SOCIAL ANXIETY: RISK FACTORS OF SOCIAL INTERACTIONAL ANXIETY AND PERFORMANCE ANXIETY AMONG MEDICAL STUDENTS

BY

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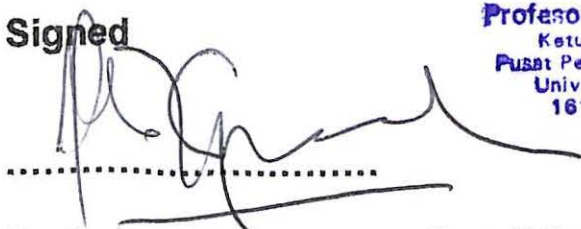FOR THE DEGREE OF
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BONAFIDE CERTIFICATE

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LIST OF ABBREVIATION

BDI	Beck Depression Inventory
DSM III	Diagnostic Statistical Manual 3rd Edition
DIS	Diagnostic Interview Schedule
DSM IIIR	Diagnostic Statistical Manual 3rd Edition (Revised)
DSM IV	Diagnostic Statistical Manual 4th Edition
ICD 10	International Classififcation of Diseases 10th Edition
DSM IV	Diagnostic Statistical Manual 4th Edition
e.g	example
etc	etcetera
et al	and the rest
health sc	health science faculty
NS	not significant
OR	odds ratio
SIAS	Social Interaction Anxiety Scale
SPS	Social Performance Scale
STAI	State Trait Anxiety Inventory
vs	versus
yr	year

ABSTRAK

LATARBELAKANG: Keresahan sosial boleh dicirikan kepada keresahan interaksi sosial dan keresahan persembahan sosial yang merupakan dua situasi keresahan yang utama. Penilaian keresahan sosial di kalangan pelajar perubatan akan membantu mereka memahami masalah ini dan dapat mengelakkan keburukan-keburukannya. Memahami faktor-faktor risiko akan membolehkan pengesanan awal dibuat dan tindakan pencegahan dapat dirancang

TUJUAN: Untuk menentukan faktor-faktor yang berkaitan dengan keresahan sosial menurut Skala Persembahan Sosial dan Skala Keresahan Interaksi Sosial di kalangan pelajar perubatan. Penentu demografik dan korelasi tanda-tanda kemurungan dengan keresahan sosial yang teruk akan dikaji.

KAEDAH: Satu kajian hirisan lintang dengan persampelan mudah dilakukan ke atas pelajar-pelajar perubatan tahun satu dan empat, dan pelajar tahun satu Pusat Pengajian Sains Kesihatan sebagai perbandingan. Pelajar-pelajar diminta untuk mengisi soal selidik Skala Persembahan Sosial, Skala Keresahan Interaksi Sosial, Inventori Keresahan Keadaan Semasa dan Pewarisan. Pelajar-pelajar dikategorikan kepada dua kumpulan: tanda-tanda keresahan sosial yang teruk dan ringan. Faktor-faktor risiko dan keadaan klinikal yang berkaitan dikaji.

KEPUTUSAN: Tanda-tanda keresahan sosial adalah jelas pada pelajar-pelajar tahun pertama kedua-dua fakulti. Faktor-faktor demografik yang berkait secara bermakna dengan keresahan sosial ialah jantina perempuan, kaum Melayu, usia yang muda, dan berasal dari kawasan luar bandar, manakala kedudukan sebagai anak tunggal atau yang pertama adalah tidak berkaitan. Keresahan interaksi sosial dan keresahan persembahan sosial adalah berkorelasi secara positif dengan ukuran kemurungan.

KESIMPULAN: Tanda-tanda keresahan sosial adalah sangat ketara pada golongan awal dewasa dan jika tidak dkenalpasti dari peringkat awal boleh membawa kepada masalah akademik dan keadaan klinikal seperti kemurungan.

ABSTRACT

BACKGROUND: Social anxiety can be conceptualized into social interactional anxiety and social performance anxiety as two broad categories of feared situations. Assessment of social anxiety in medical students would help them understand the situation and avoiding its consequences. Understanding its risk factors would enable early detection and intervention.

AIM: To determine the factors associated with social anxiety according to Social Performance Anxiety (SPS) and Social Interaction Anxiety Scale (SIAS) among medical students. The demographic determinants and correlation of depressive symptoms with severe social anxiety will be assessed.

METHOD: A cross sectional study with purposive sampling was conducted among first year and fourth year medical students and first year health science students as a comparison. The students were asked to fill-up a booklet with questionnaires of Social Performance Anxiety (SPS), Social Interaction Anxiety Scale (SIAS), State Trait Anxiety Inventory (STAI) and Beck Depression Inventory (BDI). Students were categorized into two groups: those with severe social anxiety symptoms and those with low social anxiety symptoms. Risk factors and associated clinical condition were assessed.

RESULT: Social anxiety symptoms are more marked in first year students of both faculties. Demographic factors that significantly associated with social anxiety were female, Malay race, younger age and rural residence, while firstborn was not. Social interactional anxiety and social performance anxiety are positively correlated with depressive scores.

CONCLUSION: Social anxiety symptoms are highly prevalent in young adult and if goes untreated would lead to academic difficulties and associated clinical condition such as depression.

INTRODUCTION

Chapter 1

Introduction

1.1 Medical education

Medical undergraduate education is characterized by many psychological changes in students. Medicine is of course a stressful career. Long hours of caring for sick people, some of whom will never get better or might inevitably die, takes strength of character as well as stamina. The education, which prepares doctors for a medical career, should respond to these challenges. However, medical education itself is a contributor to stress.

During the undergraduate phase, medical students are damagingly overloaded with content, and the relevance of what they are taught often eludes them. Vast amount of information are committed to memory for dubious reasons and doubtful benefit. Newly qualified doctors find themselves ill prepared for what they are expected to do (Coles C, 1994).

Medical students face additional pressures because the course is longer and the workload is heavier than for most other courses. The workload of the course was the most common cause of stress cited, with students describing difficulty in keeping up with the pace of work and feeling unable to catch up once they had fallen behind. There are also pressures peculiar to medical training such as dealing with patients, suffering and death (Guthrie *et al*, 1995).

Coles C (1994) has outlined four elements of the task to be tackled in medical education at both undergraduate and postgraduate levels. First, the curriculum itself is a major source of stress, where overload of information is presented to students in a context, which far removed from its eventual use. Second, many medical teachers have never been taught to teach. Faced with the frustration of students not knowing what they are supposed to have learnt, some clinicians even today deploy a style of teaching by humiliation. Third, the climate of much medical education is often unsupportive and threatening where it should be collaborative. Fourth, a number of medical schools still do not provide adequate support services for students and trainees, either to prevent the harmful effects of stress or to deal satisfactorily with them once they have developed.

Medical education may succeed tolerably well in teaching technical knowledge and skills in carrying out health-related research, but it often fails to produce well-adjusted students, accomplished in communications skills, who are properly self-caring and compassionate. Unless students and trainees learn how to study effectively they cannot readily become life-long learners. They should acquire too the skills of time management and the ability to cope with the stresses of medical life (Coles C, 1994).

A struggle for medical students is how to strike a healthy balance between their personal and professional lives. Many students make academic superiority their number one priority at the expense of their personal growth and development. In fact, imbalanced lifestyles and emotional isolation coupled with status deprivation

have been identified as the three socialization conditions contributing to physical and emotional exhaustion, depression and addiction (cited in Wolf TM, 1994).

1.2 Social anxiety

Social anxiety symptoms have been noted since the time of Hippocrates but the disorder was a nameless affliction until the late 1960's and did not make its way into psychiatric manuals until 1980 (Schrof *et al*, 1999).

Social phobia is defined by a persistent fear of embarrassment or negative evaluation while engaged in social interaction or public performance. Activities such as meetings or interactions with strangers, attending social gatherings, formal presentations, and those requiring assertive behaviour are commonly feared by individuals with social phobia. Social phobia is highly comorbid with other anxiety disorders, depression and substance abuse, and it significantly increases the risk for these disorders. It runs a chronic course and is associated with significant impairments in functioning and overall quality of life (Heimberg *et al*, 1999).

LITERATURE REVIEW

Chapter 2

Literature Review

2.1 Medical education

2.1.1 Medical education and stress

It is clear that medical education is not in an optimal state of health and may, in fact, be a health hazard for many young and impressionable incoming medical students (Muller 1984; cited in Wolf TM 1994). It has deleterious consequences. Trainees (students, interns and residents) suffer high levels of stress, which lead to interpersonal relationship difficulties, depression and anxiety, substance abuse and even suicide(Pits FN *et al*,1961; Richings JC, 1986; Shapiro SL, 2000). Stress may also harm trainees professional effectiveness; it decreases attention, reduces concentration, impinges on decision making skills and reduces trainees abilities to establish strong physician-patient relationships.

Numerous studies have revealed high rates of psychological morbidity in medical students at various stages of their training. A recent meticulous study by Surtees and Miller (1990) has drawn attention to the possible high levels of psychological distress suffered by students during their first year of medical training. They found almost half of the students at Edinburgh University Medical School reported high levels of neurotic symptoms at the beginning of the academic year and one-third at follow-up six months later.

Firth J (1986) estimated the prevalence of emotional disturbance in **fourth year** medical students to be 31.2%, compared to 9.7% for young unemployed people. He screened fourth year medical students at three universities in the north of England. He found high levels of both stress and psychological morbidity. Much of this excess symptomatology may be short-lived and fail to meet the criteria for psychiatric caseness (Wells et al, 1987) but nonetheless the study of Zoccolillo et al (1986) found a rate of probable major depression (by DSM III Criteria) which was three times that of general population. Depressed mood and recent adverse life events have both been found to be related to academic performance, but the effects are not large (Miller & Surtees, 1991).

2.1.2 Depression and anxiety in medical students

There is evidence to suggest that there is shift in attitudes, values, mood and personality during the course of medical education. It has been shown in both cross-sectional and longitudinal studies that cynical attitudes increased and expressions of humanitarian feelings decreased as students progressed through medical school (Eron 1955, 1958: cited in Wolf TM, 1994). Graduating medical students perceived that they became more cynical over the course of their medical education (Wolf et al 1989).

In a longitudinal study on depressed mood in which assessments were conducted six times from the first to the last year, at least 12% of the class showed depressive symptoms at any assessment during the first three years, the highest being 25% during the end of the second year (Clark DC and Zeldow PB,

1988). In a second longitudinal study with first- and second-year students, the incidence of major depression or probable major depression was 12% or three times greater than the rate in the general population. With first-year medical students, anxiety levels were one standard deviation above the mean relative to non-patient levels and depression doubled over the course of the first year (Vitaliano *et al*, 1989). In another study, self esteem and positive mood (joy, contentment, vigour and affection) decreased while negative mood (depression and hostility) increased over the course of the first year (Wolf et al 1991). In a study of first- and second-year medical students, symptoms of anxiety were reported above the median of a normative population of psychiatric patients (Vitaliano *et al*, 1984). These results suggest that there is a shift to a more cynical (pessimistic) orientation during medical school as well as significant elevations and increases in symptoms of depression and anxiety. These shifts may, in part, be attributable to coping with a stressful learning environment (Wolf TM 1994).

Lifestyles changes and changes in stress have been found with first-year students over the course of the first year. For example, a decrease was found on the following characteristics: physical activity, sleep, general health, leisure and recreational activities (cited in Wolf TM 1994). Hassles increased and uplifts decreased (Wolf TM *et al*, 1991) while daily stress increased (Vitaliano PP *et al*, 1989). In a cross-sectional study of students from all 4 years, generally seniors exercised more frequently, slept more hours per night, consumed fewer drinks containing caffeine and had a greater number of friends they felt close to than did other students. First-year students spent the most time studying and the least

amount of time on recreational activities . Medical education can have a dramatic effect on lifestyle sacrifices made by medical students. **Seniors** appeared to be in the **best position** to maintain a healthy balance between their personal and professional lives (Wolf TM, 1994).

Many attempts have been made to explain individual differences among medical students. It is important to consider demographic differences in the way students might respond to the stress of medical education; sex differences, racial differences and marital status.

Sex differences have been found in some studies. During the first-year, women students noted to have developed more psychiatric symptoms and tended to report less satisfaction with life by mid-year and remained more symptomatic by the end of the year but to a lesser extent (Llyold & Gartrell, 1981). Women also reported more role conflict and described their families as less supportive of their career choice. In a second study, women students reported more negative affect and physical symptoms during the first term of medical school as well as reporting a greater decrease in positive emotions and perceived peer friendliness than men (Alagna & Norokoff, 1986, cited in Wolf TM 1994).

After one year entering medical school, black students manifested slightly lower self esteem and higher levels of hostility and external locus of control. The Hispanic students continued to report higher self esteem and greater social supports but showed increased external locus of control and higher alcohol consumption. In another study, black medical students perceived more stressors

than white medical students in the same environment during the first year (Strayhorn 1980, cited in Wolf TM, 1994).

Regarding marital status, the stressors of medical school were more severe for the single students; moreover, stress levels of formerly single students declined after marriage (Coombs & Fawzy, 1982).

There were several advantages to studying **depression and social anxiety simultaneously**. Evidence suggests that depression, social anxiety and other forms of emotional distress (at least at subclinical levels) are prevalent among Asian American college students (Okazaki S, 1997) as well as among White American college students (Gotlib, 1984). Confirmatory and exploratory factor analytic studies of measures of depression, social anxiety, shyness and loneliness also revealed moderate interrelatedness among the measures. Furthermore, Ingram (1989) demonstrated that not controlling for affective confound between depression and social anxiety can substantially alter findings of social cognition research.

2.2 Social anxiety

2.2.1 Social Phobia or Social Anxiety Disorder?

Social phobia was originally described as a fear of speciific social situations such as public speaking, eating in front of others, or using public restrooms. Initial indifference to social phobia led certain people to call it "neglect anxiety disorder" (Liebowitz MR et al, 1985). Two decades later, it was recognized as a chronic and highly prevalent disorder often associated with serious impairment

(Schneier *et al*, 1992). However, this message has yet to be widely embraced (Liebowitz MR *et al*, 2000)

Although individual with social phobia use non psychiatric medical services more frequently than other persons, it often goes unrecognized. In a recent French study, 5% of primary care patients met the criteria for social phobia, but physicians did not identify psychological problems in this these patients unless they were also depressed (Weiller E *et al*, 1996). Poor recognition may be related to the failure of individual with social phobia to bring their anxiety directly to the physician's attention. For instance, in the Epidemiological Catchment Area Study, only three of 98 persons with social phobia openly sought help for it (Davidson JR *et al*, 1993). Physicians will miss many patients' social fears unless they ask, and they will not ask unless they think it is important to do so.

The name social phobia may contribute to this problem. The DSM-IV Taskforce on Anxiety Disorders gave social phobia the alternative name *social anxiety disorder*, which appropriately connotes a more pervasive and impairing disorder than is implied by the label *social phobia* or its limited and outdated description in DSM-III. Liebowitz and a group of researchers from the New York State Psychiatric Institute and Columbia University recommended that the social anxiety disorder should be the primary name for this disorder. It more strongly conveys the sense of pervasiveness and impairment than does social phobia, it has no history to suggest that the disorder is unimportant, and it is better differentiated from specific phobia. While, it might seem like only public relations, we are affected by our use of language. Switching to the alternative name, social anxiety disorder, may be the first step in educating both psychiatric and primary

care physicians about the significant nature of this impairing disorder (Liebowitz *et al*, 2000).

2.2.2 Diagnostic thresholds for social phobia

Social phobia is being increasingly recognized as a prevalent psychiatric disorder with considerable attendant psychosocial morbididty (Schneier FR *et al*, 1992). Efforts to appreciate the true extent of this problem in the community have been hampered. However, diagnostic interviews have only covered a very narrow range of social situations or focused on only severe cases by requiring a high level of psychosocial impairment. Theoretically these weaknesses would result in an underestimation of the true prevalence of social phobia in the general population. Stein MB (1994) designed a study, though through telephone survey, to compensate these shortcomings by including a wider range of social situations and by separately determining whether or not distress or impairment was associated (in parallel with DSM III R criteria).

When the diagnostic threshold included persons who reported at least moderate interference or distress in any situation, 18.7% respondents fell within this category. When it was raised to include only those with marked interference or distress, the rate dropped to 7.1%. Alternative indication of caseness used was looking at the number of situations in which the social anxiety is experienced. The majority (68.6%) of the individuals who reported anxiety acknowledged difficulty with more than one social situation; 39.7% with more than two social situations; 18.3% with more than three social situations and 8.7% with more than four social situations.

Stein MB *et al.* (1994) emphasized that their data came from a telephone survey of social phobia with several limitations which were discussed. For this reason they referred their findings as ' social anxiety syndrome' . In their conclusion they stressed that the point prevalence of social anxiety syndrome can vary markedly, depending on the diagnostic threshold used. By altering the threshold for interference with lifestyle or subjective distress or by restricting diagnosis to particular situations, the rate was seen to vary by up to ten fold.

This idea of a diagnostic threshold implies that the symptoms lie on a continuum. Some researchers think that social phobia represents the severe end of a continuum of shyness (cited in Lang AJ & Stein MB, 2001). Although the relationship between shyness and social phobia has not been adequately researched , there are a number of similarities between the two constructs. Both are characterized by the manifestation of symptoms of physiologic arousal and fears of negative evaluation in response to various social situations. Differentiation may be a matter of severity. Shyness tends to be transitory and associated with little impairment or avoidance, whereas social phobia is more chronic and often associated with substantial impairment or avoidance (Chavira DA & Stein MB 1999)(cited in Lang AJ & Stein MB, 2001).

2.2.3 Prevalence

In the past two decades the prevalence of social anxiety or phobia has been studied in several community studies throughout the world. Regier et al in 1990 in his Epidemiologic Catchment Area (ECA) programme found the lifetime prevalence of DSM III social phobia to be 2.8%. Similar estimates were obtained

in Munich (2.5%)(Wittchen *et al*, 1992), Edmonton (1.7%)(Bland *et al*, 1988), Zurich (3.2%) (Angst & Dobler-Mikola, 1985) and New Zealand (3.9%) (Wells *et al*, 1989). These "underestimation problem" possibly due to the lack of precision in DSM III and the version of the DIS used in the surveys assessed social fears as part of the simple phobia section, covering only limited range of social fear situations (Wittchen *et al*, 1999).

Above problem has been corrected in the successor to the DIS, WHO Composite International Diagnostic Interview (CIDI) (WHO 1990), by developing a separate social phobia module according to the diagnostic criteria of DSM IIIR and the ICD 10. This module evaluates more types of social fears than the original DIS. Community epidemiological surveys using the CIDI have obtained considerably higher estimates of social phobia than all earlier studies, including a 13.3% lifetime DSM IIIR prevalence in the US-National Co morbidity Survey (Magee *et al*, 1996) and a 16.1% lifetime ICD-10 prevalence in Basel, Switzerland (Wacker *et al*, 1992). The higher prevalence estimates might be due to the expanded DSM IIIR and ICD-10 criteria as well as the differences in sample composition or field procedures and the much more comprehensive assessment of social fears (Wittchen *et al*, 1999).

Wittchen et al (1999) reported a community study using DSM IV social phobia in 3021 respondents aged 14-24 and confirms that social phobia is a quite prevalent disorder in this age group. They find that DSM IV social phobia, with lifetime rate of 9.5% for females and 4.9% for males, is considerably more prevalent than in the early DSM/DIS studies but not as prevalent as in the more

recent DSM IIIR/CIDI studies (ranging from 13.3% to 16%) that have been based on samples with an age range, extending throughout adulthood. This is probably due to a more complete assessment of qualifying social fears and especially the younger age group in the study, whereas the lower rates as compared to National Community Survey, NCS (Magee *et al*, 1996) which used DSM IIIR, might be due to the use of stricter impairment and distress criteria as well as a more refined symptom assessment in DSM IV. About one third being classified as generalized social phobia which has earlier age of onset, higher symptom persistence, more co-morbidity, more severe impairments, higher treatment rates and indicated more frequently a parental history of mental disorders.

2.2.4 Risk factors

Despite the substantial differences in estimated prevalence, there is good agreement across studies on risk factors for social phobia in adults. Rates of social phobia are consistently found to be **slightly higher among women** than men, **higher in younger** as compared to older age cohorts and inversely associated with socioeconomic status (Bourdon *et al*, 1988; Bourdon, 1993; Magee *et al*, 1996). There is also agreement across studies that social phobia usually has its onset in childhood or adolescence, usually goes untreated and is associated with poor school and work performance, school dropout, unemployment and alcohol abuse (Davidson *et al*, 1993; Wittchen & Beloch 1996). Other potentially important vulnerability and risk factors, like familial liability (Stein *et al*, 1998) and childhood 'behavioural inhibition' (Biederman *et al* ,1990; Rosenbaum *et al*, 1992) have not yet been studied in any epidemiological study.

There have been several claims in the literature that social fears and shyness may be related to the **position a child holds** in his or her family. For example, Greenberg and Stravynski (1985) found that 63% of male patients and 36% of female patients whose main complaints were social anxiety and avoidance were only or firstborn children. Greenberg and Stravynski suggest that an older sibling may serve the function of a social role model, and firstborn and only children are without such a model (Hudson JL and Rapee RM, 2000). However, Rapee and Melville (1997) failed to find significant differences in offspring family position between socially phobic, panic disordered, and nonclinical control groups. Further research in this area is essential before conclusions about the role of birth order are drawn.

Okazaki S (1997) has studied **ethnic differences** between Asian American and White American college students on measure of depression and social anxiety. Asian Americans scored significantly higher than White Americans on measures of depression and social anxiety. When the covariance between depression and social anxiety was statistically controlled, ethnicity and self construal variables were found to be associated with measures of social anxiety but not depression. These findings suggest a more differentiated perspective on the relations between culture, ethnicity and emotional distress.

There remains some dispute as to whether **avoidant personality disorder** should be considered a separate condition, though it is generally regarded as a severe variant of social phobia (Boone *et al*, 1999). First-degree relatives of

probands with generalized social phobia show markedly elevated rates of avoidant personality disorder compared with relatives of control individuals without social phobia (Stein *et al*, 1998). Estimated rates of comorbid avoidant personality disorder in social phobia vary from 22 to 84% (Lampe LA, 2000).

2.2.5 Social anxiety disorder and psychiatric comorbidity

Social phobia is the most common anxiety disorder and is more frequently associated with secondary depression (22.4%) than any other anxiety disorder. Schneier FR *et al* (1992) suggest that comorbid disorders often complicate the clinical picture in many patients with social phobia. Of the individuals identified as having social phobia in the National Community Survey, NCS, appproximately 80% had more than one psychiatric disorders (Kessler RC *et al*, 1996).

Social anxiety disorder is a particularly difficult problem to detect, since it begins early in life (primarily in the first two decades, Schneier FR et al 1992, Davidson JR et al 1993) and the affected individuals may not recognize their symptoms - usually shyness – as a treatable psychiatric disorder. There are two main subtypes of social phobia currently listed in the DSM IV. The first, which constitutes approximately 75% of social phobias is the generalized subtype, in which most or all social situations provoke anxiety and/or avoidance. The second subtype, which affects approximately one fourth of individuals with social anxiety, includes one or few circumscribed social fears, usually involving performance situations such as public speaking. Individuals with the generalized subtype are three times more likely to suffer from comorbid anxiety disorders and two times more likely to suffer from mood disorders than those with non generalized

subtype (Wittchen *et al*, 1999). Adolescents   who suffer from social phobia are more likely to suffer from major depression, academic difficulties due to attentional disruption related to social anxiety, truancy and other behavioural problems, and alcohol and other substance abuse. At this point, there are too few data to evaluate whether comorbidity affects treatment outcome for social anxiety disorder. One large naturalistic study, which observed a cohort of patients with social anxiety disorder, showed that the clinical status at 65 weeks was not affected by comorbidity. Notably, there was a low rate of remission of social anxiety disorder over this follow-up period (Lydiard RB, 2001).

The consequences of comorbidity in social anxiety disorder are substantial. Compared with individuals with social anxiety disorder only, those who also have comorbid psychiatric disorders are more likely to become dependent on alcohol and to have more substance abuse disorders, are more severely impaired in social and occupational functioning, consume more health care resources and more frequently attempt suicide (Schneier FR *et al*, 1992). In primary care samples, the prevalence of social anxiety disorder is high, and comorbidity with other psychiatric disorders is much more common than social anxiety disorder only. It is possible that early detection and intervention might prevent the accumulation of multiple comorbid disorders and the attendant suffering and billions of dollars lost annually (Greenberg PE *et al*, 1999).

2.2.6 State and trait anxiety

Several researchers have distinguished between state and trait anxiety. State anxiety is a transitory feeling state, which occurs in the presence of an anxiety-provoking stimulus, while trait anxiety is a longstanding personality characteristic resulting in a tendency to respond with anxiety in the face of a variety of psychologically menacing stimuli. Trait anxiety thus influences the frequency of and the degree to which one experiences state anxiety. People who are high trait anxious perceive a wide range of circumstances as threatening and respond with greater elevations in state anxiety (Spielberger *et al*, 1983).

The ability to distinguish low and high state anxiety in low and high trait anxious individuals implies a high degree of discrimination. At a functional level, this skill could enable one to differentiate between avoiding threat to oneself or providing assistance to someone experiencing anxiety. For example, when confronted with an unfamiliar or ambiguous threat, an individual often evaluates the situation based on the responses of those nearby. If someone nearby responds with anxiety, the uncertain individual might be able to perceive the seriousness of the threatening stimuli based on the other's behavior and thereby avoid danger. Recognizing whether or not an individual is an anxious person generally (trait anxious) could significantly affect one's judgment of a potentially dangerous situation. Identifying individuals who are **high trait anxious** may help us to understand the underlying mechanism of this characteristic, and thus facilitate mediation for those who experience frequent, and perhaps unnecessary, state anxiety (Fluck SA *et al*, 2001).

2.2.7 Anxiety and academic performance

It is well documented that high levels of anxiety have a debilitating effect on concept learning, performance in evaluative situations and environmental adaptation: ' although a degree of anxiety can aid the learning process, a high level lowers learning efficiency' (Clark and Schwartz 1989, cited in Romcke J et al, 1998).

A number of studies have compared the performance of students reporting higher levels of anxiety with those of students reporting lower anxiety levels. The results show that on complex learning tasks higher anxiety students scored below the lower anxiety subjects and took longer to become competent on a technical task (Taylor and Spence 1952, Farber and Spence 1953, Eysenck 1982, 1985)(cited in Romcke J et al, 1998). Research by Montague (1953), Lucas (1962), and Spielberger and Smith (1966) also found that the superior performance of lower anxiety students (as compared to higher anxiety students) increased proportionately with the degree of complexity of the learning task. Concept learning has also been shown to be negatively affected by high levels of anxiety (Denny 1966)(cited in Romcke J et al, 1998).

A more rigorous explanation of why anxiety may have a debilitating effect on performance is presented in the **interference model** (Wine 1971, 1980) and the **deficiency model** (Paulman and Kennely 1984)(cited in Romcke J et al, 1998). Proponents of the interference model maintain that students with higher anxiety levels suffer from negative self-preoccupying thoughts that reduce their attention on the task being completed. In other words, these negative thoughts interfere

with the interpretation, integration and retrieval of information. The deficiency model focuses on a failure to develop the study skills necessary for the acquisition of knowledge required in evaluative situations. This is consistent with the view that highly anxious students find it difficult to adapt to the learning environment and retain study and examination techniques inappropriate where higher-order thinking skills and deep learning are essential.

Benjamin *et al.* (1981)(cited in Romcke *et al*, 1998) suggest a causal sequence between the two models: ' ... ability lower than of one's peers may lead to anxiety about achievement. This anxiety in turn results in the use of less effective study habits such as repetitive reading and rote memorization. This in turn results in less effective processing of information and poor test performance, which is further damaged by anxiety and worry during the examination.

2.2.8 Assessment

Although the diagnosis of social phobia has been established for over a decade, only recently have researchers begun to investigate its assessment and treatment. There are several self-report measures of social anxiety, few have assessed differences in the types of situations feared or avoided. These devices include the Social Phobia subscale of the Fear Questionnaire (Marks & Matthews, 1979), the Social Avoidance and Distress Scale - SADS (Watson & Friend, 1969), the Fear of Negative Evaluation Scale - FNES (Watson & Friend ,1969) and the Social Phobia and Anxiety Inventory – SPAI (Turner, Beidel, Dancu & Stanley, 1989).

Social Phobia subscale specifically measures avoidance of social situations that only contains five items and fails to assess the broad range of situations that may be feared by social phobics. SADS and FNES have the subject of debate, although these measures may, in fact, have clinical utility, it is preferable to utilize measures that have been developed for the specific purpose of assessing the concerns of individuals with social phobia and for which normative and validational data with social phobics have been reported. Although SPAI assesses a broad range of social situations and has substantial data supporting its reliability and validity, its does not provide separate scores for different types of anxiety-provoking situations. Assessment of anxiety responses to different classes of situations should have utility for the planning of individualized treatment interventions for the patients with social phobia. A set of scales developed by Mattick & Clarke (1989) addresses this concern.

Liebowitz (1987) proposed **two broad categories of feared situations**; those involving **social interactions** and those in which the person may be **observed by others**. Mattick & Clarke also conceptualized social anxiety as occurring in two similar types of situations. Descriptors such as shyness, dating anxiety, heterosexual anxiety, communication anxiety, and interpersonal anxiety, appear to share a common feature of describing difficulties mixing or interacting with others. By way of contrast, speech anxiety and scrutiny fears (e.g. eating, drinking, writing, etc.) appear distinct, in-as-much as these activities do not necessarily involve interacting with other people, but rather simply being in a situation where one is being watched or observed, or feels others are watching, when undertaking the activity (Mattick & Clarke, 1998).

Leary (1983) (cited in Mattick & Clarke, 1998) has provided a similar conceptual distinction between these types of social fear on the basis of the structure of the situations in which anxiety occurs. He argued that " Interpersonal encounters differ in the degree to which an individual's responses follow from or are contingent upon the responses of other interactants". In the case of ' contingent interactions' , responses are continuously contingent upon, and tailored to, the responses of other individuals (as in social interactions). In ' non-contingent' encounters' , behaviour is guided primarily by one's plans and such behaviour is minimally, if at all, guided by the responses of others present in the situation (as in the case of scrutiny fears).

Mattick and Clarke (1989) have developed a set of companion scales to assess social phobia: the **Social Interaction Anxiety Scale (SIAS),** assesses social interactional anxiety, defined as extreme distress when initiating and maintaining conversations with friends, strangers or potential mates. The companion **Social Phobia Scale (SPS)** assesses anxiety when anticipating being observed or actually being observed by other people and when undertaking certain activities in the presence of others. In the development of the SIAS and SPS, Mattick and Clarke (1989) generated a pool of 164 items from existing inventories and from interviews with social phobic patients. This initial pool was reduced to 75 items with reliably coded relevance to fears of social interaction or scrutiny by others, which were then administered to samples of 243 patients with a DSM III diagnosis of social phobia, 481 college students, 315 volunteers and small samples of patients with agoraphobia or simple phobia. Examination of item-total correlations resulted in the deletion of additional items and selection of final set of 20 scrutiny items (SPS) and 20 social interaction items (SIAS). With this

development strategy, the SIAS and SPS may be best considered as subscales of one larger measure (Brown *et al*, 1997).

Both scales were shown to possess high levels of internal consistency and test-retest reliability. They discriminated between social phobia, agoraphobia and simple phobia samples, and between social phobia and normal samples. The scales correlated wells with established measures of social anxiety. Mattick and Clarke (1989) reported Cronbach's alphas for each scale for patients with social phobia, college students, community voulnteers, agoraphobics and simple phobics that ranged from 0.88- 0.93 for the SIAS and 0.89- 0.94 for the SPS. Test-retest correlations coefficients exceeded 0.90 for both scales after intervals of one and three months.Similar findings were reporteed by Heimberg *et al* (1992), in a study of 66 patients with social phobia, 50 community volunteers, and 53 undergraduate students.

Mattick & Clarke (1989) found that both the SIAS and SPS were positively correlated with scores on the FNES, SADS, the Social Phobia subscale of the Fear Questionnaire. Ries *et al*, (1996) reported that both scales were positively correlated with scores on the SPAI. The scales were found to change with treatment and to remain stable in the face of no-treatment. It has been shown to be sensitive to the effects of cognitive-behavioral treatments. It appears that these scales are valid, useful, and easily scored measures for clinical and research applications, and that they represent an improvement over existing measures of social phobia (Mattick RP and Clarke JC, 1998).

In validation study of SIAS and SPS across the anxiety disorders, Brown et al (1997) used a '" caseness " strategy in which a person was identified as having social phobia if he or she scored one standard deviation above the mean of Heimberg et al's (1992) community sample on the SIAS or SPS. The percentage of patients with a principal diagnosis of social phobia identified as cases was significantly higher than the percentage of other groups than social phobia, for both the SIAS and SPS. *Sensitivity*, or the percentage of actual cases of social phobia correctly identified was 86% for the SIAS and 76% for the SPS. *Specificity*, or the number of patients without social phobia correctly identified was 70% for the SIAS and 72% for the SPS. The overall efficiency of the test (i.e. hit rate) was 75% for the SIAS and 73% for the SPS. The effects of comorbid diagnoses with social phobia and SIAS and SPS scores were compared using independent sample t-tests. No differences were found between patients with social phobia with or without additional diagnoses of mood disorder or panic disorder on either the SIAS and SPS or generalized anxiety disorder on the SPS (Brown *et al*, 1997).

OBJECTIVES

Chapter 3

Objectives

3.1   General Objective

To determine factors associated with social anxiety according to Social Performance Scale (SPS) and Social Interaction Anxiety Scale (SIAS) among medical students in academic year of 2001/2002

3.2   Specific Objectives

i)   To estimate the presence of severe   social anxiety symptoms among medical students in academic year of 2001/2002

ii)   To ascertain the influence of demographic determinants in students with severe social anxiety symptoms, including:-

        a) Sex

        b) Age

        c) Ethnic

        d) Year of study

        e) Parent's educational status

        f) Birth order

        g) Area of origin

iii)   To identify the personality trait or state anxiety in students with severe social anxiety symptoms