence of anxiety symptoms after stopping medication. Summing up those facts it is suggested to use medications for social phobics and progressively replacing them by psychological therapies with the progression of therapy.

5. Summary

Based on an examination of empirical literature across multiple methodologies, this review concludes that social anxiety and social phobia are extremely dangerous for social and personal life of individuals. SAD can have an enormous impact on one's achievement and feeling of welfare. Thus, many people live below the level of happiness they could have if their condition was properly treated. Furthermore, millions of children are at risk of underachievement in school and lower subjective quality of life. Spreading awareness about social anxiety, its sources and effects in society is crucial for people suffering from social anxiety. This undertakes should help social phobics realise that it is something more than just a shyness and give them a chance to fully enjoy life without restrains imposed on them by their ailment. Number of social phobics in society equals at least 10% and it is important to systematically help them in overcoming fears and creating healthy view on social interactions. Psychologists should also focus on children and prevention in early childhood, because it is one of the best ways to reduce percentage of social phobics in future society. Special care should be lavished on social phobic parents as they can invoke SAD in their children creating new generations of social phobics. What is more, further studies about effects of MAOIs, benzodiazepines, anticonvulsants, mindfulness and combined treatment on social anxiety are needed.

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