Université de Montréal

Is there a link between social phobia and sexual problems?

A comparison between social phobic, sexually dysfunctional and normal individuals

par

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Thèse présentée à la Faculté des études supérieures

en vue de l'obtention du grade de Ph.D.

en psychologie

option recherche-intervention

Janvier, 2006

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Université de Montréal

Faculté des études supérieures

Cette thèse intitulée :

Is there a link between social phobia and sexual problems?

A comparison between social phobic, sexually dysfunctional and normal individuals

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Abstract

Objective: The main goal of this study was to test the link between social phobia and sexual problems in order to better understand the construct of social phobia. Available literature suggests that (1) social phobic individuals are more prone to sexual problems than normal individuals and that (2) social anxiety is associated to sexual problems and dysfunctions. However, this body of research lacks conceptual clarity and empirical testing. **Methods:** One hundred and six individuals fulfilling Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) criteria for social phobia, 164 individuals meeting DSM-III-R criteria for sexual dysfunctions and 111 normal individuals participated in this study. The participants completed a battery of written questionnaires: The Derogatis Sexual Functioning Inventory (DSFI), the Fear of Negative Evaluation scale (FNE), the Social Avoidance and Distress scale (SAD), the Symptoms Check-List-90 Revised (SCL-90-R) and the Social Adjustment Scale-Self Report (SAS-SR). **Results:** After calculating total scores for each scale, data was submitted to a Multivariate analysis of variance (MANOVA) and a discriminant function analysis. First, significant mean differences emerged among groups and gender. The most meaningful of them show that social phobic men are less sexually experienced than their normal counterparts while being as experienced as sexually dysfunctional men. No differences were found between social phobic and normal individuals when assessing sexual satisfaction. In addition, social phobic participants report the highest levels of social anxiety, followed by sexually dysfunctional and finally, by normal individuals. Second, the three groups were discriminable on the basis of sexual functioning and level of social anxiety. Two significant functions emerged and reclassification of the three groups yielded an average accuracy rate of 72.4% indicating a good match between initial group assignment and responses to questionnaires. **Conclusions:** In general, social phobic individuals are not more prone to report sexual problems than normal individuals and severe levels of social anxiety are not associated with sexual problems, but moderate levels may be. Interpersonal and socio-cultural perspectives are proposed to explain these findings.

Keywords: Social phobia, sexual functioning, sexual experience, sexual satisfaction, gender differences.

Résumé

Objectif: L'objectif principal de cette étude était de tester le lien entre la phobie sociale et les problèmes sexuels afin de mieux comprendre le construit de la phobie sociale. La littérature disponible à ce sujet propose que: (1) les individus phobiques sociaux rapportent davantage de problèmes sexuels que la population normale et que (2) l'anxiété sociale est associée aux problèmes et dysfonctions sexuelles. Par contre, cette aire de recherche présente une lacune au niveau de la clarté conceptuelle et de la vérification expérimentale. **Méthode:** Cent six individus remplissant les critères diagnostiques du Manuel Diagnostique et Statistique des Désordres Mentaux-IV (DSM-IV) pour la phobie sociale, 164 individus remplissant les critères du DSM-III-R pour les dysfonctions sexuelles et 111 individus normaux ont participé à cette étude. Les participants ont complété une série de questionnaires écrits: Le Derogatis Sexual Functioning Inventory (DSFI), le Fear of Negative Evaluation scale (FNE), le Social Avoidance and Distress scale (SAD), le Symptoms Check-List-90 Revised (SCL-90-R) et le Social Adjustment Scale-Self Report (SAS-SR). **Résultats**: Suite aux calculs des résultats totaux de chaque échelle, les données ont été analysées avec une Analyse de variance multivariée (MANOVA) et une analyse de fonction discriminante. En premier lieu, des différences significatives ont émergé entre les groupes et les sexes. Les différences les plus révélatrices démontrent que les hommes phobiques sociaux ont moins d'expérience sexuelle que les hommes normaux tout en ayant le même niveau d'expérience que les hommes dysfonctionnels sexuels. Aucune différence n'a été décelée entre les individus phobiques sociaux et normaux quant à la satisfaction sexuelle. De plus, les participants phobiques sociaux ont rapporté les plus hauts niveaux d'anxiété sociale, suivis des individus dysfonctionnels sexuels et finalement, les individus normaux. En deuxième lieu, il est possible de distinguer les trois groupes en se basant sur leur fonctionnement sexuel et leur niveau d'anxiété sociale. Deux fonctions significatives ont émergé et la reclassification des trois groupes a produit un pourcentage moyen d'exactitude de 72,4 indiquant une concordance satisfaisante entre l'attribution initiale des groupes et les réponses aux questionnaires. **Conclusions:** En général, il n'est pas plus probable que les individus phobiques sociaux aient une tendance à avoir davantage de problèmes sexuels que les individus normaux. De plus, les niveaux importants d'anxiété sociale ne sont pas associés aux problèmes sexuels mais les niveaux modérés pourraient

l'être. Des perspectives interpersonnelles et socioculturelles sont proposées afin d'interpréter ces résultats.

Mots-clés : Phobie sociale, fonctionnement sexuel, expérience sexuelle, satisfaction sexuelle, différences inter-sexes.

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This dissertation is dedicated to all Ph.D. students who have gone through the process of undertaking, writing and finishing their doctoral thesis.

Acknowledgements

I would like to express my gratitude to my research supervisor, professor and mentor, Dr. Ariel Stravynski, for his continued support and feedback throughout the many steps of this research project. His guidance allowed me to further develop my professional autonomy, my flexibility in conceptualising ideas in new ways and my critical ability as a researcher.

Many others participated in various ways in the accomplishment of this project. These are: the Centre de Recherche Fernand-Séguin research team members, especially Lise Lachance, whom thanks to their expertise had a direct impact on the quality of this research design, Mariève Cossette who patiently guided and helped me with the statistical analyses, the Université de Montréal and INSEAD library staff who made my endless trips to the library pleasant and efficient and, finally, the Université de Montréal technical services team who made the formatting of this dissertation easier thanks to the creation of a computerised template. I also want to thank the Université de Montréal Psychology Department, particularly Madame Danielle Morand for her attentiveness and help with the logistics of being abroad during my last year of Ph.D.

Also, the carrying out of this project was made possible thanks to scholarships awarded to the author by the Fonds pour la formation de chercheurs et l'aide à la recherche (FCAR) and by the Université de Montréal Psychology Department, in addition to a grant given to Dr. Ariel Stravynski by the Fonds de recherches en santé du Québec (FRSQ).

Finally, I want to extend a heartfelt thank you to: my parents for their perpetual moral support and their practical logistical assistance when I moved abroad, to my generous friend Rosanne who lent me her laptop and always made herself available to help me out, to my dear friend Merissa (i.e., project manager) who, in the last year, produced countless timetables to keep me on schedule, to my husband, who has been with me since the beginning of my studies and who always believed in my success and finally, to my daughter who taught me how important self-discipline is when one is a full-time student and an full-time mother.

Introduction

In the last decades, some authors (Beck and Barlow, 1984; Gilbert, 2001; Ernst, Földényi and Angst, 1993; Dunn, Croft and Hackett, 1999; Kowalski, 1993; Leary and Dobbins, 1983; Bodinger et al. 2002; Tignol et al. 2001; Figueira, Possidente, Marques and Hayes, 2001) have suggested that there is a link between social phobia and sexual problems. However, this body of literature is small and few studies have systematically tested the relationship. Hence, the main goal of this study is to test the association between social phobia and sexual problems in order to contribute to the elucidation of what social phobia is and to better understand the sexual functioning of social phobic individuals. Nonetheless, before investigating this link, the main constructs under investigation will be examined.

1. What is social phobia?

1.1 Definition

Social phobia can be descriptively defined as a fear of acting inadequately in front of others and generating negative reactions such as ridicule, criticism or rejection. In order to protect themselves, social phobic individuals develop various behaviours to cope with social situations that make them uncomfortable. These techniques often involve avoiding the feared situations. Over time, these inadequate coping strategies may have severe negative consequences on the social functioning of these individuals (Kasper, 1998; Stravynski, Bond and Amado, 2004). In the instances where a social phobic person exposes himself to feared social situations, varying degrees of fear may be expressed by features like trembling, excessive sweating, stuttering, difficulty focussing, loss of concentration or loss of memory.

However, many studies support the claim that responding with different degrees of sensitivity to the judgement and opinions of others is a universal reaction (Jones, Cheek and Briggs, 1986) that is not exclusive to social phobic individuals. In other words, social anxiety is reported with different severity by each individual. For example, out of 223 randomly selected students from Oxford University, 40% reported "great difficulty" or

behavioural avoidance in certain social situations and about 10% claimed feeling significantly stressed in about six common social situations such as "getting to know someone" (Bryant and Trower, 1974). Along the same lines, in a random sample of 519 Canadians, Stein, Walker and Forde (1994) found that 85% reported that, out of various social situations, public speaking was associated with the most nervousness. In addition, 46% of the sample indicated being nervous about having to deal with people in positions of authority and 15% reported above average anxiety about attending a social gathering. These are typical complaints reported by social phobic individuals, although it seems that this population generally reports higher levels of subjective anxiety than normal individuals (Edelman and Baker, 2002).

Another example supporting the view that characteristics found in social phobia are shared by other groups is illustrated by a study conducted by Stravynski, Basoglu, Marks, Sengun and Marks (1995b) where factor analyses showed that interpersonal sensitivity (i.e., measure of vulnerability to feeling hurt by, or feeling inferior to other people) is highly present in individuals experiencing generalised social phobia but is not exclusive to this group. In fact, some agoraphobic individuals report high levels of interpersonal sensitivity while some social phobic and most simple phobic individuals report low levels. This suggests that a construct that seems to describe the core of social phobia is actually shared by at least two other hypothetical entities found in the Diagnostic and Statistical Manual of Mental Disorders (DSM). Therefore, the differences in this case are not qualitative but quantitative as social phobia seems to be characterized by a more severe, but not exclusive, form of interpersonal sensitivity than agoraphobia and simple phobia.

To further understand the phenomenon of social phobia, research suggests that, when in social situations, social phobic and socially anxious individuals act differently than non-socially anxious individuals. For example, in a study by Twentyman and McFall (1975), it was found that, when compared to non-shy men, shy men take less time to act out role-play situations involving asking women on dates and report less interactions with women in their real lives. Next, Pilkonis (1977) found that, under experimental conditions, shy individuals take more time to start a conversation, tend to sit further away from the experimenter and speak less than non-shy individuals. Also, under experimental conditions, social phobic individuals report less verbal behaviours than controls when interacting with

an experimenter (Alden and Wallace, 1995). A final example by Walters and Hope (1998) demonstrated that when completing role-playing about conversations and unrehearsed speeches with confederates from both sexes, social phobic individuals tend to avoid eye contact with the other person and express less praise and bragging than controls. Hence, socially anxious and social phobic individuals report different behaviours under simulated social conditions when compared to normal individuals. This evidence suggests that different patterns of behaviours are expressed by these groups, but it is still unclear how this may be translated into everyday situations.

In light of these results, it seems that social phobic individuals show a pattern of self-protective social behaviours that impair them in their daily activities. In fact, the clinical relevance is in how much the individual is affected in his everyday life and how many functional spheres are impaired (e.g., family, friends, school, work). For example, individuals who find themselves at the high end of the spectrum of social anxiety describe themselves as: (1) having difficulties in meeting new people and in initiating new experiences, (2) experiencing loneliness, (3) having difficulties in expressing feelings and opinions, especially if they contradict someone else, (4) experiencing extreme caution in their behaviours which makes it difficult for others to appreciate the socially anxious person, (5) having difficulties in focusing when being the center of attention and (6) experiencing extreme self-consciousness about respecting social rules (Zimbardo, Pilkonis and Norwood, 1974).

In particular, specific social phobia may be described as a difficulty in performing adequately in certain social situations (e.g., eating or writing in the presence of others) although the same individual can feel relatively at ease and accomplished in other social circumstances (Stravynski and Greenberg, 1989). In turn, generalised social phobia fits the same description as specific social phobia, but the individual functions less well in most social situations, placing him even higher on the continuum of impairment. Supporting this, findings show that individuals corresponding to the definition of generalised social phobia are more likely to: (1) be unemployed (2) be single, (3) be depressed, (4) fear and avoid social situations, (5) fear negative evaluation and (6) function less well than their counterparts reporting specific social phobia (Heimberg, Hope, Dodge and Becker, 1990; Mannuzza et al. 1995; Brown, Heimberg and Juster, 1995; Turner, Beidel and Townsley,

1992). Once again, these differences are of degree and not of kind, so it seems logical that, within a dimensional conceptual framework, the generalised type would display less adequate functioning than the specific type (Weinshenker et al. 1996).

Although most of these findings come from surveys or controlled experimental conditions, and it is therefore uncertain just how much they reflect the reality of each individual, they consistently illustrate that experiencing anxiety in social situations is the norm. Hence, social anxiety seems to be a universal reaction experienced at different degrees by all individuals (Heimberg, Hope, Rapee and Bruch, 1987). However, social phobic individuals seem to differentiate themselves by an extreme fear of some or many social situations and a pattern of self-protective social behaviors when faced with feared situations (Stravynski and Greenberg, 1989; Stravynski, et al. 2004). For example, a non social phobic individual will most likely force himself to give an oral presentation despite possible important levels of discomfort experienced whereas a social phobic individual will most likely avoid the situation all together or give the presentation while trying to actively hide his discomfort (e.g., sitting on his hands to hide trembling, referring excessively to notes by fear of forgetting something, wearing a turtle neck to hide blushing).

In summary, social phobia is an extreme fear of certain social situations as opposed to the mild discomfort experienced by most individuals. As a way to identity this hypothetical entity, the creation of a list with the features that are believed to embody the core of social phobia has been included in a manual about psychological problems. The next section will examine how social phobia fits into this framework.

1.2 Social phobia as identified in the DSM

Although the term "social phobia" was already in use early in the twentieth century by authors such as Janet (see historical article by Pelissolo and Lépine, 1995), it only saw its first official inclusion in a classificatory scheme in the third version of the DSM (APA, 1980) under the larger heading of "anxiety disorders". This manual is created by consensus of committees formed of experts in different fields (Stravynski and O'Connor, 1995) and the purpose of criteria identifying features of different psychological problems is to pin-point these from the self-description of an individual.

Specifically, the first classification of social phobia in the DSM was based on the early work and ideas of Marks (1970), who organised phobias in two categories: phobias of external situations (e.g., social phobia) and phobias of internal states. As for anxiety, authors generally do not agree on a single definition for this construct therefore, despite its use in a large body of literature, this term has an unclear and changing definition. This means that different studies may refer to different constructs grouped under the general term of "anxiety". For the purpose of this study, anxiety is defined as reported distress that may be experienced both physiologically and psychologically with varying degrees of intensity (Stravynski and Greenberg, 1989). In the case of social phobia, anxiety is generally associated to the difficulty in performing adequately in certain social situations (Stravynski and Greenberg, 1989).

The DSM-III (APA, 1980) identified social phobia as a marked fear of situations where one could be observed by others and where significant distress was experienced because the individual recognised that this fear was excessive (APA, 1980). The revised version of the DSM-III (APA, 1987) and subsequent DSM versions preserved most of these elements in addition to making a distinction between "generalised social phobia" and "specific social phobia". On the one hand, the generalised type is defined as a fear of most social situations whether they involve public performance or interpersonal situations. For example, a person may avoid dating, speaking in public, maintaining a conversation and interacting with authority figures. On the other hand, the specific type is defined as a fear of a particular performance situation or a fear of a few, but not most, social situations, for example, giving an oral presentation in front of a small group. However, it is questionable just how clear-cut this distinction is in real life.

In addition, DSM-III-R (APA, 1987), DSM-IV (APA, 1994) and DSM-IV-TR (APA, 2000) criteria are more detailed than those in the DSM-III (APA, 1980). Specifically, social phobia is referred to as an irrational fear involving one or many social situations where the individual is possibly exposed to the observation of others. Also, it is suggested that by adding criteria E to the DSM ("The avoidance, anxious anticipation, or distress in the feared social or performance situation(s) interferes significantly with the person's normal routine, occupational (academic) functioning, or social activities or relationships, or there is marked distress about having the phobia"), the prevalence of social

phobia decreases by 21% (Slade and Andrews, 2002). This may indicate that this feature allows the selection of a sub-population that functions less well and is more distressed and that is not just reporting "normal" complaints. Furthermore, the DSM-IV (APA, 1994) includes, for the first time, specific and exclusive criteria for social phobia in children. Previous DSM versions mention that social phobia may be reported by individuals under the age of 18 but criteria for adults and children were the same. Also, recent evidence suggests that social phobia as identified in the DSM shows good to excellent interrater reliability meaning that social phobia as described in the DSM can be identified reliably by different people (e.g., Brown, Di Nardo, Lehman and Campbell, 2001), but this does not necessarily shed light on how valid this construct is.

Furthermore, the assumption that social phobia is a distinct category implies that it is not only different and independent from normality but also from other entities in the DSM. In reality, however, it seems that social phobia is not always manifested alone. In fact, a study by Brown, Campbell, Lehman, Grisham and Mancill (2001) found that 46% of individuals who meet criteria for social phobia concurrently meet criteria for another problem described in the DSM-IV (APA, 1994) while lifetime co-occurrence is of 72%. Specifically, co-occurrence has been found with simple phobia, agoraphobia, alcohol abuse, major depression, panic disorder, psychogenic vomiting, Gilles de la Tourette syndrome and generalised anxiety disorder (e.g., Schneier, Johnson, Hornig, Liebowitz and Weissman, 1992; Magee, Eaton, Wittchen, McGonagle and Kessler, 1996; Noyes et al. 1986; Stravynski, Lamontagne and Lavallée, 1986; Stein, Shea and Uhde, 1989; Stravynski, 1983; Brown, Campbell, et al. 2001; Fava et al. 2001). In conclusion, these findings bring into question the specificity of the category of social phobia as described in the DSM and makes one wonder if social phobia is really an independent entity. At this time, it is too early to take a definitive position on this issue.

In summary, since the inclusion of social phobia as a hypothetical entity in the DSM, its core criteria have remained relatively unchanged over the years (Turk, Heimberg and Hope, 2001) and evidence shows that different people can reliably agree on the existence or absence of criteria identifying social phobia. However, social phobia is rarely identified in isolation which puts into question the preciseness of this construct. To add to this information, the next section will briefly review other aspects of the construct validity

of social phobia. This allows one to be aware of how empirically well-founded a construct is, and to justify its use as a separate entity in the face of research supporting its validity.

1.3 The construct validity of social phobia

The validity of social phobia may be examined under many facets, one of them being the presence of specific markers related to this construct (concurrent validity). In fact, several studies have attempted to find biological correlates related to social phobia; however, most have generally failed to do so (e.g., Papp, Gorman, Liebowitz, Fyer and Cohen, 1988; Uhde, Tancer, Gelernter and Vittone, 1994; Stein, Delaney, Chartier, Croft and Hazen 1995; Tancer, Stein, and Uhde 1995; Martel et al. 1999). In addition, studies that have found physiological differences between social phobic individuals and other populations (e.g., Johnson et al. 1998; Chatterjee, Sunitha, Velayudhan and Khanna, 1997) are unclear about the implications and meaning of the findings or they fail to compare their results to a normal group (e.g., Liebowitz et al. 1985; Tancer et al. 1995). Also, these studies do not account for the multitude of interactions and interrelations of the human neurobiological system and the observed results may be responses to isolated experimental conditions and not an expression of social phobia. In a systematic review, this body of literature does not provide convincing support for specific biological correlates of social phobia as found in Dewar and Stravynski (2000).

Next, studies that have looked at familial correlates related to social phobia have found only modest relationships. In addition, results are unclear as they do not reveal how social phobia develops because there is no information on whether transmission is by genetics or shared environment (e.g., Kagan, Reznick, Clarke, Snidman and Garcia 1984; Kagan, Reznick and Snidman 1987; Reich and Yates, 1988; Andrews, Stewart, Allen and Henderson, 1990). In fact, it is doubtful that a specific behaviour is inherited and more likely that a certain "potential" or "vulnerability" interacts with the environment to eventually produce a specific behaviour (Lykken, McGue, Tellegen and Bouchard, 1992). Briefly, it is too premature to claim that there are clear familial correlates for social phobia.

Another facet that can strengthen the validity of a construct is establishing if something reliably predicts the construct under investigation, in this case social phobia, or

if social phobia reliably predicts a certain outcome (criterion validity). As an example, Goodwin, Fergusson and Horwood (2004) found that "anxious and withdrawn behaviour" in childhood may predict social phobia in adolescence and adulthood. However, it is not clear how these "anxious and withdrawn behaviours" are expressed in everyday life. In addition, authors specify that these behaviours predict later social phobia but also simple phobia, major depression and ultimately, most anxiety disorders. In fact, not all "anxious" and "withdrawn" children report social phobia in later years while other "non-anxious" children do report later social phobia. In summary, not only are "anxious" and "withdrawn" behaviours vaguely defined but these constructs do not seem to reliably predict social phobia. Other studies argue this view but similar drawbacks are present in these designs. Hence, the findings are inconclusive at this time.

It has also been suggested that social phobia predicts smoking, nicotine dependence (e.g., Sonntag, Wittchen, Höfler, Kessler and Stein, 2000), onset and persistence of regular and hazardous alcohol use, and alcohol use disorders (e.g., Zimmermann et al. 2003). However, these studies are quick to conclude that these are causal relationships when in fact it is unclear how two behaviours that are expressed in the same person are even necessarily associated to one another. In addition, authors also found that cigarette smoking and alcohol use are associated to other anxiety disorders. Hence, these relationships seem quite obscure and vague and it is doubtful that one can confidently assert that social phobia specifically and reliably predicts behaviours such as cigarette and alcohol use.

Overall, the predictive validity of social phobia is uncertain. For one to be able to assert that social phobia shows strong predictive validity one would have to be able to observe the relationship between social phobia and alcohol use, for example, most of the time if not always. This is not the case when looking at the existing literature.

Finally, external validity is another component that can strengthen or weaken construct validity. For example, the prevalence of social phobia in North-America has been found to be very different across studies ranging from 2.4% to 13.3% (e.g., Beidel and Turner, 1999; Schneier et al. 1992; Kessler et al. 1994). These swings in prevalence rates within the same culture undermine the external validity of social phobia. Other findings show that social phobia can be identified across cultural groups (Hwu, Yeh and Chang,

1989; Lee et al. 1990; Wacker, Mullejans, Klein and Battegay, 1992) and this may suggest that it is more than an elusive phenomenon. However, western norms and conceptualisations of social phobia may have been imposed across non-western cultures and therefore preconceptions may be easily confirmed. In summary, external validity of social phobia does not seem well established.

In summary, research has failed to show that social phobia is associated to clear biological and familial correlates. Findings also fail to provide satisfactory evidence showing that social phobia reliably predicts an outcome or showing that some factor reliably predicts social phobia. Finally, external validity appears to be weak as prevalence rates of social phobia fluctuate dramatically from study to study. In summary, it is too early to be definitive about the construct validity of social phobia.

1.4 Conclusion

In conclusion, despite the fact that the validity of social phobia remains to be demonstrated, this DSM category is treated as a well established entity where only its etiology is still unknown. In fact, for the purpose of this study, social phobia is identified with DSM-IV criteria (APA, 1994) which are detailed in Appendix A. However, it seems that this hypothetical construct may be better grasped as a distinctive pattern of observable behaviours expressed in social situations where social phobic and socially anxious individuals are more socially impaired than normal individuals. Specifically, the present dissertation will attempt to contribute to the elucidation (i.e., validation) of what social phobia is by investigating if there is a link between this construct and sexual problems. In fact, it has been argued that sexual problems are associated to social phobia as sexuality is closely related to interpersonal relationships (Stravynski et al. 1997). For this purpose, the next section will overview this possible link in addition to presenting the constructs of sexual dysfunctions and sexual problems.

2. What are sexual dysfunctions and problems?

Many authors have suggested that social phobia and sexual problems are linked by underlying high levels of social anxiety (Masters and Johnson, 1970; Kaplan, 1974;

Goodwin, 1986) where in both cases social anxiety is one of inadequacy of performance and potential of subsequent humiliation. In fact, investigating this area will allow a better understanding of the sexual functioning of social phobic individuals which, up to now, has been studied very scarcely. However, before pursuing into this subject matter, the constructs of sexual dysfunctions and sexual problems will be defined and explained in order to then test the link between social phobia and sexual problems. Testing this link will allow answering questions such as: Is social phobia linked to sub-normal sexual functioning? Do social phobic individuals lead satisfying sex lives when compared to normal and sexually dysfunctional individuals?.

It is therefore essential to clarify the difference between sexual dysfunctions and sexual problems. First, the DSM-IV-TR (APA, 2000) suggests that a sexual dysfunction is distinguished by a problem "in the processes that characterize the sexual response cycle or by pain associated with sexual intercourse" (APA, 2000). This conception relies on Masters and Johnson's theory (1966) proposing to view the human sexual response as divided into four phases. The first phase is the desire phase, which is characterized by the impulse to be sexual, coupled with sexual fantasies or daydreams and sexual attraction to others. The excitement phase is the stage of arousal where blood rushes to the genitals, causing engorgement. Erection in men and vaginal lubrication in women are the most visible signs of this stage. The orgasmic phase is the third phase in the sexual response cycle and is characterized by the peak of sexual excitement. For both men and women, this is when heart rate, blood pressure, and breathing are at their highest. The final stage is the resolution phase where the body returns to normal levels of heart rate, blood pressure, breathing and muscle contraction. It is marked by a general sense of well-being and enhanced intimacy (Masters and Johnson, 1966).

According to the DSM-IV-TR (APA, 2000) view, sexual dysfunctions are defined in reference to one of the four phases of the human sexual response outlined by Masters and Johnson (1966), in addition to having a separate category for sexual problems involving pain. For example, hypoactive sexual desire dysfunction, in other words a lack or loss of sexual desire, corresponds to the first phase. In relation to the excitement stage, the problems are male erectile dysfunction and female sexual arousal dysfunction. The orgasmic problems, which are characterized by a delay or absence of orgasm in men or

women, are included in the orgasm phase. Finally, dyspareunia, or genital pain associated with sexual intercourse, is an example of sexual pain dysfunction. Classifying sexual functioning in this categorical fashion requires the individual to report a specific set of subjective complaints (APA, 2000). This is how the "sexually dysfunctional group" is identified in the present study. As with social phobia and social anxiety, anxiety may also be present in sexual dysfunctions and problems, but this distress is related to the functional sphere of sexuality. The construct validity of the different sexual dysfunctions as classified in the DSM will not be reviewed here because there is very little literature covering this area and because it is not crucial to this study which deals mainly with sexual problems and not sexual dysfunctions as described in the DSM.

In the present study, "sexual problems" refer to any sexual difficulty stated by an individual, such as sexual dissatisfaction in general, or fear of intimacy, for example. Specifically, whereas "sexual dysfunctions" can be seen as categorical when one meets criteria for a specific dysfunction, "sexual problems" are dimensional and normal individuals may have occasional problems or ones that do not satisfy all "sexual dysfunction" criteria. Hence, "sexual problems" are different from "sexual dysfunctions". In fact, evidence has shown that sexually dysfunctional individuals exhibit sub-normal sexual functioning in many areas (e.g., sexual satisfaction) and report many "sexual problems" in addition to the "sexual dysfunction" (Schiavi, 1992). Also, sexually dysfunctional individuals appear to report more sexual dissatisfaction and sexual inexperience than normal individuals and than various clinical populations (Woody, D'Souza and Crain, 1994; Derogatis and Meyer, 1979). Briefly, these findings illustrate how "sexual dysfunctions" and "sexual problems" are expressed differently in everyday life.

At this point, the main constructs involved in this study have been presented and clarified. Hence, the next section will review research linking these constructs.

Theoretical background

The purpose of this section is to critically review the existing literature that links social phobia and sexual problems in order to delineate the hypotheses of the present study. To achieve this, the present chapter is divided into three sections: Section 1 examines theoretical models linking social phobia and sexual problems, section 2 looks at empirical data linking these two constructs and section 3 ends with an integration of theoretical models and empirical evidence.

1. Theoretical models linking social phobia and sexual problems

Section 1 covers cognitive (1.1) and other (1.2) theoretical models linking social phobia and sexual problems.

1.1 Cognitive models linking social phobia and sexual problems

Various theoretical reasons have been raised to account for a possible relationship between social phobia and sexual problems. The first models proposed that anxiety, and more specifically social anxiety, causes sexual problems (Wolpe, 1958; Masters and Johnson, 1970; Kaplan, 1974). Later, this premise was heavily criticised by researchers like Beck and Barlow (1984) who argued that mild anxiety actually facilitates sexual arousal but that "social phobia-like thoughts" explain sexual problems. The next section will critically review these models and experiments.

Many theories from the 1950s to the 1970s suggest that anxiety is associated to sexual problems. In fact, some authors have proposed that anxiety causes sexual problems through changes in the nervous system (Wolpe, 1958), through different psychological, physiological and environmental factors (Masters and Johnson, 1970) and through feelings of guilt (Kaplan, 1974). Furthermore, Kaplan (1974) and Masters and Johnson (1970) argue that social anxiety is an important factor in the report of sexual problems. However, the main limitation of these theories is that there is no evidence or systematic testing of how anxiety and/or social anxiety are related to sexual problems. Demonstration of causality is challenging in itself, in addition to the fact that there is no evidence in the literature

supporting a causal relationship between anxiety and sexual problems. Hence, there may be a link between social anxiety and sexual problems but it has not been tested. In fact, Masters and Johnson (1970) as well as Kaplan (1974) recognise that many people are exposed to conditions that, according to them, should lead to sexual problems, but in reality, their sexual functioning is unaffected. This suggests that something may be inaccurate and unaccounted for in the above models.

At the end of the 1970s, many researchers started studying and testing the still unclear link between anxiety and sexual problems. This new line of studies questioned and criticised the hypothesis that anxiety, and more specifically "social anxiety", is directly linked to sexual problems by arguing that this notion was too general (Hoon, Wincze and Hoon, 1977; Wolchik et al. 1980; Lange, 1981; Barlow, Sakheim and Beck, 1983; Norton and Jehu, 1984; Beck and Barlow, 1986; Beck, Barlow, Sakheim and Abrahamson 1987; Hale and Strassberg, 1990; Palace and Gorzalka, 1990; Elliott and O'Donohue, 1997). One of the main statements on the link between sexual problems and anxiety was by Beck and Barlow (1984). These authors challenged the view of most experts in the field of sexuality (Masters and Johnson, 1970; Kaplan, 1974) who postulated that sexual problems are positively related to anxiety. In fact, Beck and Barlow (1984) believe that sexual arousal is either not affected or facilitated by mild anxiety (Hoon et al. 1977; Wolchik et al. 1980) and that "distraction" is the factor that hinders sexual response (Geer and Fuhr, 1976).

Beck and Barlow (1984) propose an alternative perspective to sexual dysfunctions whereby processes similar to those involved in social phobia may be a key factor in sexual arousal problems. More specifically, they speculate that arousal problems are characterized by particular thoughts about sexual inadequacy. In turn, these beliefs disrupt processes that normally create a state of arousal and, therefore, arousal is diminished. In other words, reported thoughts about inadequacy act as a "distraction", and disrupt the normal onset and course of arousal. According to the authors, these thoughts are analogous to the thoughts that allegedly operate in social phobia. They postulate that the mechanism mediating diminished or inhibited arousal is one of "distraction". In an almost identical model, Barlow (1986) suggests that sexual problems are linked to interfering thoughts about sexual performance. Barlow proposes that sexual problems are associated to processes similar to social phobia, where distracting and intrusive thoughts prevent the person from focusing on

external sexual stimuli, and therefore block arousal. In other words, social anxiety comes from worries about sexual performance and operates in the same way as social phobic fears.

These models, however, do not provide a clear definition of what these “beliefs”, “processes” and “mechanisms” are, and what makes them analogous to some feature of social phobia. This explanation of sexual dysfunctions suggests that having specific kinds of thoughts, which are seen as undesirable and similar to social phobic thoughts, results in sexual dysfunctions. Such a view proposes a causal relationship where “because” an individual has particular beliefs “they lead to” sexual dysfunctions. Causality is also implied when authors suggest that entertaining these “beliefs” puts the individual in a position where social phobia is “maintained”. In fact, not only do these assertions need to undergo systematic testing, but they also lack clear construct definition and validity assessment. Moreover, this model assumes that there are exclusive “social phobic cognitive processes”, which is doubtful. Furthermore, it is not clear how social phobia and sexual functioning interact, if they do, and how these constructs are defined. In addition, and assuming that these models are verified, they do not account for women’s sexual problems. Although it is possible that “thoughts analogous to social phobia” play an important role in men’s sexual dysfunctions, it may be different in women. In order to test these models, researchers attempted to study the role of anxiety in sexual functioning within laboratory settings.

For example, Hoon et al. (1977) showed that normal women are more sexually aroused when they view an “anxiety provoking” film right before an erotic film than when they view a neutral film before an erotic film. Similarly, Wolchik et al. (1980) used sensibly the same methodology as Hoon et al. (1977) and showed similar results in a male population. In addition, they found that viewing a depressing film before an erotic film decreased sexual arousal. However, the main limitation of these studies is that they were carried out in an artificial laboratory setting where “anxiety” was experimentally induced and assumed to be comparable to the anxiety that an individual experiences in everyday life. More specifically, authors claim that they induced anxiety by showing participants a three minute videotape of threatened amputation. Authors assert that viewing this tape was associated with more anxiety than viewing a videotape about life in Finland or a videotape

about nearly fatal car accidents. However, it is not clear how this hierarchy was measured and determined or how this relates to anxiety experienced in everyday situations. Also, most participants were sexually normal, which raises questions about how clinically relevant these studies are for individuals who report sexual problems. However, other researchers did study sexually dysfunctional samples.

Beck, Barlow and Sakheim (1983) tested sexually functional and dysfunctional men by exposing them to either one of two films: female partner aroused versus female partner not aroused. Results show that when men are instructed to focus on the aroused partner, functional men become aroused whereas dysfunctional men become less aroused. When investigating these results further, authors suggest that dysfunctional men report feeling increased pressure when attending to the aroused partner and so their arousal decreases. Similarly, Barlow (1986) defined anxiety as "shock threat" and proceeded to test sexually functional and dysfunctional men by measuring their erectile responses while viewing an erotic film under a "no shock threat" versus a "shock threat" condition. Results showed that, as in the Wolchick et al. (1980) study, under the "shock threat" condition, functional men show elevated arousal levels whereas dysfunctional men show a decrease in arousal. In further studies, (Heiman and Rowland, 1983; Abrahamson, Barlow, Beck, Sakheim and Kelly, 1985) researchers found that sexually dysfunctional men respond negatively to erotic stimuli while functional men respond positively.

Authors from this body of research conclude that while anxiety favours arousal in sexually functional men, it discourages it in sexually dysfunctional men. When examining this conclusion, it seems premature to state that "anxiety" has the power to "favour" or "discourage" sexual arousal. Precisely, what is labelled "anxiety" is in fact an experimenter verbally threatening a participant with an electrical shock. It is possible that this situation may be associated to elevated distress in the participant but it is unclear how it is related to anxiety that may be experienced during sexual encounters. However, research does seem to reliably show that normal and sexually dysfunctional individuals respond differently to "shock threat" and "erotic films".

With the hopes of better understanding sexual functioning and anxiety, the construct of "distraction" was added to many experimental models. "Distraction", however, seems to

suffer from the same problems as "anxiety": Many authors use this word, but in reality it has a changing definition from study to study, and different constructs are being measured under the same name. Hence, authors loosely refer to "anxiety" and "distraction" which do not embody the same construct across studies. For example, in one study "distraction" refers to "listening to and repeating random sentences in the correct and reverse order" (Elliott and O'Donohue, 1997) whereas in another study it means "listening to unrelated videotapes and being tested on the material" (Abrahamson, Barlow, Sakheim, Beck and Athanasiou, 1985). This raises questions not only about how comparable studies are but also about clinical pertinence.

Nonetheless, overall results seem point in the same direction. For example, the effect of "distraction" (i.e., performing mental tasks of different levels of difficulty) on men's sexual arousal was tested by Geer and Fuhr (1976), where they subjected normal male students to four intensities of distraction while listening to erotic tapes. Authors found that physiological measures of sexual arousal decreased as the distraction increased. In addition, Elliott and O'Donohue (1997) examined the effects of anxiety (i.e., filming and telling women that they would be judged on personality and appearance) and distraction (i.e., mental tasks like repeating sequences of numbers) on normal women's sexual arousal. Similar to the results in the study carried out by Geer and Fuhr (1976), analyses showed that for physiological and subjective measures, sexual arousal in normal women decreases as levels of distraction increase, regardless of the level of "anxiety" administered. Finally, Abrahamson, Barlow, Sakheim et al. (1985) found similar results when testing sexually functional and dysfunctional men by exposing them to erotic films while listening to unrelated audiotapes on which they were supposedly going to be questioned at a later time. Results showed that sexually functional men lost their erection during this task, while sexually dysfunctional men were unaffected. Overall, these results suggest that "distracting stimuli" are linked to diminished sexual arousal in normal men and women.

The results from the literature examining the effects of "anxiety" and "distraction" on sexual functioning were explained by Cranston-Cuebas and Barlow (1990) and Barlow (1986) as differences in "thoughts" between sexually functional and dysfunctional men. More specifically, they argue that autonomic arousal enhances attentional focus. As a result, while functional men increase their focus on erotic stimuli, therefore becoming more

aroused, dysfunctional men increase their focus on pressure to perform and possibility of failure, therefore distracting them from sexual stimuli and decreasing arousal. This model suggests that sexually dysfunctional individuals have "expectations of inadequate sexual response" and, when these expectations are added to non-erotic distracting thoughts, sexual problems are perpetuated. Furthermore, authors suggest that this state of negative affective reaction to sexual stimuli was probably already a problem before the sexual problem developed. This conceptualisation is similar to what Masters and Johnson (1970) and Kaplan (1974) suggested when they proposed that some people have a vulnerability to developing sexual problems. Finally, in light of Abrahamson, Barlow, Sakheim et al.'s (1985) study, Barlow (1986) suggested that sexually functional individuals are least aroused when they are distracted from sexual cues while sexually dysfunctional individuals are unaffected, and even do slightly better, when attending to non-sexually relevant cues. This is because since dysfunctional individuals are already focused on something other than erotic cues (e.g., "fear of performance", "fear of failure"), a competing distraction may disinhibit them since they are no longer focusing on their anxiety but rather on something irrelevant.

All these propositions assume a clear relationship between a certain type of "cognition", "distraction", "anxiety" and sexual problems. However, this has not really been tested or proven as most of the constructs measured differ from study to study even though they are labelled in the same way. In addition, since all these experiments were carried out in highly artificial settings, authors may be too quick to generalise the results without taking into consideration the fact that it is still unclear how "thoughts" and "distraction" operate in clinical situations and therefore account for the individual's everyday functioning and well-being. In clinical settings, men complain of anxiety and talk about difficulties when having sex with a woman. However, these studies are dealing with film viewing in a laboratory, and anxiety is defined as a shock threat. Although these studies are highly controlled experimentally, it is unclear how they are relevant to clinical settings. Another problem is that, even if many of these studies seem very similar, they actually use different levels of shock-threat and intensity of "distraction", for example. Hence, it seems that this body of research may be portraying differences between sexually

normal and dysfunctional individuals when exposed to varying laboratory settings instead of providing a clinically meaningful and accurate reflection of real life.

In view of all the suggested models and results, one may postulate that the "processes" that supposedly hinder sexual arousal in sexually dysfunctional individuals, such as "thoughts analogous to social phobia", "fear of inadequacy", "pressure to perform", "fear of failure", are equivalent to what has been described in the introduction (i.e., "what is social phobia? ") as "social anxiety", which is a universal reaction experienced to different degrees by individuals when exposed to a social situation (in this case a sexual encounter). An alternative conceptualisation may be that sexually dysfunctional individuals are a group that generally experiences higher levels of social anxiety when it comes to sexual interactions, and this is behaviourally expressed with lower sexual arousal levels when compared to normal individuals. Finally, as a link has been suggested between social phobia and sexual problems, it would be valuable to include social phobic individuals in future experimental research to test if sexually dysfunctional and social phobic individuals report similar levels of social anxiety as suggested by some of these models. In fact, the present study will take this into account.

1.2 Other models linking social phobia to sexual problems

Other authors have suggested that the link between social phobia and sexual problems is better explained by behaviours and environmental pressures (Goodwin, 1986; Gilbert, 2001; Bhugra and De Silva, 1993).

First, and similarly to authors from the previous section, Goodwin (1986) argues that sexual problems and social phobia are linked by social anxiety. However, he claims that the link is the common behaviour between the social phobic and the sexually dysfunctional individual, where there is avoidance of the feared situation, whether it involves a social or a sexual encounter. According to Goodwin (1986), social anxiety comes from being observed while having to perform and the social anxiety itself increases the risk of non-performance. This author specifies that certain types of sexual dysfunctions fit the model of social phobia but that sexual malfunction is not necessarily a form of

phobia. Premature ejaculation, impotence in men and frigidity in women are proposed as social-sexual phobias (Goodwin, 1986).

This theory taps to the core of the present study. However, some of the limitations of this model are that Goodwin (1986) does not define the construct of social anxiety, and is unclear about why and how only some forms of sexual problems are similar to social phobia and others are not. Does this mean that all individuals with premature ejaculation, impotence and frigidity experience important levels of social anxiety? Finally, this model needs to be empirically tested.

Second, Gilbert (2001) recently published an essay describing the role of social anxiety from an evolutionary perspective. Although Gilbert (2001) proposes a comprehensive and detailed model, only features relating to sexual functioning will be reviewed here. He puts forward a theoretical model suggesting that social anxiety is a type of competitive anxiety that is triggered when individuals feel threatened by losing social status or see themselves as socially inferior. He argues that social anxiety, although adaptive and normal in itself, can become maladaptive when it disrupts biosocial goals (e.g., sexual behaviours) associated with reproductive and inclusive fitness success. Maladaptive social anxiety, which, within this study, refers to social phobia, compromises the ability to develop new cohesive and cooperative relationships and thus can have an impact on situations like dating and developing sexual relationships. In fact, Gilbert (2001) argues that humans are highly motivated to develop friendships and social networks because they provide support, help achieve basic needs and goals, and help cope with adversity. In order to develop these networks, Gilbert (2001) explains that one has to be attractive and desirable in the eyes of others. However, the social phobic individual expresses an excessive fear of eliciting negative reactions in others and this often results in undesirable social behaviours from the part of the social phobic individual. These behaviours are often submissive in nature, such as eye-gaze avoidance, inhibition of behaviour and desire for escape. Gilbert (2001) suggests that these behaviours perpetuate social phobia. Consequently, he advocates that exaggerated levels of social anxiety (i.e., social phobia) disrupt successful performance in situations like dating, developing intimate relationships and performing sexual behaviours.

Finally, from a cross-cultural perspective, social anxiety was examined by Bhugra and De Silva (1993). Their main premise is that sexual behaviours are very susceptible to cultural traditions and social influences. Hence, strongly held beliefs and customs about sexual functioning may make some individuals vulnerable to feeling severe social anxiety about their sexuality, and this is linked to sexual problems. An illustration of this is a young, newly married, Middle Eastern man who felt very distressed and "panicky" every time he approached his nude wife. This intense social anxiety was associated with avoidance. In addition, social, cultural and familial pressures encouraging him to consummate the marriage increased the severity of his social anxiety. In fact, failure to consummate the marriage could lead his new bride to return to her family home. Briefly, Bhugra and De Silva (1993) suggest that for some individuals, cultural pressures may account for high levels of social anxiety that are linked to sexual problems.

The main weakness of the three theoretical models presented above (Goodwin, 1986; Gilbert, 2001; Bhugra and De Silva, 1993) is that, although they all agree that social anxiety is linked to sexual problems by preventing individuals from performing desired sexual behaviours, none of them has been systematically tested. Although this was not the goal of the authors, experimental testing can allow verification of these models. In fact, literature suggesting that there is a link between social phobia and sexual problems is scarce, and relies mainly on theoretical models.

1.3 Conclusion on theoretical models linking social phobia and sexual problems

Most of the models and experiments presented in this section argue that social anxiety may be a key factor in the expression of sexual problems and dysfunctions. However, most of these models and experimental designs are based on constructs that are obscurely defined and whose construct validity is doubtful. In addition, experimental data from this area is, for the most part, the product of highly controlled environments where the constructs of interest, such as anxiety, are defined in ways that seem artificial, arbitrary and far from the "anxiety" potentially experienced during a sexual encounter. Finally, the models that focus on how the individual's social behaviour changes depending on the environment (e.g., being observed, threat, and cultural pressures) lack systematic testing.

In summary, this body of literature suggests that social anxiety and sexual dysfunctions are linked as well as social phobia and sexual problems. However, the conceptual and methodological flaws described above pushes one to the conclusion that theoretical models and experimental data have not been convincing in showing that these links do, in fact exist. Hence, these theoretical models provide a useful framework within which a hypothesis to be empirically tested will be developed.

2. Empirical tests of the links between social phobia/social anxiety and sexual problems/dysfunctions

The studies reviewed in this section are empirical in nature and serve to better delineate and understand the existing evidence of a possible link between social phobia and sexual problems.

The first section (2.1) looks at two studies which describe the portrait of sexually dysfunctional individuals. The following section (2.2) addresses a few studies that look at the co-occurrence of social phobia and sexual dysfunctions as defined in the DSM. The subsequent section (2.3) looks at the literature studying the sexual functioning of social phobic and high socially anxious individuals. Finally, the last section (2.4) reviews studies showing gender differences in the sexual functioning of social phobic and highly socially anxious individuals.

2.1 Variables associated with sexual dysfunctions

McCabe and Cobain (1998) and Tignol et al. (2001) recently compared sexually functional and dysfunctional individuals in order to investigate variables associated with sexual dysfunctions. These studies help clarify the theoretical models and experimentations described in the previous section by empirically investigating how sexually dysfunctional individuals may be different from the norm.

First, in McCabe and Cobain's (1998) study, men and women were asked to fill out a self-report questionnaire (Sexual Function Scale developed by the first author) which included questions about various areas of past and present sexual functioning. In particular,

one of the scales assessed social anxiety related to sexual experiences with questions such as: "During sexual activity, does awareness of your partner's eagerness for intercourse make you feel pressured?". In Tignol et al.'s (2001) study, a sample of men completed The Shyness Scale (Cheek and Briggs, 1981 in Tignol et al. 2001) measuring level of social anxiety.

Similar results were yielded by both studies. Sexually dysfunctional men report significantly higher levels of social anxiety when compared to normal men. Similarly, sexually dysfunctional women report higher levels of social anxiety than their normal counterparts. These findings show that out of all the variables examined, high levels of social anxiety emerge in men and women who report sexual dysfunctions, but not in those who do not (McCabe and Cobain, 1998). Furthermore, 41.4% of sexually dysfunctional men report important levels of social anxiety (Shyness Scale) whereas only 6.9% of normal men do. In summary, sexually dysfunctional individuals appear to experience higher levels of social anxiety than normal individuals but it is unclear if this level of social anxiety has a negative impact on everyday functioning as social phobia does.

Briefly, the study by McCabe and Cobain (1998) and Tignol et al. (2001) show an association between social anxiety and sexual dysfunctions. To further these findings, the next section will review available studies investigating the co-occurrence between social phobia and sexual dysfunctions.

2.2 Co-occurrence of social phobia and sexual dysfunctions

This section presents two studies examining the co-occurrence of social phobia and sexual dysfunctions. These studies may provide additional information on the sexual functioning of social phobic individuals. Precisely, this data shows whether there is an important overlap between sexual dysfunctions and social phobia as described in the DSM.

First, Lindal and Stefansson (1993) examined the sexual functioning of 55 to 57 year old men and women. The 862 participants were chosen at random and were taken from the general public covering all geographical areas of Iceland. Although a large sample, it is limited in terms of age and geographical area, so generalisation of results may be inappropriate. Sexual functioning and social phobia were assessed by a structured interview

(Diagnostic Interview Schedule-III: APA, 1980) which establishes lifetime reported complaints of sexual dysfunctions and anxiety problems found in the DSM-III (APA, 1980) by asking participants to remember their lifetime sexual and psychological functioning. This raises the question if whether this study may be measuring the ability to remember past experiences, instead of actual facts. That said, when looking at the co-occurrence of psychological problems, authors found that social phobia is just as common (no statistical difference) in individuals reporting sexual dysfunctions than in individuals reporting no sexual complaints (Lindal and Stefansson, 1993; E. Lindal, personal communication, November 4th, 2004). However, since this is partly a retrospective study, nothing guarantees that sexual dysfunction and social phobia occurred at the same time. It is thus unclear whether authors should even mention the word "comorbidity", which implies co-occurrence of at least two problems defined in the DSM-III (APA, 1980). In brief, because of the multiple limitations of this design, validity of the results is questioned.

When taking these limitations into consideration, the study by Lindal and Stefansson (1993) is of interest because it argues that individuals who report sexual dysfunctions have the same chance of reporting social phobia as normal individuals, and this may indicate that there is no special relationship between social phobia and sexual dysfunctions. However, as sexual dysfunctions are a severe and persistent form of sexual problems and are not equivalent to "sexual problems", it is still possible that there is in fact a relationship between social phobia and sexual problems.

Next, Tignol et al. (2001) attempted to clarify the association between social phobia and sexual dysfunctions, as described by the DSM–IV (APA, 1994), in men. To examine this, 87 men with sexual dysfunctions and 87 normal men were selected and asked to complete a self-reported questionnaire about sexual problems (Cottraux et al. 1985 in Tignol et al. 2001).

Results show that sexually dysfunctional men report significantly higher rates of social phobia than controls. More specifically, the portrait of sexually dysfunctional men is as follows: 27.6% of them met criteria for social phobia (according to the DSM-IV: APA, 1994) whereas 8% of normal men did. From these observations, authors concluded that

social phobia is significantly associated to males reporting sexual dysfunctions, but not to normal men (Tignol et al. 2001).

In summary, studies investigating the co-occurrence of social phobia and sexual dysfunction yield mixed results. While Lindal and Stefansson (1993) argue that social phobia is not reported more often in a sample of sexually dysfunctional individuals versus normal individuals, Tignol et al. (2001) suggest that sexually dysfunctional men report higher rates of social phobia than controls. It is fairly straightforward to compare these studies as they both used the DSM to assess social phobia and sexual dysfunctions. Results in these two studies diverge and this may possibly be attributed to differences in samples such as age, sex and cultural background. For example, whereas Lindal and Stefansson (1993) tested a normal and older population exclusively from Iceland, Tignol et al. (2001) recruited normal and sexually dysfunctional men, from France, representing a wide age range (21 to 66 years-old). The data still missing for the purpose of the present study is the specific investigation of the sexual functioning of social phobic individuals. Hence, the next section will address this literature.

2.3 The sexual functioning of social phobic individuals

As has been mentioned before, the sexual functioning of social phobic individuals has not been extensively researched. For this reason, the next two sections will include studies investigating the sexual functioning of social phobic individuals (as described in the DSM) and studies looking at the sexual functioning of individuals that have been identified as severely socially anxious. Although this is not perfectly equivalent to the construct of social phobia, these studies pinpoint individuals who experience social anxiety as a problem. In fact, many of these individuals likely meet DSM criteria for social phobia. However, as this data is not available, the term "social phobia" will only be used when individuals meet criteria for social phobia as described in the DSM (this applies throughout this study).

2.3.1 Do highly socially anxious individuals report worst sexual functioning than normal individuals?

In the early 1980s, Schlenker and Leary (1982) studied a type of social anxiety that they called "heterosocial anxiety". This is defined as an anxiety associated to the evaluation by a member of the opposite sex in a social setting. In fact, this appears to be equivalent to the construct of "social anxiety" that may be experienced in the presence of someone of the opposite sex. In 1983, Leary and Dobbins carried out a study where 260 college students, ages 17 to 22, completed a questionnaire about different facets of their sexual functioning (e.g., experience, knowledge) and about their level of social anxiety involving the opposite sex. Participants were then classified into two groups, high and low reported social anxiety. Results show that when comparing the two groups, the high socially anxious group reports significantly lower frequency of intercourse in the past month, lower frequency of various sexual experiences in the past year, less sexual partners, less incidence of oral sex, more nervousness at the prospect of having sex, less enjoyment when meeting a member of the opposite sex and less reported knowledge about sex. In other words, individuals reporting high social anxiety in the presence of a member of the opposite sex report lower levels of sexual satisfaction and sexual experience than their normal, low socially anxious, counterparts. Analyses also showed that there was no difference between the two groups in the age at which they first had intercourse and frequency of masturbation.

This study is an illustration of similarities and differences between high socially anxious and low socially anxious individuals. One of the strengths of this design is that measures were self-reported and thus, may be quite representative of the reality of each participant. Another advantage is that the authors included subjective (e.g., how satisfied are you?) and objective questions (e.g., how many times have you had intercourse in the past four weeks?) in their survey. This allows discrimination as to whether high and low socially anxious individuals are different because they behave differently, because they feel differently or both. This is clinically relevant since it can guide psychological intervention. However, the instrument used to assess social anxiety is a modified version of an already existing instrument called the SHI that has not been thoroughly validated. For this reason, it is difficult to judge if "social anxiety" is a reliable construct in this particular study, although the authors do define the construct clearly. Also, the authors equate "social

anxiety related to the opposite sex" to a type of social phobia but, in fact, it is not specified how similar or different these two constructs are and there is no explanation of why they believe "heterosocial anxiety" to be a type of social phobia. In addition, the authors did not clearly define social phobia. Nonetheless, this study is one of the first to describe and examine sexual functioning in a controlled fashion by looking at a group identifying themselves as being highly socially anxious in the presence of members of the opposite sex versus a control group, and it seems that the high socially anxious group exhibits more difficulties in many areas of sexual functioning when compared to the control group.

2.3.2 Do social phobic individuals report worst sexual functioning than normal individuals?

Further empirical evidence by Greenberg and Stravynski (1985) showed that social and sexual functioning are closely related. The goal of this study was to identify the most salient clinical and demographic features of individuals whose main complaints were life-long difficulties and feelings of anxiety when establishing social contacts. For these individuals, coping was most often expressed by social withdrawal in many areas of their everyday lives even though they reported a desire of engaging in social contacts. The sample included 46 participants who had identified themselves as having major and impairing social difficulties. Inclusion criteria were based on self-reported social problems and distress and not specifically on DSM criteria. However, participants met DSM-III (APA, 1980) criteria for avoidant personality which is often conceptualised as a severe form of social phobia; hence, individuals in this study report a problem of clinical magnitude. The Social Situations Questionnaire (Bryant et al. 1976, in Greenberg and Stravynski, 1985) was used to collect data on social difficulties by rating the amount of discomfort experienced and the number of times the individual found himself in a social situation. The clinical group was compared to an outpatient group of 2888 individuals. This is a limitation in the sense that in order to draw stronger conclusions, it would have been useful to include a "normal" control group with no history of psychological problems as the present study will do.

Analyses were performed on many variables; however, the focus of interest of the present study is sexual functioning, so only those results will be presented. Results show

that 39% of the 46 individuals had never had an intimate social relationship with a member of the opposite sex and 56.8% reported never having any sexual experience. Also, of the 19 (43.2%) individuals that had experienced sexual intercourse, 12 (63.2%) met criteria for sexual dysfunctions: seven men reported premature ejaculation or impotence and five women reported anorgasmia (Greenberg and Stravynski, 1985). Authors concluded that even if the individuals' main complaints were of social nature, it was not the only problem when examined further. In fact, 60% of the sample was sexually inexperienced and most of the remainder reported sexual problems. Furthermore, the clinical group expressed having difficulties meeting members of the opposite sex. Supporting this finding is a study by Kowalski (1993) suggesting that high socially anxious individuals report more difficulties in the area of dating when compared to a normal sample.

Stravynski and Greenberg (1985) explain that the characteristics found in the clinical group are considered more excessive than “normal” reactions because when comparing the clinical group to a group of neurotic psychiatric outpatients they scored significantly higher on anxiety measures. Also, although most people feel anxious in certain social situations, they will not systematically avoid them as the clinical group did. Greenberg and Stravynski (1985) observed that many of the individuals who completed a social skills training program asked for psychosexual intervention. This study delineates a picture of sexual habits (e.g., sexual inexperience) and sexual dysfunctions (e.g., premature ejaculation) of individuals reporting severe social problems. For the present study, it sheds light on the sexual functioning of social phobic individuals by showing that people reporting important social difficulties appear to also report more sexual problems than normal individuals.

In a recently published study, Bodinger et al. (2002) explored the sexual functioning and behaviour of social phobic individuals. This study is the first one to examine the sexual functioning of social phobic individuals in terms of sexual behaviour and sexual satisfaction while using a control group of normal participants. These are strengths because they take into account objective and subjective measures, in addition to having a norm with to which compare social phobic individuals. Forty social phobic men and women and 40 participants not meeting DSM-IV (APA, 1994) criteria answered a self-reported questionnaire about sexual functioning designed by Schiavi et al. (1990) (in Bodinger et al.

2002). This instrument assesses aspects such as sexual desire, arousal, orgasm and satisfaction. Moreover, participants were asked about their sexual history and behaviours. A limitation at this level is that it is difficult to determine the validity of the survey assessing sexual functioning since this is the first study of its kind and, therefore, it has not been widely used with social phobic individuals.

Results from self-reported questionnaires indicate that social phobic individuals, regardless of sex, find it more difficult to be sexually aroused and are less satisfied with their own sexual performance than normal controls. However, social phobic individuals and controls do not differ in reporting masturbatory behaviours and sexual enjoyment with their partner (Bodinger et al. 2002). Further results showed that sexual functioning in social phobic individuals is different according to gender. These are presented in section 2.4 where gender differences are addressed. Briefly, this study has a robust experimental design and is valuable in providing evidence about the sexual functioning of social phobic individuals. Results suggest that this population does not function sexually as well as normal individuals.

In summary, all the studies reviewed in this section suggest that, regardless of sex, normal individuals report better sexual functioning than social phobic individuals. When comparing these two groups, social phobic individuals report less sexual experience than normal controls. This is shown by: (1) lower frequency of multiple sexual experiences (Leary and Dobbins, 1983; Greenberg and Stravynski, 1985), (2) less intercourse (Leary and Dobbins, 1983), (3) less sexual partners (Leary and Dobbins, 1983), (3) less oral sex (Leary and Dobbins, 1983), (4) less general knowledge about sex (Leary and Dobbins, 1983), (5) less intimate social relationships (Greenberg and Stravynski, 1985) and (6) overall sexual inexperience (Greenberg and Stravynski, 1985).

Furthermore, contrary to normal individuals, when examining sexual satisfaction, social phobic and highly socially anxious individuals report these characteristics: (1) more nervousness at the idea of having sex (Leary and Dobbins, 1983), (2) less enjoyment in meeting members of the opposite sex, (3) more difficulty in meeting members of the opposite sex (Leary and Dobbins, 1983; Greenberg and Stravynski, 1985), (4) more

difficulties in feeling sexually aroused and (5) less satisfaction of personal sexual function (Bodinger et al. 2002).

However, these groups appear to be similar in terms of (1) age at which they first had intercourse (Leary and Dobbins, 1983) (2) frequency of masturbatory behaviours (Leary and Dobbins, 1983; Bodinger et al. 2002) (3) and enjoyment of sex with partner (Bodinger et al. 2002).

In conclusion, even if these studies have certain drawbacks, the growing body of evidence points to the fact that social phobia and sexual problems are associated. To look at this possible association in further detail, the next section will consider possible gender differences in the sexual functioning of social phobic individuals.

2.4 Gender differences in the sexual functioning of social phobic individuals

In the present section, some of the studies reviewed previously (section 2.3) are revisited but with a focus on gender differences in the sexual functioning of social phobic individuals (or high socially anxious individuals). In addition, studies that have looked at the link between social phobia and sexual problems with gender specific samples are presented and examined. The relevance of looking at the sexual functioning of social phobic men and women separately is that if differences exist, they will not be salient when looking at social phobics as one group. Moreover, if gender differences do exist but are ignored, the portrait of the sexual functioning of social phobic individuals, regardless of gender (as reviewed in section 2.3), may render an image that does not fully reflect reality. In fact, evidence shows that social phobic men and women have different levels of sexual experience and sexual satisfaction than their gender specific counterparts.

2.4.1 Do highly socially anxious men and/or women report worse sexual functioning than normal individuals?

Before addressing the sexuality per se of social phobic individuals, one may examine how they go about meeting another individual with whom they may develop an eventual intimate relationship. To that effect, Kowalski (1993) designed a study assessing

how different levels of social anxiety are associated to dating behaviours. Participants were 60 men and 64 women, all university undergraduate students. Social anxiety was measured with the Interaction Anxiousness Scale (Leary 1983, in Kowalski, 1993) which measures social anxiety with questions such as "I often feel nervous in casual get-togethers" and "I wish I had more confidence in social situations". Perception of dating behaviour was assessed with lists describing three types of dating scenarios between a man and a woman: mundane behaviours (e.g., she has dinner with him), romantic behaviours (e.g., he offers to rub her back) and sexual behaviours (e.g., she undresses him). In each scenario, either the man or the woman performs a behaviour and participants have to rate how strongly the person performing the behaviour wants to have sexual intercourse. Instruments were self-rated on a five point Likert scale. This methodology appears to be quite artificial as the participants had to rate the behaviours of two strangers presented on a piece of paper. Also, although a factor analysis showed that certain groups of items represented different clusters, the dating lists have not been thoroughly validated. Hence, it is questionable if the results represent adequate external validity.

After separating low from high socially anxious participants and men from women, multivariate analyses showed that high socially anxious men perceive dating behaviours, regardless of the type, as more sexual than high socially anxious women and than normal men. However, no gender differences emerged between the low social anxiety groups. Conversely, high socially anxious women perceive less sexual meaning in dating scenarios than low socially anxious women. Kowalski (1993) suggests that these results are a reflection of the fact that high socially anxious individuals have trouble interpreting others dating behaviours accurately because, in general, they are less sexually active and experienced when compared to their non-socially anxious counterparts. Nonetheless, although statistically significant differences were found between groups, means do not seem that different. For example, low socially anxious women statistically differed from high socially anxious women on a measure of level of sexual meaning attached to experimental dating scenarios. However, the respective means are 2.7 and 2.4. Qualitatively, this measure is based on a 5-point scale where 1 indicates "no interest in sexual intercourse" and 5 indicates "intense interest in sexual intercourse". Hence, the question one needs to ask is: Are 2.7 and 2.4 meaningfully different?

Even with their limitations, these results suggest that high socially anxious individuals may perceive dating behaviour differently than non-socially anxious individuals. Therefore, if preliminary behaviours, such as dating, are interpreted in a particular fashion by high socially anxious individuals, it may be worth investigating their sexual functioning at many other levels (e.g., intimate sexual behaviours, sexual satisfaction, etc). A drawback of this study is that it is not clear how impairing the level of social anxiety is for the "highly socially anxious" group. For this reason, it is difficult to affirm where the "high socially anxious" individuals fall in the spectrum social anxiety. Are they clinically impaired and show a similar behaviour pattern as social phobic individuals or are they mildly impaired and not clinically affected by their level of social anxiety (i.e., they can probably be considered normal)?. Nonetheless, this study provides information about possible differences in perception of dating behaviour among groups that are at different points of the "social anxiety" spectrum. The following studies attempted to clarify other facets of the sexual functioning of social phobic individuals.

Leary and Dobbins (1983), who focused their study on social anxiety involving the opposite sex, found than within a sample of 260 college students (detailed methodology was presented in section 2.3.1), women tend to report slightly higher levels of social anxiety than male college students. Also, a gender by group interaction was found when examining frequency of looking at pornographic material: High socially anxious men report looking at this type of material more often than normal men whereas high socially anxious women report looking less at pornographic material than their normal counterparts. When looking at sexual problems, it was found that high socially anxious men report more temporary impotence than normal men, but these two groups do not differ significantly when reporting frequency of retarded and premature ejaculation. High socially anxious women report less experiences of having an orgasm than normal women, but these two groups do not differ on the incidence of painful intercourse and vaginismus. Finally, results show that, when compared to women, men (no matter if there are in the high or normal anxiety group) report having sex more often, having sex with more partners, masturbating more frequently and feeling less nervous at the prospect of having sex (Leary and Dobbins, 1983).

Next, Dunn et al. (1999) attempted to clarify the association between sexual and social functioning in the general population. They did this by sending an anonymous postal questionnaire, developed and piloted by the authors, to 4000 individuals chosen at random throughout England. Seven hundred and eighty-nine men and 979 women aged from 18 to 75 years of age completed the questionnaire. The strength of this study relies in its large and diversified sample. However, it would have been useful to have information about non-respondents since individuals that choose to respond to this type of questionnaire may not be representative of the general population and therefore external validity could be compromised. For example, individuals having sexual problems may be more inclined to respond and therefore inflate final percentages. Nonetheless, social functioning was assessed with the Social Problems Questionnaire (Corney, 1988 in Dunn et al. 1999) which measures difficulties regarding housing, work, finances, social life, marital life, children and relationships with others. Physical states such as hypertension, prostate problems and pre-menstrual tension were also assessed with a yes/no checklist. Finally, The Hospital Anxiety and Depression (HAD) scale (Zigmond, 1983 in Dunn et al. 1999) measured psychological status.

General results showed that 34% of men and 41% of women reported sexual problems. The most common complaint was low arousal. Although social phobia itself was not examined, severe anxiety levels were found in 13% of men and 24% of women according to the HAD scale. More specifically, arousal problems were associated with physical conditions, intake of certain drugs and with depression whereas premature ejaculation was associated with anxiety. Furthermore, in women, anxiety and depression were associated with all sexual problems: arousal problems, orgasmic dysfunction and inhibited enjoyment. The strongest association was between sexual problems and self-reported marital problems. Authors concluded that within the general population, men's sexual problems were usually associated with age and physical conditions whereas in women they were normally associated with psychological and social difficulties such as anxiety, depression and marital problems (Dunn et al. 1999).

2.4.2 Do social phobic men and/or women report worse sexual functioning than normal individuals?

In the past few years, three studies have yielded empirical data suggesting that social phobia and sexual problems are linked. Specifically, these findings suggest that individuals meeting criteria for social phobia are more prone to sexual problems than normal individuals in addition to showing that social phobic men and women report differences in their sexual functioning.

The first of these studies was conducted by Ernst et al. (1993). Participants in this longitudinal epidemiological study were interviewed about their sexual functioning and habits four times (1979, 1981, 1986 and 1988) between the ages of 20 and 30. All participants were Swiss and 292 men and 299 women were recruited. They were assessed with the SCL-90 (Derogatis, Lipman and Covi, 1973), a questionnaire measuring different dimensions of subjective complaints. Two thirds of the final sample consisted of individuals with high levels of reported subjective complaints (defined as 85th percentile or more) and one third consisted of low levels (defined as below the 85th percentile). In addition, there were questions about general sexual functioning (e.g., "During the last 12 months; were you dissatisfied with your sexual life? Did you experience any sexual difficulties?") and questions about more specific areas, such as orgasmic difficulties and painful intercourse. Social phobia was assessed in the 1986 and 1988 interviews with DSM-III (APA, 1980) criteria.

Results show that social phobia is significantly more common in women reporting sexual problems. Co-occurrence of sexual problems and social phobia appears to be 15.4% in women at high risk (based on SCL-90), 4.6% in women at low risk, 4.3% in men at high risk and 3.0% in men at low risk ($p= 0.006$). In light of these results, authors concluded that sexual problems in women are more closely associated with social phobia (Ernst et al. 1993) when compared to men and to normal individuals. This research design is straightforward and provides empirical evidence linking social phobia and sexual problems especially in women.

Next, Figueira et al. (2001) examined the sexual functioning of 30 individuals (19 men and 11 women) meeting criteria for social phobia as described in the DSM-IV (APA,

1994) who participated in the Anxiety and Depression Program of the Federal University of Rio de Janeiro, Brazil. This is quite limited in sample size which means that any small variation within the sample can have a large effect on the final results since each participant has considerable weight. This implies that results may lack external validity. Nonetheless, among other factors, Figueira et al. (2001) looked at sexual functioning by assessing the sexual history of each participant. This was obtained through a semi-structured interview that included questions about virginity, age of first sexual relationship, frequency of sexual intercourse, first sexual intercourse partner, masturbatory behaviours and presence of current sexual partner. One needs to keep in mind that there are three main limitations concerning this methodological design: (1) The semi-structured interview was developed by the authors and has not been validated. Hence, it may be unclear what the final results reflect clinically and statistically. (2) The information about sexual functioning was gathered 2.4 years post-intervention which means that participants were reporting past experiences which have a higher chance of being inaccurate than if they were reporting current complaints (3) the sexual history measure involved only objective questions (e.g., frequency, age, with whom). Although this type of information is necessary, it does not provide any subjective measure of sexual experience. For example, no information is given about how sexually satisfied and fulfilled the participants are, which is a valuable clinical aspect in understanding the impact of a psychological problem.

Results show that eleven out of a total of 19 (57.9%) social phobic men reported that their first sexual partner was a prostitute while five (26.3%) said it was their girlfriend. Nine (47.4%) reported having sexual intercourse less than twice a month, 15 (78.9%) reported masturbation behaviour, six (31.6%) were single and one (5.3%) was a virgin. No social phobic woman reported having their first sexual encounter with a prostitute, four out of eleven (36.4%) said their first sexual experience was with their boyfriend, eight (72.7%) reported having sex less than twice a month, nine (81.8%) reported masturbation, five (45.5%) were single and three (27.3%) were virgins (Figueira et al. 2001). Unfortunately, this study includes no group with normal participants which would allow comparing social phobic individuals to a norm. If this were the case, one would be able to conclude whether social phobic individuals deviate from that standard or not. For example, Laumann, Paik and Rosen (1999) found that the lifetime prevalence for premature ejaculation in the normal

population is 21% which is less than half than what was found with social phobic individuals (47.4%) in the Figueira et al. (2001) study. In addition, authors did not statistically compare social phobic men to social phobic women. For example, whereas 5.3% of social phobic men report being virgins, 27.3% of social phobic women do. This difference seems enormous and worth mentioning but in reality, only one man reported being a virgin and three women did. So, this difference seems hardly clinically meaningful. Hence, these results should be interpreted carefully and the present study will attempt to take into account the limitations highlighted in this design.

Bodinger et al. (2002) (detailed methodology already presented in section 2.3) took into account one of the flaws mentioned in Figueira et al. (2001) by including a normal group in their design. Specifically, when examining gender differences, this research team found that the sexual functioning of social phobic men and women is different from normal participants. It appears that social phobic women think significantly less of sex, desire sex less frequently, feel less lubricated when having sex and have sex less frequently than normal women. When analysing gender specific variables, social phobic women report more pain during intercourse and more loss of sexual desire during intercourse than normal women. When looking at sexual history, social phobic women report having significantly fewer sexual partners in the past when compared to normal women. However, the groups did not differ in the following variables: age at first sexual relation, number of paid partners in the past, retarded orgasm and frequency of orgasm during sex (Bodinger et al. 2002).

The portrait is not the same for social phobic and normal men. In fact, when compared to the male control group, social phobic men report fewer orgasms during sex and more retarded ejaculation. Men's sexual history showed that social phobic individuals had their initial sexual relationship at an older age and had a higher frequency of paid sex than normal men. No differences were found for: number of sexual partners in the past, loss of erection or desire during sex, premature ejaculation, frequency of sexual thoughts, frequency of desire for sex, and frequency of sex (Bodinger et al. 2002).

The authors explain these results by arguing that the avoidance of certain sexual situations (e.g., men opt more for paid sex, women have fewer partners) is a direct

manifestation of social phobia and serves as a coping technique by diminishing anxiety in the short-term (Bodinger et al. 2002).

In addition, the authors considered many group differences to be significant although their statistical significance was not always the same. For example, the p value for "frequency of sexual thoughts" between social phobic women and normal women was <.001, but the p value for "enjoyment of sex with partner" between social phobic and normal men was 0.06. This last result was considered statistically significant by the authors. However, it was not considered an important difference within this dissertation. Hence, while these results may be representative of reality, they should be interpreted carefully.

In summary, several studies provide evidence that there are differences between the sexual functioning of social phobic men versus women, although some results are mixed. Generally, it has been found that social phobic men and women do not fare as well sexually as their normal specific gender counterparts (Ernst et al. 1993; Figueira et al. 2001; Bodinger et al. 2002).

2.4.3 High socially anxious/social phobic men versus normal men

When looking at data yielded by studies investigating the sexual functioning of high socially anxious and social phobic men, one concludes that such men generally report more sexual problems than the norm. Specifically:

When compared to normal men, social phobic men report <u>more sexual problems</u> such as: (1) more temporary impotence (Leary and Dobbins, 1983) and (2) fewer orgasms during sex (Bodinger et al. 2002). Additionally, results by Bodinger et al. (2002) and Leary and Dobbins (1983) are contradictory concerning retarded ejaculation. It has already been mentioned that one of these studies selected high socially anxious individuals whereas the other selected social phobic individuals, so the differences in results may be explained by differences in sample selection. For the present study, it is more relevant to consider Bodinger et al.'s (2002) methodology in addition to the fact that the experimental design is more rigorous than the one in Leary and Dobbins (1983). Hence, it appears that social

phobic men report a higher frequency of retarded ejaculation than normal men ($p < 0.02$) (Bodinger et al. 2002).

Furthermore, social phobic men report different levels of sexual behaviours from normal men such as: (1) perceiving more sexual content in dating behaviours (Kowalski, 1993), (2) looking at more pornographic material (Leary and Dobbins, 1983), (3) having their first sexual relationship at an older age, and (4) a higher frequency of paid sex (Bodinger et al. 2002).

In terms of sexual experience, social phobic men report being as experienced as normal men in (1) the number of sexual partners in the past and in (2) the frequency of intercourse (Bodinger et al. 2002). However, other studies found that social phobic individuals, regardless of gender, report less sexual experience than normal individuals (Leary and Dobbins, 1983; Greenberg and Stravynski, 1985). Hence, the evidence is inconclusive as to whether social phobic men and normal men differ in sexual experience.

Finally, social phobic men do not seem to differ from normal men in their (1) frequency of loss of erection or (2) desire during intercourse, (3) frequency of sexual thoughts, (4) frequency of desire for sex (Bodinger et al. 2002), and (5) frequency of premature ejaculation (Bodinger et al. 2002; Leary and Dobbins, 1983).

2.4.4 High socially anxious/social phobic women versus normal women

As with men, data suggests that socially anxious and social phobic women report sub-normal sexual functioning in many areas but normal functioning in others, specifically:

First, social phobic women appear to report more sexual problems from normal women such as: (1) fewer orgasms (Leary and Dobbins, 1983), (2) feeling less lubricated during sex, (3) feeling less sexual desire during sex, (4) desiring sex less often (Bodinger et al. 2002), and (5) reporting more sexual problems overall (Ernst et al. 1993). Once again, the studies by Leary and Dobbins (1983) and by Bodinger et al. (2002) show conflicting results, but this time it concerns women's report of experience of pain during intercourse. For the reasons described above, the results from Bodinger et al. (2002) are considered

more meaningful. Consequently, social phobic women seem to report more pain during sex than their normal counterparts ($p < 0.02$) (Bodinger et al. 2002).

Second, social phobic women do not report the same level of sexual behaviours as normal women. For example, contrary to social phobic men, they report (1) interpreting dating behaviour as less sexual (Kowalski, 1993), (2) looking at less pornographic material (Leary and Dobbins, 1983), and (3) thinking less of sex (Bodinger et al. 2002).

Third, social phobic women report less sexual experience than normal women and this is illustrated by (1) having sex less frequently and (2) having less sexual partners overall (Bodinger et al. 2002).

Finally, social phobic and normal women do not seem to differ when it comes to (1) frequency of vaginismus, (Leary and Dobbins, 1983), (2) retarded orgasm, (3) age of first sexual experience, (4) frequency of orgasm during sex, and (5) number of paid partners (Bodinger et al. 2002).

2.5 Conclusion on empirical data linking social phobia and sexual problems

While major differences (e.g., sample selection, construct definition) across studies make it a challenge to compare final results, when looking carefully at the data, it appears that social phobic individuals report poorer sexual functioning than normal individuals. In fact, this was demonstrated when studying social phobic individuals as one group and by gender. However, as mentioned previously, there are several limitations in the available literature and the present study will attempt to take many of these into account in order to achieve a better understanding of the construct of social phobia and the sexual functioning of social phobic individuals.

3. Integration of scientific literature and presentation of objectives

First and foremost, in order to delineate the specific objectives of the present study, theoretical and empirical literature on the subject matter will be briefly synthesized. Many

suggest that there is a link between anxiety and sexual problems and more specifically, early writings about this relationship are mostly based on clinical experience (Wolpe, 1958; Masters and Johnson, 1970; Kaplan 1974). In reaction to this situation, a multitude of highly controlled experiments were carried out and many new theoretical models were suggested (Hoon et al. 1977; Beck and Barlow, 1984; Wolchik et al. 1980; Barlow, 1986). The main findings of these studies suggest that sexually functional individuals do not respond to some forms of "anxiety" in the same way as sexually dysfunctional individuals do. More specifically, some forms of mild "anxiety" seem to promote sexual arousal in functional individuals whereas in dysfunctional individuals they do not. This phenomenon was explained by differences in reported thoughts between these two groups. Furthermore, it was suggested that sexually dysfunctional individuals react this way to anxiety because their thoughts are similar to those of social phobic individuals (Beck and Barlow, 1984). Although these studies have their limitations, they seriously challenge the idea that anxiety accentuates sexual problems since it seems that within normal samples, mild anxiety facilitates sexual arousal.

Other theoretical models (Goodwin, 1986; Gilbert, 2001; Bhugra and De Silva, 1993) also suggest that social phobia and sexual problems are linked. However, these models do not suggest that "thoughts processes" explain this link but instead attribute this relationship to the environment surrounding the individual. For example, Goodwin (1986) suggests that the mere fact of being observed increases social anxiety which makes one more prone to failing at performing sexual behaviours. In a more evolutionary perspective, Gilbert (2001) argues that when an individual feels socially threatened by his environment, he is more prone to sexual problems. Finally, Bhugra and De Silva (1993) sustain that social pressure to conform to cultural norms can be associated to sexual problems.

Overall, while several of these models differ in their conceptualisation of the link between social phobia and sexual problems, many suggest that "social anxiety" is a construct that is present in sexually dysfunctional and social phobic individuals, however, most papers fail to define this construct adequately. In fact, evidence suggests that "social anxiety" is a universal reaction. Therefore, authors suggesting a link between social anxiety and sexual dysfunctions could be referring to the probability that sexually dysfunctional

individuals may experience higher levels of social anxiety when compared to other groups. This still needs to be tested.

A few years after these theoretical models were suggested and artificial experimental designs were carried out, a limited body of empirical data became available. More specifically, when studying the co-occurrence of social phobia and sexual dysfunctions as described in the DSM, conflicting findings suggest that co-occurrence is high (Tignol et al. 2001) and others suggest that social phobia is as common in sexually dysfunctional individuals as in the normal population (Lindal and Stefansson, 1993). In addition, when looking at the research examining the sexual functioning of social phobic individuals, they appear to report less sexual experience and satisfaction than normal individuals. As the empirical research got more refined, gender differences in the link between social phobia and sexual problems emerged. But, authors do not seem to fully agree as to what these differences are specifically. Nevertheless, generally speaking, gender differences seem to fit the same pattern as when looking at social phobic individuals as a whole. Namely, social phobic individuals report more sexual problems than their normal counterparts in terms of sexual experience and satisfaction (Ernst et al. 1993; Greenberg and Stravynski, 1985; Schlenker and Leary, 1982).

Overall, there seems to be a gap between theoretical and empirical literature because, although they both suggest links between social phobia and sexual problems, they look at this link from different perspectives. Specifically, it is challenging to compare the theoretical models to most empirical data because the targeted populations are different. On the one hand, most theoretical models intend to explain sexual dysfunctions although experiments mainly involve sexually normal men. Therefore, they do not account for social phobic or even for sexually functional and dysfunctional women. On the other hand, most empirical data examines sexual features of social phobic and high socially anxious individuals. In summary, these discrepancies make it difficult to draw general conclusions.

More specifically, current literature on the link between social phobia and sexual problems is generally inadequate. Thus, the purpose of the present study will be to provide more satisfactory answers:

First, most studies do not offer clear definitions and validity data about the constructs under investigation and the instruments employed. Consequently, it is not only difficult to assess what is being studied and how it is being measured but it is also challenging to determine if equivalent constructs are being examined across studies. Conversely, the present study emphasises clear construct definition and presents available literature on construct validity. In addition, it reviews psychometric properties of all the questionnaires used in the methodology in order to ensure the use of validated instruments to measure sexual functioning, social functioning and level of psychological impairment.

Second, empirical studies report and emphasise statistically significant differences between samples, but it is unclear if these differences are meaningful. In the present study, statistical differences will be presented and considered, but clinical meaningfulness will also be taken into account by examining the data's qualitative features.

Third, available experimental designs often lack a control group constituted of normal individuals. In addition, the sexual functioning of social phobic individuals has never been compared to a group of sexually dysfunctional individuals (as described in the DSM). Isolated data about the sexual functioning of social phobic individuals is hardly informative if there are no other groups to compare them to. In contrast, the present study attempts to improve this situation by including three large and representative samples of social phobic, sexually dysfunctional (as described in the DSM) and normal individuals. These groups underwent a rigorous selection process and were assessed by various professionals in the field of psychological functioning.

Fourth, sexual functioning often seems to be inadequately assessed as it is often unclear which specific dimensions are being examined. In addition, in some studies, data is collected post-intervention or questions relate to past experiences (e.g., "how was your sexual performance 20 years ago?"). These factors increase the risk that events are not recounted accurately because they happened before psychological intervention (and now the individual probably acts and feels differently) and/or because they happened a long time ago. The present study will attempt to overcome such limitations by administering self-reported questionnaires about daily experiences that yield subjective parameters (i.e., sexual satisfaction) and objective parameters (i.e., sexual experience). Also, data was

collected before psychological intervention and relates to the last few weeks of the individual's life. All these precautions were taken in order to maximise accuracy of the collected information.

Fifth, several authors suggest that social anxiety (i.e., perhaps high levels of social anxiety) plays a role in the link between social phobia and sexual problems; however, it is impossible, at this point, to assert anything more specific than this since studies have been unclear on how to measure this construct and how it inserts itself in the association between social phobia and sexual problems. Hence, the present study will assess levels of social anxiety in every group under investigation (i.e., social phobic, sexually dysfunctional and normal individuals) and this construct will be assessed with validated psychometric instruments (Fear of Negative Evaluation scale: Watson and Friend, 1969; Social Avoidance and Distress scale: Watson and Friend, 1969; Interpersonal Sensitivity subscale, Anxiety subscale and Phobic anxiety subscale: Derogatis et al. 1973).

In conclusion, the present study aims to contribute to the scarce literature on the link between social phobia and sexual problems by empirically testing propositions that have been, up to now, tested with certain limitations or only discussed at a conceptual level. More specifically, in order to examine and clarify if there is a link between social phobia and sexual problems, this study compares three groups of participants (social phobic, sexually dysfunctional and normal individuals) in terms of: sexual functioning (DSFI: Derogatis and Melisaratos, 1979) and social functioning (SAS: Weissman and Bothwell 1976, FNE, SAD: Watson and Friend, 1969, only relevant subscales from the SCL-90: Derogatis et al. 1973). Comparisons along these dimensions will allow clarification and description of similarities and differences existing between the three groups and thus, enable a better understanding of the construct of social phobia.

In summary, the main objective of this study is to assess whether there is a link between social phobia and sexual problems by assessing if there are differences in sexual functioning and in levels of social anxiety across groups.

Objectives:

1. Is there a link between social phobia and sexual problems?

This is achieved by:

- Comparing the differences and similarities in terms of (1) sexual satisfaction and (2) sexual experience reported by social phobic, sexually dysfunctional and normal individuals.

2. Are there differences between the sexes?

This is achieved by:

- Comparing the differences and similarities in terms of (1) sexual satisfaction and (2) sexual experience reported by social phobic, sexually dysfunctional and normal men and women.

3. Is there a difference between groups in terms of severity of social anxiety?

This is achieved by:

- Comparing levels of social anxiety reported by social phobic, sexually dysfunctional and normal individuals.

4. Hypotheses

Following the literature review, these are the predictions for each group and condition:

Hypothesis 1

Social phobic individuals, regardless of sex, will report the same level of sexual experience as sexually dysfunctional individuals but less sexual experience than normal individuals.

Hypothesis 2

Social phobic individuals, regardless of sex, will report the same level of sexual satisfaction as sexually dysfunctional individuals but less sexual satisfaction than normal individuals.

Hypothesis 3

Social phobic individuals, regardless of sex, will report the same level of social anxiety as sexually dysfunctional individuals but more social anxiety than normal individuals.

Method

This chapter describes who the participants are, how they were selected, what the specific procedure they had to go through entailed, and which psychometric instruments were administered and why.

1. Participants

The sources of data for the present study are several research projects carried out at the Fernand-Séguin Research Center in Montreal (part of Louis-Hippolyte Lafontaine Hospital). More specifically, social phobic men and women were taken from an outcome study of psychological intervention for social phobia (Stravynski et al. 2000), sexually dysfunctional men were taken from an outcome study of psychological intervention for sexual dysfunctions (Stravynski et al. 1997) and a doctoral thesis examining associated factors of sexual dysfunctions (Sayegh, 2001), sexually dysfunctional women and normal women were part of a research comparing the sexual functioning of these two groups (Bounader, 1998) and a study of associated factors of sexual dysfunctions (Sayegh, 2001), and normal men came from the same study as the sexually dysfunctional men (Sayegh, 2001). The 381 participants in the present study are divided into three groups: 106 social phobic individuals, 164 sexually dysfunctional individuals and 111 normal individuals. The social phobic group includes 45 men and 61 women, between the ages of 19 and 63, the sexually dysfunctional group is composed of 96 men and 68 women between the ages of 19 and 56 and the normal group includes 40 men and 71 women ranging from 20 to 55 years-old.

Analyses were carried out on the following socio-demographic variables: (1) age, (2) educational level, (3) occupational domains and (4) marital status. This was done in order better delineate if differences between groups may be explained by discrepancies in demographic status or if they are most likely attributable to distinct sexual and social functioning.

(1) No significant differences were found between groups or sex for the age variable. However, (2) results show an interaction effect for level of education, $F(2, 375) = 6.94$, $p < 0.05$. In fact, social phobic men report being significantly more educated ($M =$

14.11, SD = 2.06) than sexually dysfunctional men (M = 12.64, SD = 2.51), F (1,375) = 13.61, $p < 0.05$. In addition, sexually dysfunctional men report being significantly less educated (M = 12.64, SD = 2.51) than their female counterparts (M = 14.71, SD = 1.61), F (1,375) = 41.21, $p < 0.05$. Finally, normal men (M = 13.05, SD = 2.62) report lower education levels than normal women (M = 14.28, SD = 1.77), F (1,375) = 7.02, $p < 0.05$.

(3) Chi square tests indicate that occupational domains are distributed differently across groups and sex: $\chi 2$ (12, N = 381) = 30.32, $p < 0.05$, $\chi 2$ (6, N =381) = 65.26, $p < 0.05$. These are detailed in Table I. More specifically, normal participants report doing substantially more clerical work than social phobic participants whereas sexually dysfunctional participants report more manual work than the two other groups. In addition, the proportion of social phobic individuals reporting no work is more than double that of the other groups. Table II indicates that a higher proportion of women than men report work of a clerical nature, report being students or report no work. However, when compared to women, a very high proportion of men report work of manual nature.

(4) In terms of marital status, a group-sex interaction was found for reported number of children, F (2,375) = 3.09, $p < 0.05$. Specifically, social phobic men report having less children (M = 0.62, SD = 0.16) than normal men (M = 1.3, SD = 0.17), F (1,375) = 8.42, $p < 0.05$. In addition, marital status is associated to group, $\chi 2$ (4, N = 381) = 16.01., $p < 0.05$, but is independent from gender. In fact, a substantially higher proportion of social phobic individuals report current living with a significant other when compared to sexually dysfunctional individuals. In addition, a low proportion of normal individuals report never living with a significant other when compared to the two other groups (Table I).

Table I. Occupational and Marital Characteristics of Participants by Group

Socio-demographic variables	Social Phobic n = 106	Sexually Dysfunctional n = 164	Normal n = 111
Occupation			
Liberal profession	17%	12%	16%
Owning a business	6%	3%	1%
Clerical work	33%	48%	54%
Manual work	11%	19%	10%
Not working	20%	7%	6%
Student	9%	7%	10%
Other	4%	5%	3%
Marital status			
Presently lives with partner	42%	22%	35%
Has been in a relationship in the past	37%	53%	50%
Never married and no co-habitation in the past	22%	25%	14%

Table II. Occupational and Marital Characteristics of Participants by Sex

Socio-demographic variables	Men n = 181	Women n = 200
Occupation		
Liberal profession	13%	16%
Owning a business	4%	3%
Clerical work	37%	53%
Manual work	29%	1%
Not working	6%	14%
Student	7%	10%
Other	4%	4%
Marital status		
Presently lives with partner	28%	34%
Has been in a relationship in the past	47%	49%
Never married and no co-habitation in the past	25%	18%

Clinical attributes show that the average age of onset of social phobia in years (M = 13.33, SD = 8.93) is significantly earlier than sexual dysfunctions (M = 23.30 , SD = 8.22), $F(2, 233) = 66.88$ $p < 0.05$, which concords with the fact that the duration of social phobia

in years is also significantly longer ($M = 26.02$, $SD = 10.54$) than sexual dysfunctions ($M = 14.88$, $SD = 8.61$), F (2, 233) = 70.40, $p < 0.05$. These clinical data were not available for 33 participants in the social phobia group (17 men and 16 women) and due to confidentiality issues they could not be contacted. The normal group was not included in these two analyses because of the nature of their group selection; they did not report any problems.

The invitations to participate in the present experimental procedure were advertised in different French language media in Montreal, such as newspapers and websites. Participants were recruited through self-referral and referral by clinicians. In the present study, not all participants were taken from the same study, but this does not create a potential confound because the data of interest corresponds to the pre-psychological intervention phase where recruitment and assessment procedures were the same for all participants, regardless of the intervention undergone subsequently. Inclusion criteria consisted of being between 18 and 55 years of age and heterosexual. In addition, individuals having an organic basis for their sexual dysfunction, or meeting criteria for schizophrenia, affective, paranoid or organic mental problems, drug addiction, current use of antidepressants, neuroleptic or anticonvulsant medication, and severe personality problems were excluded. Participants were compensated with 20 Canadian dollars for their involvement in the study and those wanting or needing further assistance were referred to the appropriate resources.

2. Procedure

The assessment sessions took place at the Fernand-Séguin Research Center in Montreal, Canada. Upon arrival, participants were received in a reception area by an experimenter. Consent and demographic information forms meeting protocol procedures for research with humans were filled out and signed by the participants. After these documents were completed, participants were taken to testing rooms where they filled out questionnaires individually. In addition, they were given written and verbal instructions concerning the procedure. The duration of the entire testing period was approximately one hour and administration of the questionnaires was counterbalanced.

In order to reliably assign participants to the most pertinent group, various types of screening methods were used. Note that social phobia was defined according to the DSM-IV (APA, 1994) and sexual dysfunction according to the DSM-III-R criteria (APA, 1987). After showing interest in the study, individuals were contacted by a member of the research team for an interview over the telephone. If the individual was thought to meet criteria for social phobia or for a sexual dysfunction, a face to face assessment interview was carried out by one of four psychiatrists involved in the study. At this stage, individuals reporting another predominant complaint were excluded from the sample. Participants meeting criteria for sexual dysfunction were submitted to a full physical examination to eliminate any possible organic factor associated with their sexual condition and to assess the effects of medication, if relevant. This examination was done by a physician specialised in internal medicine. In addition, an interview based on the Anxiety Disorders Interview Schedule-Revised (Di Nardo, Moras, Barlow, Rapee and Brown, 1993) was administered to the social phobia group by one of four clinical psychologists in order to reconfirm social phobia criteria and assess other coexisting problems. This interview is based on DSM-III-R (APA, 1987) criteria and reliability findings show that the index of inter-ratter agreement is excellent (kappa =.79) when social phobia is assessed as the principal problem (Di Nardo et al. 1993). After establishing that participants met criteria for social phobia (DSM-IV: APA, 1994), for sexual dysfunctions (DSM-III-R: APA, 1987) or fit in the normal group, they were assigned to their corresponding groups. At this point, they completed all questionnaires in the French language and in pen and paper form.

Refer to Appendix B for the ethics certificates concerning recruitment and experimental procedures.

3. Materials

3.1 The Derogatis Sexual Functioning Inventory (DSFI)

3.1.1 Description of the DSFI

Sexual functioning was assessed with the Derogatis Sexual Functioning Inventory (Derogatis and Melisaratos, 1979) which is a self-report questionnaire that was developed

on the basis of clinical experience, empirical findings and psychological theory (Derogatis, Lopez and Zinzeletta, 1988) (Appendix C). The full instrument consists of a 258-item questionnaire based on dimensions believed to be fundamental to successful sexual functioning and several basic indicators of general well-being such as affect balance and psychological distress.

In the present study, however, the DSFI was used partially, only covering the areas of sexual satisfaction and sexual experience. Thus, it provided both, subjective and objective measures of sexual functioning while minimising total assessment length and time. Sexual satisfaction was assessed with the 10-item true-false DSFI subscale that includes a detailed evaluation of sexual satisfaction in terms of frequency, degree of variation in sexual activities and satisfaction issues that may arise in the different phases of the sexual response cycle. Sexual experience was measured with a 24-item subscale where individuals report whether they have experienced a certain situation within the last 60 days, more than 60 days ago or never. The importance of this measure lies in the fact that the level of past sexual experience correlates positively with success and satisfaction in sexual relationships and seems to be essential in assessing the nature and magnitude of sexual difficulties (Derogatis and Melisaratos, 1979). Both total scores are obtained by summing the scores of each subscale in order to produce a number indicating the level of sexual experience and satisfaction (Conte, 1983).

3.1.2 Reliability

The first step in assessing the validity of an instrument is to establish whether or not the repeated administration of the questionnaire at two points in time yields similar results. A study examining the psychometric properties of the original version of the DSFI reports a Pearson correlation of 0.92 for test-retest reliability on the experience subscale (Derogatis and Melisaratos, 1979). Furthermore, Andersen and Broffitt (1988) found Spearman-Brown reliabilities between 0.84 and 0.90 when using a split-half procedure with the sexual experience subscale. These results are considered excellent and reflect stability when administering this questionnaire. No reliability data is available for the sexual satisfaction subscale specifically.

3.1.3 Internal consistency

Internal consistency of the DSFI was assessed with 325 participants where about half reported sexual problems and the other did not. Cronbach alphas for the sexual experience and satisfaction subscales were found to be 0.97 and 0.71, respectively (Derogatis and Melisaratos, 1979). Although, the internal consistency of the satisfaction subscale is lower than that of the experience subscale, this result is satisfactory.

3.1.4 Discriminant validity

Research also indicates that the DSFI can discriminate between men and women with and without sexual problems (Derogatis and Melisaratos, 1979; Derogatis et al. 1988; Derogatis and Meyer, 1979). More specifically, Derogatis and Melisaratos (1979) found that when reporting sexual satisfaction, 89% of men with sexual problems reported worrying about their sexual performance whereas only 25% of men without sexual problem reported this worry. Finally, Derogatis and Meyer (1979) found that sexually dysfunctional men and women score significantly higher on seven out of eight dimensions of the DSFI when compared to a normal, heterosexual population.

3.1.5 Internal structure

Another way to examine the validity of an instrument is to assess whether the dimensions included in the questionnaire reflect the true structure of the instrument. By examining the factorial structure of the original version of the DSFI, Derogatis and Melisaratos (1979) found that the items of this questionnaire cluster in a way similar to the actual dimensions of the DSFI. This shows adequate and reliable internal questionnaire structure.

3.1.6 Other characteristics

In terms of readability, Jensen, Witcher and Upton (1987) reported that the DSFI requires a ninth grade reading level in order to fully grasp question content, but this does not create a problem for the present study since only 2.36 % of the sample reported an education below that level.

3.1.7 Conclusion about psychometric properties

In sum, the original version of the DSFI shows satisfactory psychometric properties in terms of test-retest reliability, internal consistency, internal structure and discriminant validity between clinical and non-clinical samples. More importantly, the sample used in the Derogatis and Melisaratos (1979) study has clinical characteristics similar to the sexually dysfunctional and the normal groups of the present study. Yet, the present study used the French version of this questionnaire with a sample of participants living in Montreal and the validation of the original questionnaire was conducted in the United States about 25 years ago. Hence, although the psychometric properties of the original version are satisfactory, it is only by extrapolation that it can be concluded that the questionnaire used in the present study is as valid as the original version. Nonetheless, Stravynski et al. (1997) have shown that the French version of the DSFI used in the present study is sensitive to clinical changes following psychological intervention for sexual difficulties.

3.2 The Fear of Negative Evaluation scale (FNE) and The Social Avoidance and Distress scale (SAD)

3.2.1 Description of the FNE and the SAD

The Social Avoidance and Distress scale (SAD) and the Fear of Negative Evaluation scale (FNE) correspond to the two subscales of the Social-Evaluative Anxiety scale (Watson and Friend, 1969). These scales are based on two components of social anxiety: self-reported behaviours (social avoidance) and self-reported subjective distress (social distress). Social avoidance is defined as avoiding or escaping from others in the face of a potential or an actual social situation whereas social distress involves reporting negative emotions or lack of positive emotions in social situations.

Specifically, the FNE assesses worry, distress, and anticipation that others will evaluate oneself negatively. This fear of loss of social approval may affect the individual in many settings of everyday life such as dating and job interviews, for example. The FNE consists of 30 true or false items (Appendix D). The SAD encompasses 28 true or false

items reflecting the attitude of the individual toward social settings (Appendix E). These items are scored as a global index or as two separate sub-scales of 14 items each that translate into (1) avoidance behaviour and (2) feelings of distress. The scoring procedure of the FNE and the SAD is to count the total of dysfunctional responses and then sum them. Therefore, the higher the score, the more avoidance and/or distress is experienced by the participant. Total administration time is about 20 minutes (Watson and Friend, 1969).

3.2.2 Reliability

The FNE shows more than satisfactory one-month test-retest reliability Pearson correlations of 0.78 and 0.94 when administered to two samples of students (Watson and Friend, 1969). The SAD shows one-month test-retest reliability Pearson correlations of 0.68 and 0.79 (Watson and Friend, 1969; Leary, 1991), which are satisfactory.

3.2.3 Internal consistency

The original validation study by Watson and Friend (1969) shows satisfactory internal consistency with mean correlations of each item with its own scale at 0.72 for the FNE and 0.77 for the SAD. Further scale homogeneity was assessed with Kruder-Richardson 20 correlations by using two samples for each scale resulting in KR-20 of 0.94 and 0.96 for the FNE and 0.94 for both samples on the SAD. In later studies, similar internal homogeneity (Cronbach alpha = 0.94) was reported with the FNE and the SAD (Oei, Kenna and Evans, 1991; Leary, 1991). All these results reflect excellent levels of internal consistency.

3.2.4 Discriminant validity

Statistical analyses reveal that the FNE is inversely related to exhibitionism (Watson and Friend, 1969) and to the Marlowe-Crowne Social Desirability Scale ($r = -.25$) (Leary, 1991), meaning that the more the person's response style is characterized by social desirability the lower is the fear of negative evaluation. Also, people who score high on the FNE seem to be characterized by non-autonomy ($r = -.32$) and non-dominance ($r = -.50$) (Watson and Friend, 1969). These results suggest that someone who is afraid of other's judgement (high score on the FNE) will tend to blend into the crowd and try not to attract

attention, possibly to avoid criticism. More recently, a negative correlation of -.81 was found between the Self-Acceptance Scale and the FNE reflecting that the more one accepts oneself, the less negative evaluation there is of oneself (Durm and Glaze, 2001).

In terms of discriminating between different populations, Turner, McCanna and Beidel (1986) found that the FNE and SAD do not discriminate between people with different anxiety problems (e.g., agoraphobia, social phobia and generalised anxiety) with the exception of simple phobia. In regards to the Turner et al. study (1986), Heimberg et al. (1987) argue that these findings are expected because social anxiety is not only a characteristic of social phobia but that it may appear in greater or lesser degrees in all anxiety problems in addition to being reported by normal individuals. However, and more relevant for the present study, it was found that the SAD and FNE can discriminate between normal and social phobic individuals (García-López, Olivares, Hidalgo, Beidel and Turner, 2001). In addition, similar to the results of Turner et al. (1986), it was also found that the FNE can only discriminate simple phobic from social phobic individuals but not from other anxiety problems (Oei et al. 1991).

3.2.5 Convergent validity

Validation studies demonstrate that the FNE correlates at r =.51 with the SAD (Watson and Friend, 1969; Turner et al. 1986), which is moderate but expected since these scales are supposed to measure different dimensions of the same construct (i.e., social anxiety). The FNE and the SAD also appear to be moderately related to various psychological measures. The SAD and the Beck Depression Inventory measuring depression show a correlation of 0.42, the SAD and the Symptoms Checklist-90 measuring general psychological distress show a correlation of 0.49 (Turner et al. 1986), the SAD and the Taylor's Manifest Scale measuring general anxiety show a correlation of 0.54, the SAD and the Endler Hunt measuring reactions to social situations show a correlation of 0.45 and the SAD and Paivio's ASI scale measuring reaction to audience situations show a higher correlation of 0.76 (Watson and Friend, 1969).

Similarly, the FNE and the Beck Depression Inventory show a correlation of 0.55, the FNE and the Symptoms Checklist-90 show a correlation of 0.55 (Turner, et al. 1986), the FNE and the Taylor's Manifest Scale show a correlation of 0.60, the FNE and the

Endler Hunt show a correlation of 0.47 and the FNE and Paivio's ASI scale show a lower correlation of 0.39 (Watson and Friend, 1969). There are also moderate correlations, ranging from 0.50 to 0.63, of the FNE and the SAD with the State and Trait Anxiety Inventory, which is a measure of general anxiety (Turner et al. 1986), and correlations of 0.49 to 0.63 with the Liebowitz Social Anxiety Scale which measures social anxiety (Heimberg et al. 1999). Finally, the Social Anxiety Scale for Adolescents correlates with the FNE ($r = 0.71$) and the SAD ($r = 0.67$) (García-López et al. 2001).

3.2.6 Internal structure

Following factor analyses, evidence shows that these two scales measure different dimensions of the construct known as social anxiety (Oei et al. 1991; García-López et al. 2001) even though they are moderately correlated.

3.2.7 Validation of the French versions

Validation analyses of the French versions of the SAD and FNE were conducted on a set of approximately 250 social phobic individuals. The so far unpublished results show that internal consistency as well as factorial structure are satisfactory (Lachance and Stravynski, 2001). Most importantly, these measures are sensitive to clinical improvement following psychological intervention for social phobia (Stravynski et al. 2000) and sexual problems (Stravynski et al. 1997).

3.2.8 Conclusion about psychometric properties

The FNE and SAD show satisfactory test-retest reliability and internal consistency. Furthermore, these scales converge moderately with other instruments measuring constructs directly related to social anxiety such as general anxiety, distress and reactions to social situations. Although most studies have been carried out with English-speaking populations from the United States, satisfactory psychometric properties are available for a French-speaking population living in Montreal, which corresponds to the sample of the present study. Hence, the evidence suggests that the SAD and FNE seem to be useful and valid instruments when assessing the degree of distress and avoidance in social situations.

3.3 The Symptoms Check-List-90-Revised (SCL-90-R)

3.3.1 Description of the SCL-90-R

The Symptoms Check-List-90-Revised (Derogatis et al. 1973) measures general level of reported subjective complaints from a perspective of nine factors believed to underlie the majority of problems reported by individuals with psychological difficulties (Appendix F). Assessment length consists of 90 items with five-point rating scales that include the following nine primary dimensions: anxiety, depression, somatisation, obsessive-compulsiveness, interpersonal sensitivity, anger-hostility, phobic anxiety, paranoia and psychosis. In addition, the total score indicates global severity of subjective complaints by taking into account all 90 items. Scoring of the SCL-90-R consists in adding the scores of each answer and dividing by the total number of questions: (1) corresponding to a specific dimension and/or (2) corresponding to the entire questionnaire. A high score indicates a severe level of psychological difficulties where the maximum score is 4 and the minimum is 0. Administration time ranges from 12 to 15 minutes (Derogatis, 1977).

For the purpose of the present study, three subscales of the SCL-90-R have been selected because of their pertinence to the link between social phobia and sexual problems in addition to the global score which yields general information. In fact, the final analyses focus on the following subscales: the Interpersonal Sensitivity subscale (i.e., measures reported feelings of personal inadequacy and inferiority in comparison to others), the Anxiety subscale (i.e., measures reported indicators of anxiety such as restlessness, nervousness and tension) and the Phobic anxiety subscale (i.e., measures reported persistent and exaggerated fear associated to a person, place, object or situation) (Derogatis et al. 1973). These subscales measure facets of anxiety and social anxiety and this is why this data is examined in conjunction with the FNE and the SAD in the next chapter (i.e., Results). However, as most literature on psychometric properties concerns the SCL-90-R as a global measure, global validity is reported below.

3.3.2 Reliability

Edwards, Yarvis, Mueller, Zingale and Wagman (1978) found a kappa of 0.94 for two-week test-retest reliability with the SCL-90. This is considered an excellent value because it demonstrates agreement between two measurements over time in the absence of psychological intervention showing, therefore, support for the construct under investigation. Further studies examining reliability show that men and women reporting psychological problems interpret the dimensions of the SCL-90 with a high degree of similarity. In this case, results reflect the stability and generalisation of SCL-90 dimensions between sexes (Derogatis and Cleary, 1976) and strengthen instrument validity. In particular, the Interpersonal Sensitivity subscale shows an invariance coefficient of 0.71 and Phobic Anxiety of 0.78. This is considered highly stable. Finally, the Anxiety subscale shows a coefficient of 0.60 which is qualified as moderate to good invariability (Derogatis and Cleary, 1976).

3.3.3 Internal consistency

Research assessing psychometric properties with a sample of normal participants found that the internal consistency of the SCL-90 has a Cronbach alpha of 0.95 indicating that the items of the construct under investigation are highly related to the total score (Edwards et al. 1978).

Precisely, the subscales of interest in the present study have more than satisfactory internal consistency. More specifically, Interpersonal Sensitivity, Anxiety and Phobic Anxiety yield a Cronbach alpha of 0.86, 0.85 and 0.82, respectively.

3.3.4 Construct validity

Through confirmatory factorial analyses, all nine dimensions resulted in at least moderate levels of agreement between theoretical and empirical representations, therefore providing evidence supporting construct validity (Derogatis and Cleary, 1977).

3.3.5 Discriminant validity

More recent studies suggest that the SCL-90 can discriminate between individuals complaining of psychological difficulties and the normal population (Hafkenscheid, 1993). In addition, it can also differentiate between people meeting criteria for dysthymia, anxiety problems and anorexia nervosa (Rief and Fichter, 1992).

3.3.6 Convergent validity

The global severity index of the SCL-90-R shows a Pearson correlation of 0.68 with the Beck depression inventory which measures depression state, a correlation of 0.49 with the Craig Locus of control scale, a correlation of 0.60 with the Spielberg State-trait anxiety scale and correlations ranging from 0.27 to 0.77 with the clinical scales of the MMPI when administered to a sample of 225 men and women from Girona (Grassot and Llinas, 1997).

3.3.7 Predictive validity

Another research indicated that individuals previously meeting criteria for mood and anxiety problems, according to DSM-III-R (APA, 1987), are reliably categorised in the anxiety and depression dimensions when using the SCL-90-R as an assessment tool (Schmitz, Kruse, Heckrath, Alberti and Tress, 1999).

3.3.8 Construct validity

By using the same sample as in the 1976 study, Derogatis and Cleary (1977) showed that the structure of the SCL-90 has, in fact, nine dimensions. Other factorial analyses support that anxiety and depression are two distinct dimensions of the SCL-90 (Morgan, Wiederman and Magnus, 1998). Conversely, Hoffmann and Overall (1978) also found that this instrument seems to measure a general discomfort dimension rather than distinct aspects of psychological problems.

3.3.9 Other characteristics

As with the DSFI, it seems that in order to fully understand SCL-90-R content, an eight grade reading level is recommended (Beckman and Lueger, 1997).

3.3.10 Validation of the French version of the SCL-90-R

As mentioned previously, the French version the SCL-90-R is used in the present study (Fortin and Coutu-Wakulczyk, 1985). In order to assess questionnaire validity, this version was administered to 404 normal French-speaking women living in Montreal between the ages of 20 and 45. Cronbach alpha calculated on the 90 items shows a coefficient of 0.96 indicating high internal consistency. Similar results were found with the Interpersonal Sensitivity subscale ($\alpha = 0.90$), the Anxiety subscale ($\alpha = 0.90$) and the Phobic Anxiety subscale ($\alpha = 0.92$).

Test-retest reliability is excellent ranging from 0.90 to 0.93 and a Spearman-Brown correlation of 0.94 indicates high homogeneity between items. Further factorial analyses suggest that five principal dimensions cluster for the SCL-90-French version: somatisation, interpersonal sensitivity, anxiety, hostility and psychosis (Fortin and Coutu-Wakulczyk, 1985). Another study identified 11 factors in the French version of the SCL-90-R, which explains 47.5% of the total variance. These factors are: depression, somatisation, panic-agoraphobia, guiltiness, interpersonal sensitivity, hostility-impulsiveness, obsessive-compulsiveness, social avoidance, nervousness-irritability, sleep trouble and psychoticism. Of these 11 dimensions, depression, somatisation and panic-agoraphobia were found to be the main factors by accounting for 21% of the variance (Pariente et al. 1989).

3.3.11 Conclusion about psychometric properties

In light of all these studies, the SCL-90-R appears to be a valid and reliable questionnaire to measure different levels of psychological distress. Current literature shows that there is no clear agreement on whether the nine sub-scales of this instrument are distinct constructs or if this instrument only provides a global index of subjective psychological complaints. However, and more importantly for the present study, the SCL-90-R shows sensitivity in differentiating normal from clinical populations.

3.4 The Social Adjustment Scale-Self Report (SAS-SR)

3.4.1 Description of the SAS-SR

The Social Adjustment Scale-Self Report (Weissman and Bothwell, 1976) assesses social functioning from a perspective of social roles, which are divided into the following categories: work outside home/at home/as a student, social and leisure activities, extended family roles, marital roles, parental roles, and role within the family unit. This instrument is composed of a 58-item scale measuring how the individual adapts and integrates himself to social roles and the level of satisfaction derived from those roles in the last 30 days (Appendix G). Two scoring methods are used: (1) A mean score for each role is calculated by summing the items for each role dimension and dividing by the sum of the items actually scored in that area (2) an overall adjustment score is obtained by the sum of all items divided by the number of items actually scored. Higher scores represent increasing social impairment. The format consists of a five point Likert scale and administration time is about 15 to 20 minutes (McDowell and Newell, 1996).

3.4.2 Reliability

Edwards et al. (1978) found that the SAS-SR has a two-week test-retest reliability of 0.81. More recently, McDowell and Newell (1996) reported a test-retest coefficient of 0.80 and showed that SAS-SR scores are not affected (non-significant correlations) by variables such as age, social class, sex or history of previous depression. This data supports the stability of the instrument across time and across different socio-demographic variables.

3.4.3 Internal consistency

Two studies report the same satisfactory level of internal consistency for the SAS-SR with a coefficient of 0.74 (Edwards et al. 1978; McDowell and Newell, 1996).

3.4.4 Discriminant validity

Analyses show that the SAS-SR is able to discriminate between the following groups of individuals: general population vs. schizophrenics vs. alcoholics vs. depressed

individuals (Weissman and Bothwell, 1976; Weissman, 1978). Furthermore, Edwards et al. (1978) showed that, based on the results of the SAS-SR, university students report significantly better social functioning than individuals reporting psychological problems. Sensitivity to detect different populations is especially relevant for the present study since three groups are being examined. Furthermore, when administering the French version of the SAS-SR and the Montgomery and Asberg depression scale to a depressed population, it was found that these two scales have a Pearson correlation of only 0.17 (Waintraud, Guelfi, Lancrenon and Rouillon, 1995) indicating that the SAS-SR is not related to this measure of depression.

3.4.5 Concurrent validity

By assessing the correlation coefficient of SAS Self-Report versus Clinician-Report, results show that the two versions reveal a Pearson correlation of 0.72 on the overall adjustment score, indicating excellent agreement (Weissman and Bothwell, 1976). In another experimental trial, SAS-SR scales were completed by depressed individuals and by their spouses. Pearson correlation between these two versions was also excellent at 0.74 (Weissman and Bothwell, 1976).

3.4.6 Sensitivity to change

The SAS-SR also shows sensitivity to changes in an individual's clinical status following psychological intervention (Weissman and Bothwell, 1976; Weissman, 1978). This implies that outcome studies can benefit greatly from administering this questionnaire at the pre and post-intervention phases.

3.4.7 Other characteristics

As with the DSFI, Beckman and Luger (1997) found that SAS-SR question content is best understood and interpreted by individuals having at least an eight grade reading level but, as mentioned previously, it is not a problem for this study.

3.4.8 Validation of the French version

Psychometric properties of the French version of the SAS-SR were assessed with a French speaking clinical population (Toupin, Cyr, Lesage, and Valiquette, 1993). Authors found that test-retest reliability correlations are between 0.69 and 0.90 and internal consistency with Cronbach alpha ranges from 0.47 to 0.81. In another study, internal consistency with Cronbach alpha for the French version of the SAS-SR varied from 0.39 to 0.75 (Waintraud et al. 1995).

Sensitivity to change was observed with the French version of the SAS-SR following pharmacological intervention for depression in a French population (Waintraud, et al. 1995) and following a psychological intervention for social phobia in a population from Montreal (Stravynski et al. 2000). Furthermore, the Lipha group is currently researching the psychometric properties of the French version of the SAS-SR with a sample of 1200 people (Achard et al. 1994).

3.4.9 Conclusion about psychometric properties

In sum, the SAS-SR has been validated with several populations and validation information is available for the English and the French versions. This instrument seems reliable and stable in addition to being sensitive to different populations and changes following psychological intervention. However, there is no validation information available for the internal structure of the SAS-SR assessing the different roles of each sub-scale as separate dimensions. This means that only the global score of social functioning has been empirically assessed.

Results

1. Statistical design

The main statistical design of the present study is a MANOVA of sex (2) by group (3) by dependent variables (6) with an alpha level of statistical significance set at $p \leq 0.05$. More specifically, the two categorical independent variables are gender (man or woman) and type of reported psychological complaint (social phobia, sexual dysfunction or no complaint (i.e., normal)). The six continuous dependent variables correspond to the self-reported answers from the questionnaires described in the methodology section. These are: DSFI-satisfaction subscale (measuring sexual satisfaction), DSFI-experience subscale (measuring sexual experience), SCL-90-R (measuring general psychological problems), SAD (measuring social avoidance and distress), SAS-SR (measuring social functioning and satisfaction) and FNE (measuring fear of negative evaluation). Statistical analyses were carried out with SAS® statistical software version 8.2 and with SPSS® version 11.5.

The chief dependent variables of this study are the two subscales of the DSFI providing direct information about the sexual functioning of the three groups being compared. Of secondary importance are the results of the FNE, the SAD and three subscales of the SCL-90-R providing measures of social anxiety. Lastly, the remaining results on self-reported questionnaires are used for additional analyses in order to better delineate and understand social (SAS-SR) and psychological (SCL-90-R) functioning of all three groups. There is no missing data in this sample.

2. Choice of statistical analyses

The present section justifies the choice and sequence of analyses used in this study.

2.1 Multivariate analysis of variance: MANOVA

The present statistical design has more than one dependent variable since the main objective is to explore the differences and similarities in sexual functioning between three groups of men and women meeting different criteria for psychological problems. Hence, the statistical procedure of choice is a multivariate analysis of variance (MANOVA). This

procedure emphasises mean differences and statistical significance of differences among groups while providing adequate control for inflated Type I error and accounting for correlations between dependent variables. The following assumptions, necessary for the conduct of MANOVA, were carefully assessed.

For the results of a MANOVA to be valid and interpretable three main assumptions have to be tested and met. These are: (1) the observations are independent (2) the population covariances for the dependent variables in each group are homogeneous and (3) the observations on the dependent variables follow a multivariate normal distribution in each group. In addition, it is also important to verify the existence of correlations between dependent variables in order to assess if it is justifiable to select MANOVA as an analysis (Stevens, 1992; Tabachnick and Fidell, 2001). These four factors are considered below.

The first assumption stating that observations must be independent is the most important one to respect because even a small violation of it has an influence on the level of significance and power of the F statistic (Stevens, 1992). Although MANOVA is robust to lack of normality and variance-covariance homogeneity, if both assumptions are violated at the same time, there could be a problem with significance and power. Considering that the sample of this study is composed of unequal but numerous participants in each group, it is more important to respect homogeneity than normality. This is because a lack of normality slightly affects the level of significance when n is adequate whereas lack of homogeneity can seriously affect alpha levels when n are unequal among groups. In summary, the independence assumption is the most critical, followed by homogeneity of variance/covariance and normality.

Testing Multivariate assumptions:

Assumption 1, Independence of observations: This assumption is met because the scores on the dependent variables for each participant are not influenced by scores of the other participants.

Assumption 2, Homogeneity of covariance: Covariance homogeneity was checked with the Box test. The null hypothesis in this test signifies that covariance matrices are homogeneous. Therefore, a non-significant outcome of the Box test indicates that this

assumption is respected. Results show a significant M of 234.59, $F= 2.14$, $p<.05$. It seems that there is a problem with homogeneity of variance/covariance. However, MANOVA is robust to the lack of covariance homogeneity (Stevens, 1992) and at this stage data were not manipulated to correct the situation.

Assumption 3, Normal distributions: The Box test is also sensitive to normality so a significant result may reflect a lack of normality. To investigate this further, P-P plot graphs were carried out. These allow visualisation of how the probability of cumulative errors relates to the cumulative predicted probability if the distribution was normal. When looking at a plot, a normal distribution will show that residuals (dots) coincide with the predicted normal relation (lines). Presently, it is impossible to carry out this sort of graph in a multivariate environment therefore, univariate P-P plots were carried out for each dependent variable. As can be seen in Appendix H, the FNE shows a fairly normal distribution. However, the SAD and the DSFI-satisfaction appear to be distributed less normally, and the SCL-90-R, the SAS-SR and the DSFI-experience even less so. Recoding was attempted on the five dependent variables that do not appear normally distributed, but this correction ended up affecting homogeneity negatively (procedure not developed here). Hence, considering this situation, in addition to the fact that MANOVA is robust to the lack of normality, corrections were not applied.

Finally, most dependent variables show significant correlations (Pearson, <.05) except for the SAD and the FNE which do not seem correlated with the DSFI-experience. Therefore, there is an empirical relationship between most dependent variables and it is justified to carry out a MANOVA. See Table III for correlations of dependent variables (Stevens, 1992; Tabachnick and Fidell, 2001).

Table III. Pearson Correlations Between Dependent Variables

Variables	FNE	SAS-SR	SCL-90-R	DSFI-exp	DSFI-satif
SAD	.64	.54	.49	-.10	-.11
	p= 0.000	p= 0.000	p= 0.000	p= 0.065	p= 0.029
FNE	-	.49	.51	-.06	-.16
		p= 0.000	p= 0.000	p= 0.228	p= 0.001
SAS-SR	-	-	.71	-.19	-.27
			p= 0.000	p= 0.000	p= 0.000
SCL-90-R	-	-	-	-.14	-.27
				p= 0.006	p= 0.000
DSFI-exp	-	-	-	-	.45
					p= 0.000

Note: N = 381

The next step consists in setting up the data to be able to carryout univariate analyses. This is because significant multivariate results give information about means being statistically different but do not provide information about where these differences lie. Therefore, univariate analyses of variance have to be performed in order to better understand results.

2.2 Univariate analysis of variance: ANOVA

Univariate analyses underlie the same assumptions as multivariate analyses. Therefore, these assumptions are considered in this section but under a univariate focus (Gravetter and Wallnau, 1996; Stevens, 1992).

As already mentioned, the first assumption about observations being independent is respected because of the nature of the experimental design. Next, homogeneity of variance was tested with the Levene test which is equivalent to the Box test but in a univariate environment. Results show that when examining each dependent variable separately, variances for all dependent variables are heterogeneous except for the SAS-SR (Table IV). This means that the data fail to meet this assumption and implies that additional statistical correction procedures have to be applied in order to carry out meaningful ANOVAS.

Table IV. Univariate Levene Tests of Homogeneity of Variance.

Dependent variables	F
SAD	7.93*
FNE	12.74*
SAS-SR	1.02
SCL-90-R	3.80*
DSFI-exp	4.03*
DSFI-satif	5.21*

* $p < 0.05$ df=375

Instead of opting for data manipulation in order to account for lack of homogeneity, the ANOVA model with mixed procedure (available in SAS® 8.2 software) was considered more appropriate because it automatically accounts for inequality of variances and therefore does not require additional corrections. The objective of this analysis is to detect statistically different means while accounting for heterogeneous variances among groups. Hence, it allows for more flexibility while using the same style of data analysis than ANOVA (SAS user's guide, 2004; Wang, 1997).

Finally, the normality assumption has already been assessed in a univariate fashion in section 2.1 and it was decided that no modifications would be applied to the data.

In the event of univariate significant differences, contrasts must be carried out in order to assess exactly which groups differ from one another. The next section presents which and why specific contrast procedures were selected for this study.

2.3 Post Hoc tests: Bonferroni contrasts

Post hoc Bonferroni tests have been selected in order detect statistical significant contrasts. This specific post hoc test is chosen because it controls for Type I error inflation due to multiple analyses and because the number of dependent variables in the present design is less than seven, so adequate power is preserved (Stevens, 1992).

2.4 Discriminant function

Discriminant function is a statistical analysis that allows for similar verifications as MANOVA but by using the opposite perspective. While MANOVA verifies if group membership produces significant differences on a set of variables, discriminant function verifies if a set of variables can be used to determine group membership. Therefore, results of this type of analysis detect relevant combinations of variables that have the ability of separating groups. The main advantage of the discriminant function is that it accounts for variable intercorrelation because it looks at the importance of each variable by considering the presence of the other variables. This procedure permits delineation of group profiles based on different concepts and examines the relationship between these concepts for each group (Stevens, 1992; Tabachnick and Fidell, 2001; Stravynski, Basoglu, Marks, Sengun and Marks, 1995a; Beaulieu, Dinh and Girard, 2003).

3. Presentation of general results

Before testing each hypothesis specifically, general results are presented. First, statistical power of MANOVA with an alpha level set at 0.05 yielded a result of 1 for both, group and sex analyses and of 0.94 for the group by sex interaction. These values reflect strong power which means that even small effects can be easily detected. Second, Wilks' Lambda is used to assess significance when there are more than two dependent variables, as in the present case. As shown in Table V, results reveal that there are significant effects of group [F (12, 740) = 40.39, $p < 0.05$], sex [F (6, 370) = 5.35, $p < 0.05$] and group by sex interaction [F (12, 740) = 2.13, $p < 0.05$].

Table V. Multivariate Analysis of Variance of Participants by Group and by Sex

Source of variance	Wilks' Lambda	F	df	df (e)
Group	0.37	40.39*	12	740
Sex	0.92	5.35*	6	370
Group by Sex	0.93	2.13*	12	740

*$p < 0.05$

Following these results, further univariate analyses of variance (ANOVA mixed model) were performed. Results show that group by sex interactions are present for sexual experience (DSFI-exp) and for social avoidance and distress (SAD). Analyses revealed significant mean differences for the rest of the dependent variables (DSFI-satif, SAS-SR, FNE and SCL-90-R) but no interactions emerged. These results and relevant post hoc analyses are considered in the next sections. More specifically, section 4 covers the most important measures of this study which are sexual satisfaction (DSFI-satif), sexual experience (DSFI-exp) and social anxiety (FNE, SAD and relevant subscales of the SCL-90-R) while section 5 presents additional analyses about social functioning (SAS-SR) and psychological functioning (SCL-90-R) and includes an analysis of discriminant function. Finally, section 6 provides a summary of the results.

4. Hypotheses testing

4.1 Testing of hypothesis 1: sexual experience (DSFI-Experience)

The first hypothesis states that the social phobic group, regardless of sex, should report the same levels of sexual experience as the sexually dysfunctional group while reporting less experience than the normal group.

The initial univariate mixed analyses show a significant interaction between sex and group for reported sexual experience in the last 60 days (DSFI-exp), $F(2, 375) = 5.91$, $p < 0.05$. Since interactions were present, Bonferroni contrasts were carried out and p values were adjusted by multiplying them by the number of contrast comparisons. This correction was applied throughout this chapter to all analyses yielding interaction effects. Alpha level remains unchanged at 0.05.

As predicted by the initial hypothesis, normal men report more sexual experience than social phobic men [F (1, 375) = 12.92, $p < 0.05$] and than sexually dysfunctional men [F (1, 375) = 39.46, $p < 0.05$]. Likewise, social phobic and sexually dysfunctional men do not significantly differ from one another when reporting sexual experience in the last 60 days.

Results of sexual experience (DSFI-exp) reported by women reveal only one significant difference: Social phobic women report significantly more sexual experience in the last 60 days than sexually dysfunctional women [F (1, 375) = 12.28, $p < 0.05$]. This does not corroborate the hypothesis that social phobic women should report similar levels of sexual experience as sexually dysfunctional women. In addition, and contrary to the hypothesis, normal women do not differ significantly from social phobic women or from sexually dysfunctional women. This means that social phobic women report more sexual experience (DSFI-exp) in the last 60 days than sexually dysfunctional women but the same level of experience as normal women. In addition, within the normal group, men report significantly more sexual experience than women, F (1, 375) = 19.63, $p < 0.05$.

Figure 1 shows the mean ratings by group and by sex for sexual experience (DSFI-exp) and Table VI presents means, standard deviations and Bonferroni contrasts by group and by sex.

Figure 1. Sexual Experience (DSFI-exp) of Participants by Group and by Sex

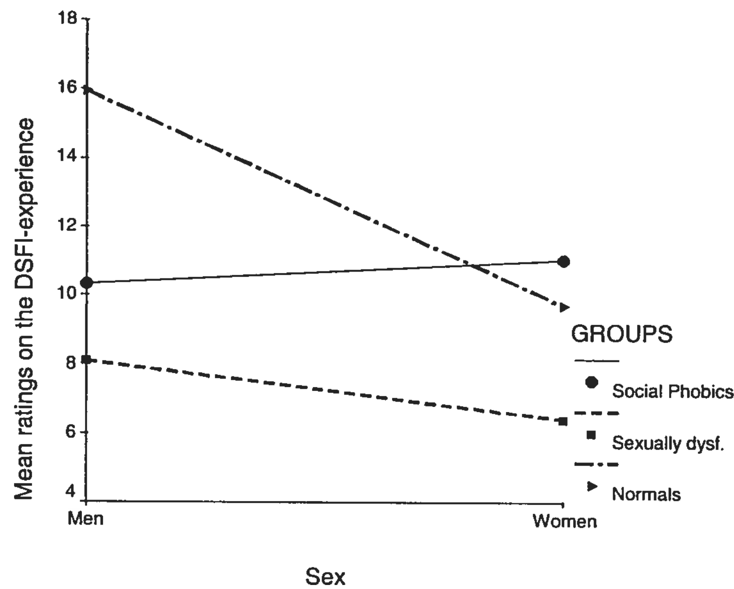


Table VI. Sexual Experience (DSFI-exp) of Participants by Group and by Sex.

Variable: total score on the DSFI-experience

Groups	Sex	n	M	SD	Contrasts
Social Phobic (SP)	Men	45	10.33	8.03	**Normal:**
	Women	61	11.03	7.67	Women < Men
Sexually Dysfunctional (SD)	Men	96	8.09	7.31	**Men:**
	Women	68	6.42	7.26	(SP = SD) < N
Normal (N)	Men	40	15.95	6.35	**Women:**
	Women	71	9.70	8.34	SD < SP

Note: the higher the mean, the more sexual experience is reported

Hence, the first hypothesis is only partially confirmed. Support for this hypothesis is found with men only in the following results: (1) Social phobic men report less sexual experience than normal men (2) Social phobic men report the same level of sexual experience than sexually dysfunctional men. The hypothesis is not supported when looking

at the results for women. In fact, social phobic women report the same level of sexual experience as normal women and more sexual experience than sexually dysfunctional women.

4.2 Testing of hypothesis 2: sexual satisfaction (DSFI-Satisfaction)

The second hypothesis states that the social phobic group, regardless of sex, should report the same levels of sexual satisfaction as the sexually dysfunctional group while reporting less experience than the normal group.

Results on reported sexual satisfaction did not yield any statistically significant group-sex interactions. When looking at univariate significant group differences [F (2, 375) = 90.07, $p < 0.05$] of reported sexual satisfaction, the initial hypothesis is not corroborated. In fact, Bonferroni post hoc analyses show that sexually dysfunctional individuals report a significantly lower mean score (M = 4.43, SD = 2.05) than social phobic (M = 7.00, SD = 2.51), t (375) = 8.78, $p < 0.05$, and than normal individuals (M = 7.57, SD = 2.32), t (375) = -12.73, $p < 0.05$. Normal and social phobic individuals do not differ significantly in their degree of sexual satisfaction. In addition, results show that men report a lower mean score of sexual satisfaction (M = 6.03, SD = 2.46) than women (M = 6.09, SD = 2.86) regardless of group membership, F (1, 375) = 5.88, $p < 0.05$.

In sum, the second hypothesis is not supported because social phobic and normal individuals report similar levels of sexual satisfaction while sexually dysfunctional individuals report being significantly less sexually satisfied than the other two groups. Conversely, the initial hypothesis predicted that social phobic and sexually dysfunctional individuals would be equally sexually satisfied and less satisfied than normal participants.

4.3 Testing of hypothesis 3: social anxiety (FNE, SAD and SCL-90-R)

The third hypothesis states that the social phobia group and the sexually dysfunctional group should be alike in levels of social anxiety while reporting higher levels of social anxiety than the normal group. Social anxiety is measured by the FNE, SAD, the Interpersonal Sensitivity subscale, the Anxiety subscale and the Phobic Anxiety subscale.

4.3.1 Fear of negative evaluation (FNE)

Results for Fear of Negative Evaluation (FNE) indicate that men, regardless of group membership, report being less afraid of being evaluated by others than women, F (1, 375) = 8.34, $p < 0.05$ with respective mean ratings of 17.39 (SD = 8.49) and 19.48 (SD = 8.51). Furthermore, there is a group effect of F (2, 375) = 114.96, $p < 0.05$. Post hoc analyses show that social phobic individuals (M = 25.35, SD = 4.45) report significantly greater fear of being evaluated by others in comparison to sexually dysfunctional (M = 17.38, SD = 7.92), t (375) = 10.16, $p < 0.05$, and to normal individuals (M = 13.56, SD = 8.32), t (375) = 13.67, $p < 0.05$. In addition, the sexually dysfunctional group reports more fear of being evaluated by others than the normal group, t (375) = 4.54, $p < 0.05$.

Hence, the hypothesis was not corroborated because social phobic and sexually dysfunctional individuals differ in the reported severity of fear of being evaluated. However, sexually dysfunctional individuals do report being more fearful of being evaluated by others than the normal group. This pattern is in line with the initial hypothesis.

4.3.2 Social avoidance and distress (SAD)

The SAD scale yields three measures: (1) a global score (avoidance and distress), (2) a specific score for behavioural avoidance and (3) a specific score for subjective distress. Univariate mixed analyses reveal significant interactions between sex and group for the global measure of social avoidance and distress (SAD) [F (2, 375) = 3.61, $p < 0.05$]. More specifically, 2 x 2 Bonferroni contrasts show that, social phobic men report significantly higher global scores on the SAD than sexually dysfunctional men, F (1, 375) = 86.66, $p < 0.05$, and than normal men, F (1, 375) = 210.78, $p < 0.05$. Furthermore, sexually dysfunctional men score significantly higher on the SAD than normal men, F (1, 375) = 23.22, $p < 0.05$. Similarly, social phobic women report significantly higher global scores on the SAD than sexually dysfunctional women, F (1, 375) = 96.17, $p < 0.05$, and than normal women, F (1, 375) = 107.99, $p < 0.05$. There was no evidence showing that sexually dysfunctional and normal women differ from one another in reported global SAD scores. Figure 2 represents the group by sex interaction for total SAD scores and Table VII depicts

mean ratings and contrasts for the social avoidance and distress measure (SAD) for group by sex.

Figure 2. Global Social Avoidance and Distress (SAD) of Participants by Group and by Sex

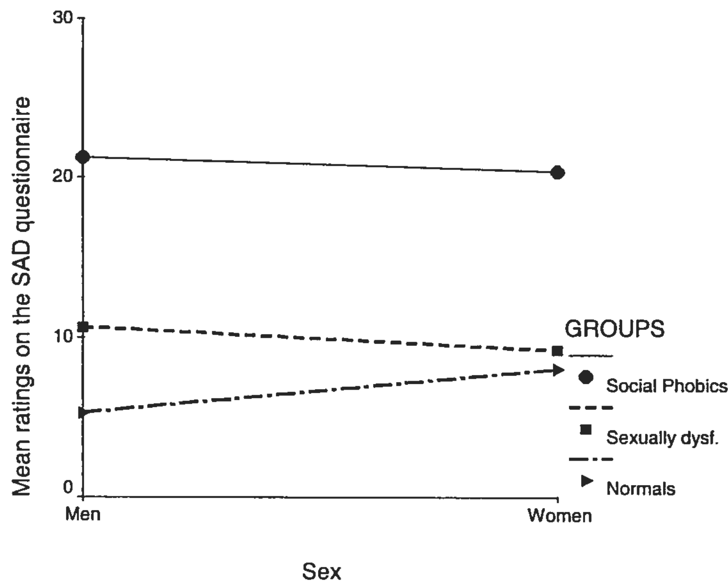


Table VII. Global Social Avoidance and Distress (SAD) of Participants by Group and by Sex

Variable: total scores on the SAD

Groups	Sex	n	M	SD	Contrasts SP = soc. phob. SD = sex.dysf. N = normal
Social Phobic	Men	45	21.27	5.38	**Men:**
	Women	61	20.43	5.75	N < SD < SP
Sexually Dysfunctional	Men	96	10.64	7.96	
	Women	68	9.21	7.22	**Women:**
Normal	Men	40	5.30	4.76	(N = SD) < SP
	Women	71	8.04	7.89	

Note: the higher the mean, the more social avoidance and distress are reported

Furthermore, as shown by Figure 3 and Table VIII, the same interaction pattern as the global SAD scores also emerged for the Behavioural Avoidance subscale of the SAD [F (2, 375) = 5.42, $p < 0.05$]. Indeed, social phobic men report more avoidance than sexually dysfunctional men [F (1, 375) = 64.55, $p < 0.05$] and than normal men [F (1, 375) = 159.91, $p < 0.05$]. Also, sexually dysfunctional men report more behavioural avoidance in social situations than normal men with a statistical significance of F (1, 375) = 23.56, $p < 0.05$. Social phobic women report significantly higher levels of avoidance than sexually dysfunctional [F (1, 375) = 60.91, $p < 0.05$] and than normal women, [F (1, 375) = 59.77, $p < 0.05$], but these last two groups do not significantly differ from one another.

Figure 3. Behavioural Avoidance (SAD-Avoidance) of Participants by Group and by Sex

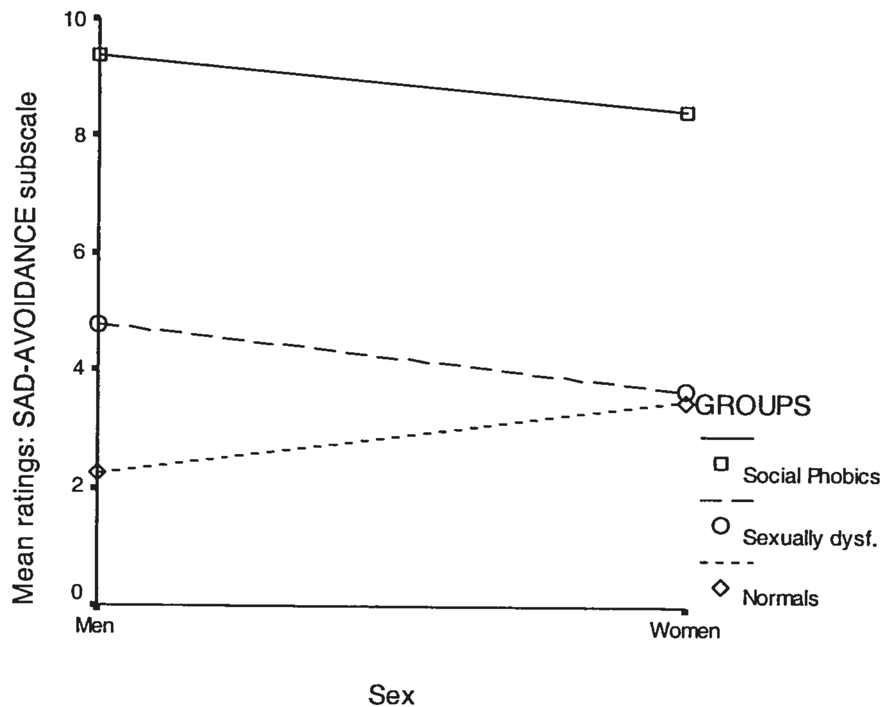


Table VIII. Behavioural Avoidance (SAD-Avoidance) of Participants by Group and by Sex

Variable: scores on the AVOIDANCE subscale of the SAD

Groups	Sex	n	M	SD	Contrasts SP = soc. phob. SD = sex.dysf. N = normal
Social Phobic	Men	45	9.36	2.88	**Men:**
	Women	61	8.44	4.74	N < SD < SP
Sexually Dysfunctional	Men	96	4.78	3.67	
	Women	68	3.66	3.15	**Women:**
Normal	Men	40	2.25	2.30	(N=SD) < SP
	Women	71	3.49	3.58	

Note: the higher the mean, the more social avoidance is reported

Lastly, when analysing the Distress subscale of the SAD, the previous interaction pattern is not revealed. In fact, only group differences emerge [F (2, 375) = 180.20, $p < 0.05$]. Specifically, social phobic individuals report more distress than sexually dysfunctional, [t (375) = 13.43, $p < 0.05$] and than normal individuals, [t (375) = 17.37, $p < 0.05$] with respective mean ratings of 11.95 (SD = 2.77), 5.73 (SD = 4.68) and 4.01 (SD = 4.20). Furthermore, sexually dysfunctional individuals report higher distress than normal individuals, [t (375) = 3.60, $p < 0.05$]. This pattern is the same as the one for men in both previous measures.

Briefly, the hypothesis stating that social phobic and sexually dysfunctional individuals would report the same levels of social anxiety according to the SAD is not supported. In fact, social phobic individuals consistently report the highest scores on all measures of the SAD (showing more behavioural avoidance and distress than the two other groups). However, and in line with the suggested pattern of this hypothesis, sexually dysfunctional men report higher SAD scores than normal individuals and than normal women (i.e., global avoidance and distress measures) while sexually dysfunctional women only report higher distress in social situations.

4.3.3 Interpersonal sensitivity, anxiety and phobic anxiety (SCL-90-R)

These last three measures were taken from dimensions of SCL-90-R. The Interpersonal Sensitivity sub-scale shows a group effect of [F (2, 375) = 41.32, $p < 0.05$], where social phobic individuals report higher levels of interpersonal sensitivity than sexually dysfunctional, [t (375) = 6.39, $p < 0.05$] and than normal individuals, [t (375) = 9.08, $p < 0.05$], whereas sexually dysfunctional individuals also report higher levels of interpersonal sensitivity than normal individuals with a significance of t (375) = 3.61, $p < 0.05$. In addition, regardless of group membership, women report significantly more interpersonal sensitivity, [F (1, 375) = 5.85, $p < 0.05$] than men, with respective mean ratings of 0.98 (SD = 0.78) and 0.82 (SD = 0.70).

Moreover, group effects emerged for the Anxiety [F (2, 375) = 15.46, $p < 0.05$] and the Phobic Anxiety [F (2, 375) = 19.12, $p < 0.05$] subscales of the SCL-90-R. In fact, social phobic participants report significantly higher levels of anxiety, [t (375) = 5.51, $p < 0.05$] and of phobic anxiety, [t (375) = 6.17, $p < 0.05$] than the normal group. Also, social phobic individuals report more anxiety, [t (375) = 4.17, $p < 0.05$] and phobic anxiety, [t (375) = 5.33, $p < 0.05$] than sexually dysfunctional individuals. No differences emerged between sexually dysfunctional and normal individuals on these two measures. For means, standard deviations and contrasts of the interpersonal sensitivity, anxiety and phobic anxiety subscales, refer to Table IX.

Table IX. Psychological Complaints by Scale of Participants by Group

SCL-90-R subscales	Social Phobic n= 106		Sexually Dysfunctional n=164		Normal n= 111		Contrasts SP = soc. phob. SD = sex.dysf. N = normal
	M	SD	M	SD	M	SD	
Interpers. Sensitiv.	1.39	0.77	0.80	0.64	0.58	0.63	N < SD < SP
Anxiety	0.88	0.65	0.55	0.57	0.44	0.59	(DS=N) < SP
Phobic Anxiety	0.57	0.62	0.23	0.34	0.17	0.29	(DS=N) < SP

Note: the higher the means, the more psychological complaints are reported

Once again, the hypothesis was not corroborated because social phobic individuals differentiate themselves from the two other groups by reporting the highest scores on all measures, reflecting more complaints. The only measure that shows a similar pattern to the initial hypothesis is in the instance where sexually dysfunctional individuals report higher scores of social sensitivity when compared to normal individuals. Otherwise, sexually dysfunctional and normal individuals report the same levels of anxiety and phobic anxiety which does not fit the third hypothesis of the present study.

5. Additional analyses

5.1 Measure of social functioning and adjustment (SAS-SR)

Another facet of social functioning was assessed with the SAS-SR which measures social adjustment in different areas of everyday life. Analyses of global scores only reveal group effects [F (2, 375) = 30.01, $p < 0.05$] where normal individuals report better social functioning than sexually dysfunctional [t (375) = 3.67 $p < 0.05$] and than social phobic individuals [t (375) = 7.71, $p < 0.05$]. In turn, social phobic individuals report the poorest social functioning on the SAS-SR (M = 2.08, SD = 0.41) when compared to sexually dysfunctional (M = 1.86, SD = 0.36) [t (375) = 4.84, $p < 0.05$] and to normal individuals (M = 1.69, SD = 0.36).

Further SAS-SR subscale analyses show more detailed results for each social functioning area. A factor to consider in these analyses is that the number of respondents

varies depending on the subscale being analysed. This is because the SAS-SR allows the participant to skip a section if that section is not relevant to him or her. For example, if the individual does not go to school, questions about this area are disregarded. The number of participants that responded to each subscale is indicated in the result tables.

Results show group effects for the "work outside the home" [F (2, 288) = 14.74, $p < 0.05$] and "work at home" [F (2, 375) = 4.28, $p < 0.05$] subscales. More specifically, social phobic individuals report significantly more difficulties at work outside the home [t (288) = 4.17, $p < 0.05$] than sexually dysfunctional and than [t (288) = 5.40, $p < 0.05$] normal individuals but the last two groups do not differ from one another. Also, social phobic individuals report more difficulties in domestic adjustment (work at home subscale) than normal individuals [t (375) = 2.73, $p < 0.05$] whereas sexually dysfunctional individuals do not differ from social phobic or normal individuals.

Next, enjoyment of "leisure activities/free time" and adjustment to "extended family" relationships was assessed. In these cases, the group effects show the same pattern as the one found for the global score of the SAS-SR. In fact, group effect of the "leisure/free time" subscale [F (2, 375) = 24.61, $p < 0.05$] shows that social phobic individuals report the least enjoyment of their free time when compared to sexually dysfunctional [t (375) = 3.98, $p < 0.05$] and normal individuals [t (375) = 7.01, $p < 0.05$]. In addition, normal individuals report significantly more enjoyment than sexually dysfunctional individuals [t (375) = 3.75, $p < 0.05$]. Similarly, the group effect on the "extended family" subscale [F (2, 348) = 16.75, $p < 0.05$] reveals that social phobic individuals report having more difficulty with extended family relationships than sexually dysfunctional [t (348) = 2.79, $p < 0.05$] and than normal individuals [t (348) = 5.75, $p < 0.05$]. Also, sexually dysfunctional individuals report more difficulties in this area than normal individuals [t (348) = 3.62, $p < 0.05$].

In terms of "marital/romantic" relationships, a different pattern emerged showing, once again, a significant group effect [F (2, 121) = 10.15, $p < 0.05$] but in this case, normal individuals report having significantly less difficulties within their couple when compared to social phobic [t (121) = 4.19, $p < 0.05$] and to sexually dysfunctional individuals [t (121) = 3.58, $p < 0.05$] while the last two groups do not differ from one another.

Means and contrasts for the "work outside the home", "work at home", "leisure/free time", "extended family" and "marital/romantic" subscales are depicted in Table X.

Table X. Social Adjustment by Scale of Participants by Group

SAS-SR subscales	Social Phobic M	SD	n	Sexually Dysf. M	SD	n	Normal M	SD	n	Contrasts (SP = soc. phob. SD = sex.dysf. N = normal)
Work out. home	1.87	0.52	81	1.57	0.44	126	1.50	0.33	87	(SD=N) < SP
Work at home	2.01	0.61	106	1.83	0.58	164	1.80	0.56	111	N < SP
Leisure/ free time	2.46	0.71	106	2.15	0.67	164	1.85	0.60	111	N < SD < SP
Extended family	1.89	0.47	90	1.71	0.48	158	1.52	0.43	106	N < SD < SP
Marital/ romantic	2.10	0.55	47	2.05	0.37	39	1.67	0.45	41	N < (SP=SD)

Note: the higher the means, the more social maladjustment is reported

Gender differences emerged for two subscales, namely, "school" and "friendship". Women report better adjustment in school [F (1, 59) = 5.20, $p < 0.05$] than their male counterparts with respective means of 1.29 (SD = 0.32, n = 36) and 1.63 (SD = 0.64, n = 29). For the "friendship" subscale, the analysis yielded an interaction effect [F (2, 375) = 3.76, $p < 0.05$] where social phobic men [F (1, 375) = 29.24, $p < 0.05$] and sexually dysfunctional men [F (1, 375) = 10.14, $p < 0.05$] report having significantly more difficulties with their friendships than normal men, whereas social phobic and sexually dysfunctional men do not differ from one another. Social phobic women, on the other hand, report experiencing more difficulties with their friends than sexually dysfunctional [F (1, 375) = 17.30, $p < 0.05$] and normal women [F (1, 375) = 15.47, $p < 0.05$] while the last two groups do not differ from one another. In addition, social phobic women report significantly less difficulty in this area than social phobic men [F (1, 375) = 9.38, $p < 0.05$].

Sexually dysfunctional women report the same pattern [F (1, 375) = 18.64, $p < 0.05$] as social phobic women in regards to men. The interaction effect is illustrated in Figure 4 and the means and contrasts are presented in Table XI. Finally, no significant differences between groups or sex were found for the "parental" (n = 133) and the "family unit" (n = 289) subscales, in other words, relationship with children and role within immediate family (i.e., children and partner).

Figure 4. Adjustment to Friendships (SAS-SR-Friends) of Participants by Group and by Sex

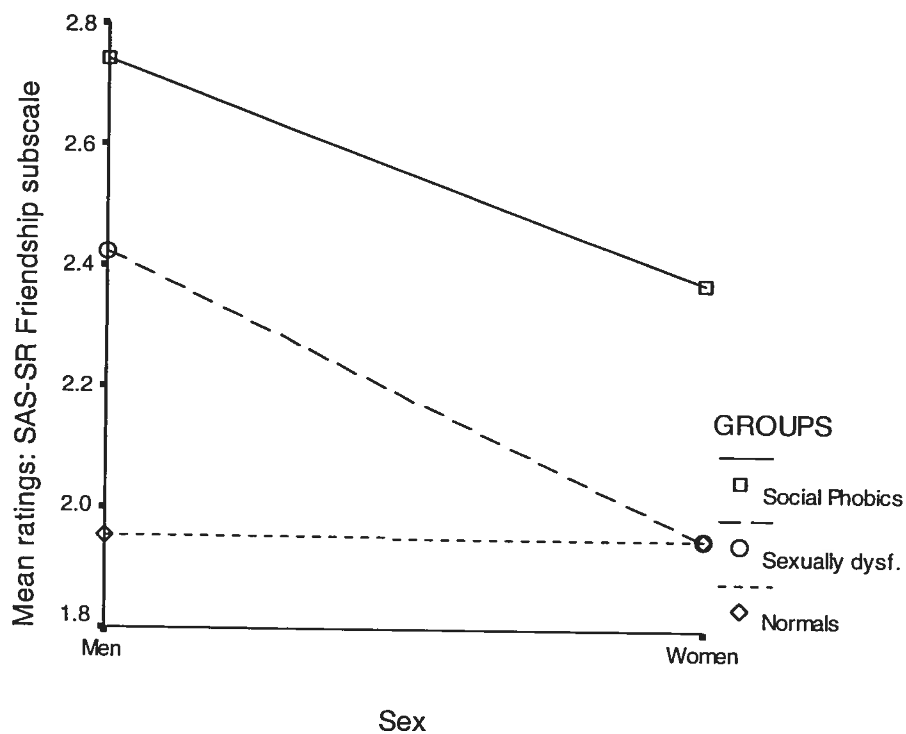


Table XI. Adjustment to Friendships (SAS-SR-Friends) of Participants by Group and by Sex

Variable: scores on the FRIENDSHIP subscale of the SAS-SR

Groups	Sex	n	M	SD	Contrasts SP = soc. phob. SD = sex.dysf. N = normal
Social Phobic	Men	45	2.74	0.59	
	Women	61	2.37	0.64	**Men:** N < (SP=SD)
Sexually Dysfunctional	Men	96	2.42	0.89	**Women:** (SD=N)<SP
	Women	68	1.95	0.51	
Normal	Men	40	1.95	0.73	**SP:** F<M
	Women	71	1.95	0.59	**SD:** F<M

Note: the higher the means, the more social maladjustment is reported

5.2 Measure of general psychological complaints (Global SCL-90-R)

When examining general psychological complaints (SCL-90-R), ANOVAS show an effect for group [F (2, 375) = 16.63, $p < 0.05$] and for sex [F (1, 375) = 4.39, $p < 0.05$]. In fact, post hoc analyses reveal that women, regardless of the group they belong to, report significantly more complaints (M = 0.73, SD = 0.53) (SCL-90-R) than men (M = 0.66, SD = 0.49). In addition, group differences reveal that social phobic individuals (M = 0.89, SD = 0.55), regardless of gender, report more complaints than sexually dysfunctional (M = 0.69, SD = 0.46), [t (375) = 2.96, $p < 0.05$], and than normal individuals (M = 0.52, SD = 0.49), [t (375) = 5.69, $p < 0.05$]. Also, sexually dysfunctional individuals report significantly more complaints than normal individuals, t (375) = 3.57, $p < 0.05$.

5.3 Discriminant function

The results of multivariate, univariate and contrast analyses including dependent variables measuring sexual satisfaction (DSFI-satif), sexual experience (DSFI-exp), fear of negative evaluation (FNE), social avoidance and distress (SAD), social adjustment (SAS-

SR) and general psychological complaints (SCL-90-R) show that, in several cases, sexual and social functioning are significantly different depending on group membership (i.e., social phobia, sexual dysfunction, normal) and sex. In addition to this information, the present discriminant function analysis clarifies which variables maximise separation between groups (i.e., social phobia, sexual dysfunction, normal) by forming one or more combinations of the most discriminating variables.

Results show that two significant functions emerge where Function 1 accounts for 74.5% of the variance and Function 2 accounts for 25.5% of it. Table XII presents coefficients loading for Function 1 and Function 2. The higher the absolute coefficient number, the better the variable is able to discriminate between groups. In Function 1, the highest coefficients correspond to two measures of social anxiety and one of sexual functioning, namely, the Social Avoidance and Distress scale (SAD), the Fear of Negative Evaluation scale (FNE) and the Sexual Satisfaction subscale (DSFI-satif). Function 2 loaded mostly on Sexual Satisfaction (DSFI-satif) and somewhat on Fear of Negative Evaluation (FNE).

Table XII. Discriminant Function Standardised Coefficients and Main Statistics

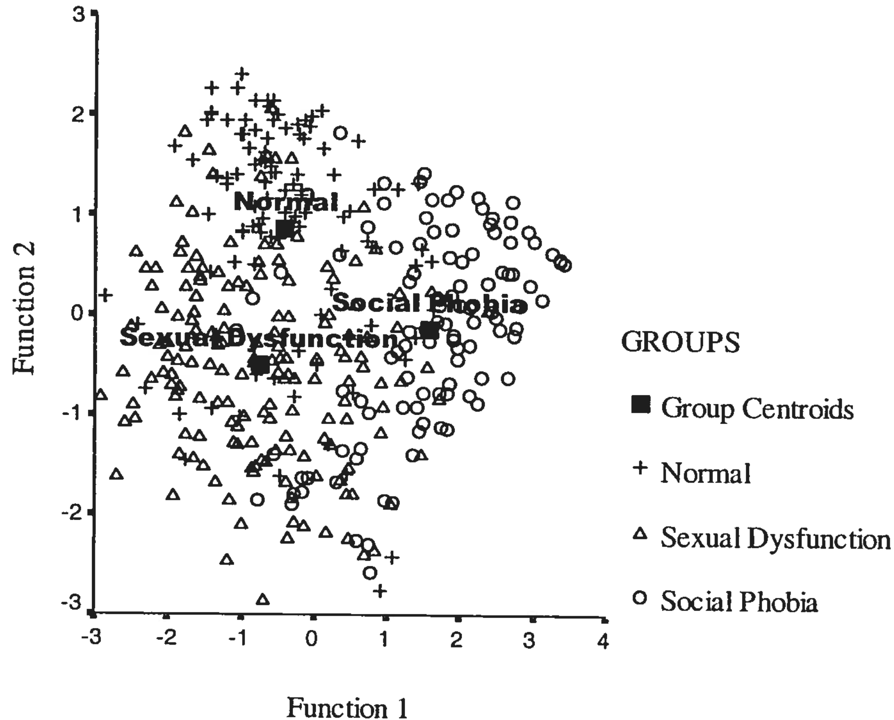
Variable list		Function 1	Function 2
Social Avoidance and Distress (SAD)		0.74	-0.20
Sexual Satisfaction (DSFI-satif)		0.62	0.82
Fear of Negative Evaluation (FNE)		0.39	-0.29
Symptom Check-List (SCL-90-R)		-0.22	0.25
Social Adjustment (SAS-SR)		0.19	-0.11
Sexual Experience (DSFI-exp)		0.03	0.05
Centroids	Social Phobia	1.57	-0.13
	Sexual Dysfunction	-0.74	-0.50
	Normal	-0.40	0.87
Function eigenvalue		0.98	0.34
% of variance		74.5	25.5
Canonical correlation		0.70	0.50
Wilks' lambda		0.38	0.75
Chi-square		365.36	108.78
df		12	5
p> 0.0001	0.0001		

To make more sense out of the results presented in Table XII, it is worth looking at how the three groups position themselves spatially in regards to Function 1 and 2. The solid black squares on Figure 5 illustrate group centroids, or measures of central spatial tendency, whereas the empty circles, triangles and crosses correspond to each observation for each group. As can be seen from Table VII and Figure 5, sexual dysfunction and social phobia occupy the two ends of Function 1 and while normal is in an intermediate position, it is very close to sexual dysfunction. On Function 2, the most extreme group is normal followed by social phobia and then by sexual dysfunction.

In addition, the valence of the coefficients gives extra information where a positive indicates a difference in degree among groups whereas a negative represents a difference in kind. For example, Social Avoidance and Distress is a measure that contributes

significantly to both functions but, while it has a positive effect on Function 1 (most extreme group is social phobia), it contributes negatively to Function 2 (most extreme group is normal). In other words, it plays an excluding role in Function 2.

Figure 5. Group Centroids for Social Phobia, Sexual Dysfunction and Normal Individuals



In order to test the validity of the discriminant function, results were reclassified by assigning participants to one of three groups based on their scores on the discriminating variables. The overall accuracy rate when comparing this new classification to the original group assignment reached 72.4% and for social phobic individuals, it reached 79.2%. See Table XIII for results.

Table XIII. Reclassification Results: Group Membership Predicted by Discrimination

Actual Clinical Problem	n	Social Phobia	Sexual Dysfunction	Normal
Social Phobia	106	84 (79.2%)	15 (14.2%)	7 (6.6%)
Sexual Dysfunction	164	20 (12.2%)	114 (69.5%)	30 (18.3%)
Normal	111	16 (14.4%)	17 (15.3%)	78 (70.3%)

Note : 72.4% of original observations are classified accurately.

6. Summary of results

Results show that none of the hypotheses were fully confirmed. In fact, reported levels of sexual experience (DSFI-experience) are different in social phobic men and women when compared to sexually dysfunctional and normal individuals. Specifically, whereas social phobic and sexually dysfunctional men report the same levels of sexual experience, normal men report more sexual experience than these two groups. This result fits the hypothesis, however, social phobic women report more sexual experience than their sexually dysfunctional counterparts and, therefore, contradicts the initial hypothesis.

Next, no difference in sexual satisfaction (DSFI-satisfaction) was anticipated when assessing social phobic and sexually dysfunctional individuals. Nonetheless, results do not show this pattern. In fact, social phobic individuals report similar levels of sexual satisfaction as normal individuals and higher levels than sexually dysfunctional individuals.

Also, it was anticipated that level of social anxiety (FNE, SAD, Interpersonal Sensitivity, Anxiety and Phobic Anxiety) would be similar in social phobic and sexually dysfunctional individuals while normal individuals would report significantly lower social anxiety than the other two groups. This hypothesis was not corroborated as different measures of this construct revealed almost identical patterns. In fact, social phobic individuals report more fear of negative evaluation (FNE), more social avoidance and distress (SAD), more interpersonal sensitivity, more anxiety and more phobic anxiety than sexually dysfunctional and than normal individuals. This contradicts the hypothesis, even tough, sexually dysfunctional individuals did report higher levels of interpersonal sensitivity than normal individuals.

Additional measures of social functioning (SAS-SR) show that social phobic individuals report significantly more problems than sexually dysfunctional and than normal individuals in areas related to work, home, leisure and family. However, social phobic and sexually dysfunctional individuals report the same amount of problems in their marital relationships. In addition, social phobic and sexually dysfunctional men report the same amount of problems in their friendships and more problems than normal men. In a similar trend, social phobic individuals report the highest levels of general psychological complaints (SCL-90-R) when compared to sexually dysfunctional and normal individuals. Finally, performing a discriminant analysis for group membership revealed that the three groups under investigation seem to represent three different constellations.

Discussion

The main objective of the present study was to test the link between social phobia and sexual problems in order to further clarify the construct validity of social phobia and to better understand the sexual functioning of social phobic individuals. The following questions were asked: (1) Do social phobic individuals report the same levels of sexual satisfaction and sexual experience as sexually dysfunctional individuals but less sexual satisfaction and experience than normal individuals? (2) Do social phobic individuals report the same levels of social anxiety as sexually dysfunctional individuals but more than normal individuals?

The aim of this last chapter is to interpret the present results by taking into account past literature and to suggest potential future research.

1. Outcome

1.1 Do social phobic individuals have more sexual problems than normal individuals?

Results from the present study demonstrate that, contrary to hypotheses, social phobic individuals are not more prone to sexual problems than normal individuals.

Specifically, when examining sexual satisfaction, discrepancies across groups are meaningful and suggest that social phobic individuals overall report substantially more sexual satisfaction than sexually dysfunctional individuals but sensibly the same level of satisfaction as normal individuals. A similar trend was found with social phobic women who report being as sexually experienced as normal individuals while being more experienced than sexually dysfunctional women. This contradicts findings suggesting that social phobic individuals are less sexually experienced than normal individuals (Leary and Dobbins, 1983; Greenberg and Stravynski, 1985; Ernst et al. 1993).

Furthermore, demographics show that social phobic and normal individuals are similar in their romantic lives as sensibly the same proportion of social phobic and normal individuals presently live with a significant other. This is supported by findings from

Bodinger et al. (2002) showing that social phobic and normal individuals do not significantly differ in their current relationship status.

Despite the similarities between social phobic and normal individuals, social phobic men nonetheless show a different pattern of sexual experience. In fact, contrary to social phobic women, men are as sexually experienced as sexually dysfunctional individuals and are less experienced than normal individuals. This finding is in accordance with results by Leary and Dobbins (1983), Greenberg and Stravynski (1985) and Bodinger et al. (2002). But, as mentioned previously, levels of sexual satisfaction suggest that although social phobic men are less sexually experienced than normal individuals they are just as sexually satisfied. These results are partially supported by Bodinger et al. (2002) who found that social phobic individuals report similar levels of sexual enjoyment as normal individuals and by Schiavi, (1992) Woody et al. (1994) and Derogatis and Meyer (1979) who found that sexually dysfunctional individuals report less sexual satisfaction than normal individuals. In addition, the present results fail to support findings by Leary and Dobbins (1983) and Bodinger et al. (2002) suggesting that social phobic individuals are less satisfied with their own sexual performance than normal individuals.

Another similarity between social phobic and sexually dysfunctional individuals is the level of marital problems (as measured by the SAS-SR). In fact, Dunn et al. (1999) found that sexual and marital problems are associated. Similarly, Schneier et al. (1994) found that social phobic individuals report more marital problems than normal individuals. Present results link these findings by suggesting that the level of marital functioning in these two groups appears to be statistically the same.

The conclusion that social phobic individuals are not more susceptible to having sexual problems than normal individuals will now be looked at qualitatively:

Most data show that statistically different means across groups also reflect meaningful differences and reliable results. Specifically, the present data on sexual satisfaction obtained from the normal group seems reliable as it is comparable to results from another study that administered the DSFI-satisfaction subscale. In fact, the normal sample reported a mean of 6.17/10 (Cho et al. 2004) and the present study found a score of 7.57/10.

In addition, the means for women's sexual experience are fairly low across the board as all three groups agreed to less than half of the 24 items of the sexual experience questionnaire (DSFI-experience). Consequently, although sexually dysfunctional women report about half of the sexual experiences reported by social phobic women, all three groups report fairly low levels. This suggests that, to start with, normal women report low levels of sexual experience and this may partially explain why not many significant differences were found across groups. In fact, Svikis et al. (1996) and Cho et al. (2004) have found that normal women report relatively low scores on the DSFI-experience subscale with mean scores of 12/24 and 6/24 respectively.

As for men, of the 24 questions from the sexual experience questionnaire (DSFI-experience), sexually dysfunctional and social phobic individuals endorse less than half of the total items whereas normal men report 67% of sexual experiences listed in this questionnaire. This represents a difference of six items between normal and social phobic individuals and of eight items between normal and sexually dysfunctional individuals. Qualitatively, these are considerable differences. In addition, a normative sample from another study showed that men report mean scores on the DSFI-experience subscale of 15/24 (Cho, Park, Park and Na, 2004) which is very similar to what was found in the present study and thus, cross-validates the results.

In summary, the sexual functioning of social phobic individuals is more similar to that of normal individuals than to that of sexually dysfunctional individuals and this is true quantitatively and qualitatively. These results do not fit the initial hypotheses and thus raise many questions, one of them being: Does social anxiety play a role in sexual problems?

1.2 Are social phobic and sexually dysfunctional individuals as socially anxious?

Levels of social anxiety across groups fail to support the initial hypothesis because social phobic individuals report higher levels of social anxiety than sexually dysfunctional individuals. Specifically, social phobic individuals report the most fear of being evaluated by others (FNE), the most distress in social situations (SAD) and the most interpersonal

sensitivity (SCL-90-R), followed by sexually dysfunctional and finally by normal individuals.

Initially, it was hypothesized that social phobic and sexually dysfunctional individuals would report similar levels of social anxiety, but this was mostly based on theoretical models that did not compare sexually dysfunctional and social phobic individuals concurrently. In line with this reasoning, one may consider that, as suggested by the present results, social phobic individuals report the most social anxiety, followed by sexually dysfunctional and then normal individuals. This does fit with literature suggesting that sexually dysfunctional individuals may report "above normal" levels of social anxiety (Kaplan, 1974; Masters and Johnson, 1970; McCabe and Cobain, 1998; Tignol et al. 2001), but as the present results suggest, not as high as social phobic individuals.

Qualitatively, the clinical cut-off point for a score to reflect important and impairing fear of negative evaluation by others (FNE) is 20/30 (Watson and Friend, 1969) and results show that only social phobic individuals are over this limit. Means for sexually dysfunctional and normal individuals are lower than for social phobic individuals but differ by four points which seems like a moderate but considerable difference. Second, scores on the social avoidance and distress scale (SAD) show that social phobic individuals overall report scores that are more than double and sometimes triple than the ones reported by normal individuals, in addition to scoring above the clinical cut-off point (20/28) (Watson and Friend, 1969) of what is considered important impairment involving distress and avoidance of social situations. A similar pattern is observed for sexually dysfunctional men whose scores are about double than those of normal men and half of those of social phobic men on the SAD global scale and behavioural avoidance subscale. Differences on the SAD-global and behavioural avoidance subscale for women are also meaningful as sexually dysfunctional and normal individuals score less than half than social phobic individuals do.

Finally, scores on the SCL-90-R subscales can range from zero to four which respectively mean "I have not been bothered by x in the last 7 days" and "I have been excessively bothered by x in the last 7 days". Qualitatively, social phobic individuals report being "a little" to "somewhat" bothered by their interpersonal sensitivity in the last week while sexually dysfunctional and normal individuals report being bothered from "not at all"

to "a little". Although these last two groups were found to be statistically different, a closer qualitative look suggests that differences are minimal. Consequently, only social phobic individuals differentiate themselves from the other two groups when it comes to interpersonal sensitivity.

In summary, social phobic individuals report the most severe levels of social anxiety out of all the groups under investigation. In addition, results show that on most measures of social anxiety, such as fear of negative evaluation, distress experienced in social situations and interpersonal sensitivity, sexually dysfunctional score higher than normal individuals. However, these scores do not match the ones of social phobic individuals. Hence, high levels of social anxiety do not seem to be a mediating factor in the theoretical model of sexual problems or sexual dysfunctions because social phobic individuals report the highest levels of social anxiety without being more prone to sexual problems than the norm, whereas sexually dysfunctional individuals report the most sexual difficulties but only report moderate levels of social anxiety. One may therefore argue that sexual problems in sexually dysfunctional individuals are linked to moderate (i.e., above normal) but not severe (as with social phobic individuals) levels of social anxiety.

2. Interpretation of results

2.1 How can one explain the similar sexual functioning of social phobic and normal individuals?

Contrary to predictions, results show that social phobia and sexual problems do not seem to be linked when it comes to sexual satisfaction overall and to sexual experience in women. Therefore, many questions are raised when contrasting the existing literature with the present results.

Existing theoretical models suggest that social anxiety comes from a mindset from which sexually dysfunctional individuals fear sexual inadequacy and performance. Furthermore, it is postulated that this mindset is analogous to the one of social phobic individuals (e.g., Beck and Barlow, 1984; Barlow, 1986). Nevertheless, the present results clash with this view as social phobic individuals report "normal" levels of sexual

functioning while reporting higher levels of social anxiety than sexually dysfunctional individuals. Hence, one may consider the possibility that an individual can be social phobic in one area of life (social area) whereas being fully functional in other areas (sexual area). This supports the view that social phobia is not "omnipresent" and is not a "mindset" that permeates all areas of life but is instead limited to certain situations. This supports the construct validity of social phobia because it shows that it is different from and does not overlap with sexual problems. In fact, many of the present results point to this:

First, discriminant function results support the validity of social phobia by suggesting that it is a different construct from sexual dysfunctions and normality. More specifically, social phobic, sexually dysfunctional and normal individuals may be distinguished from each other based on their profile of sexual functioning and social anxiety. In fact, avoidance and distress in social situations (SAD) and sexual satisfaction (DSFI-satisfaction) seem to play an important role in accurately discriminating groups. Social phobic individuals, for example, experience more avoidance and distress (SAD). Some of this avoidance and distress in social situations is also reported by the other groups but it does not seem to make up the main complaint. More specifically, each group reports a different pattern of complaints related to different degrees of social anxiety and sexual functioning. Therefore, differences in degree (i.e., social anxiety and sexual functioning) make up differences in kind (i.e., type of group). However, these results would benefit from replication with a different and independent sample. This is because when one sample is used to derive functions and then the same sample is tested, there is a risk of generating inaccurate (i.e., over accurate) "reclassification" results.

Second, despite the fact that social phobic individuals statistically differentiate themselves from the other two groups on measures of general anxiety and phobic anxiety, means across groups lie between 0 and 1, which means that all participants report that general anxiety and phobic anxiety have bothered them from "not at all" to "a little" in the last week. This seems hardly impairing and thus statistical differences do not seem clinically meaningful. Similarly, all means across groups for the global SCL-90-R are relatively low suggesting that none of the groups report important levels of global psychological complaints. More importantly, this supports the view that social phobic individuals feel uneasy in social situations (i.e., interpersonal sensitivity, distress in social

situations, fear of negative evaluation) while coping effectively and being unaffected in other spheres of life.

Third, additional analyses reveal that, as expected, social phobic individuals are prone to poorer social functioning than normal and sexually dysfunctional individuals. These findings are supported by results from Wittchen and Beloch (1996), Schneier et al. (1994), Wittchen, Fuetsch, Sonntag, Müller and Liebowitz (2000) and Stein, McQuaid, Laffaye, and McCahill (1999). For example, substantially more social phobic individuals report not working and report poorer global social adjustment when compared to sexually dysfunctional and normal individuals. This is in line with literature suggesting that social phobic individuals report more occupational difficulties than normal individuals partly because they may be less likely to engage in career promoting behaviours which generally involve some kind of interpersonal contact (Bruch, Fallon and Heimberg, 2003; Quilty, Ameringen, Mancini, Oakman and Farvolden, 2003; Phillips and Bruch, 1988).

In summary, the present results fail to support the theoretical model proposed by Barlow and his colleagues. As discussed in the introduction, there are important limitations with the conceptualisation and the testing of this model and this may partly explain why the present results clash with this view. Instead, social phobia and sexual problems do not seem to be linked by high levels of social anxiety and present results support the view that social phobia only affects social functioning. However, one must also consider that results may have been affected by the limitations of the present study which will be discussed in section 4.

2.2 How can one explain the gender differences in the sexual functioning of social phobic individuals?

As reviewed in the previous section, most of the present data shows that social phobic and normal individuals have comparable sexual functioning. Hence, at this point, one wonders why the sexual experience of social phobic men is similar to the one of sexually dysfunctional men whereas social women report "normal" sexual experience. An interpersonal view of social anxiety is suggested to clarify these results.

According to results, sexually dysfunctional men, but not women, avoid social situations more than normal individuals. It may therefore be that low sexual experience in men is associated to avoidance when faced with performance situations. By also considering that social phobic men are just as sexually experienced as sexually dysfunctional men, one may postulate that moderate and high levels of behavioural avoidance in social situations is a mediating variable in social and sexual difficulties in men. More globally, one may also hypothesize that for social phobic and sexually dysfunctional men, social anxiety is associated as much with a casual social relationship as with an intimate one as these can both be conceptualised as interpersonal contacts that are simply on different parts of a continuum of "social relationships". In fact, Stravynski et al. (1997) found that treating interpersonal difficulties in sexually dysfunctional single men resulted in improvement of sexual problems. These authors suggest that since reducing social anxiety results in reduced sexual problems, sexual dysfunctions in single men may be a form of relational social anxiety (i.e., social anxiety rooted in social exchanges) (Stravynski et al. 1997).

When taking into account the present results in combination with the available literature, one may argue that "above normal" levels of social anxiety in men are associated with social and sexual problems (seen as different levels of social relationships), one of these problems being lower than "normal" sexual experience. Furthermore, it may be that social phobic men report "normal" sexual satisfaction as this measure does not depend solely on social relationships but on a subjective evaluation done by the individual himself. Briefly, this interpersonal perspective conceptualises social anxiety as arising from exchanges with others (Stravynski et al. 1997) and contrasts with theoretical models proposed by Barlow (1986) and Beck and Barlow (1984) which are intrapsychic in nature.

Present findings may be further interpreted within a sexual socialisation context where men are not only expected to be active in their sexual relationships but are also expected to initiate sexual and dating behaviours with the opposite sex (Allgeier and McCormick, 1983; Reiss, 1967; Reiss and Reiss, 1990). In addition, literature suggests that men experience more difficulties than women in dating situations involving the opposite sex (Arkowitz, Hinton, Perl and Himadi, 1978) and this fits well with a stereotype where most of the responsibility in this area falls on men and not on women. In light of this

existing literature and the present results, one may argue that social phobic men are particularly sensitive to this stereotype since they fear embarrassment from performing inadequately in front of others and so they may refrain, more than the norm, from initiating and carrying out sexual behaviours which may be ultimately expressed as poor sexual experience. In fact, as described in the introduction, Zimbardo, Pilkonis and Norwood (1974) found that highly socially anxious individuals are: extremely self-conscious about respecting social rules, have difficulty with being the center of attention, have difficulty meeting new people and initiating new experiences. Therefore, it may be that sexual social roles are more embedded in social phobic than in normal individuals. So, social phobic men feel intense pressure in having to perform as this is what they are expected to do and one of the ways that this is expressed is "lower than normal" sexual experience.

Conversely, female stereotypes say that women should be more passive than men in sexual situations. Therefore, as there is little pressure to perform, social phobic women may not feel any major discomfort in this type of situation and hence they resemble normal women in their sexual functioning. In fact, although in the last 20 years there has been a trend where men and women tend to adopt similar sexual roles, it seems that sexual socialisation by parents and peers is still somewhat traditional (Lottes and Kuriloff, 1994), therefore suggesting that expectancies of sexual roles are different for men and women.

Briefly, one may postulate that for socialisation reasons, social phobic men, and not women, fear inadequate performance in sexual situations because they may generate negative reactions such as ridicule or rejection. Within this framework, where both social and sexual activities are seen as social exchanges, social phobic men may avoid sexual situations as a way of coping with discomfort. Conversely, women are not under the same pressure as men and therefore resemble normal women in their sexual experience.

In summary, results from this study suggest that sexual problems and social phobia are not strongly associated. The only attribute that sexually dysfunctional and social phobic individuals have in common is sub-normal sexual experience in men. Otherwise, social phobic individuals do not report sub-normal sexual functioning. Furthermore, the fact that social anxiety is reported only moderately by sexually dysfunctional individuals and in high levels by social phobic individuals suggests that it may be a mediating variable in sexual

dysfunctions when expressed in moderate levels. More specifically, in sexually dysfunctional and social phobic men, "higher than normal" levels of social anxiety may be associated with lack of sexual experience. Finally, social anxiety was found in different strengths within all three groups providing further evidence that this construct is a universal attribute.

The purpose of the theories discussed in this section is to better understand the present results. However, in order to do a comprehensive interpretation, one must also expose the major divergences between the present design and the reviewed literature as these may be partly responsible for the clash between the present results and the existing literature.

3. Methodological and conceptual issues

3.1 How can methodological issues account for results?

Failure to support initial hypotheses is probably best explained by more than one factor, one of these possibly being methodological differences across studies.

Globally, divergence in results may be better understood when one considers that no previous study has measured the sexual functioning of social phobic individuals with the DSFI as was done in the present study. For example, Bodinger et al. (2002) used a modified questionnaire originally designed by Schiavi et al. (1990) (in Bodinger et al. 2002). This instrument focuses mainly on sexual history instead of current sexual functioning. Similarly, Woody et al. (1994) administered the Sexual Interaction System Scale and the Dyadic Adjustment Scale which assesses several aspects of a sexual relationship in order to test the sexual functioning of sexually dysfunctional individuals. Briefly, although many studies refer to "sexual functioning", this construct is measured differently across studies.

More specifically, the limited literature on the sexual satisfaction of social phobic individuals suggests that this population should report less sexual satisfaction than normal individuals; however, the present results do not corroborate these findings. This may be partly because one of the only studies investigating sexual satisfaction did not select social phobic (as described in the DSM) and normal individuals (described as not meeting any

DSM criteria) like the present study did. In fact, the study by Leary and Dobbins (1983) looked at high socially anxious versus low socially anxious college students aged from 17 to 22 years old. Hence, not only was this sample different from the one in the present study but it was also limited to a student population of a restricted age range. Also, Bodinger et al. (2002) found that social phobic individuals are less satisfied with their sexual performance than normal individuals. The DSFI-satisfaction in the present study does inquire about this area with one question out of ten, so it may be that social phobic individuals are, in fact, specifically less satisfied with their sexual performance when compared to normal individuals but they may generally be sexually satisfied and this is why it did not show up in the present results.

In addition, the reviewed literature often lacks clear and proper definitions of the constructs under investigation which implies that the theoretical meanings are doubtful. In this context, it implies that constructs such as "anxiety" and "social anxiety" differ from study to study, which means that what is described as "social anxiety" in the present study may not be comparable to the "social anxiety" mentioned by authors in the existing literature.

Briefly, these issues may partly account for the mismatch between the present results and the initial hypotheses. Nevertheless, the present results are the product of a strong experimental design because: (1) Sexual functioning was assessed with a validated questionnaire which measures objective and subjective experiences, (2) sample selection was based on specific criteria and (3) constructs under investigation were clearly defined.

3.2 How can conceptual issues account for results?

Apart from methodological issues, conceptual issues are also at play when observing discrepancies between results and initial hypotheses. In fact, one may argue that the theories from which these hypotheses were formulated in the first place may be inaccurate. Most of the authors (Barlow, 1986; Beck and Barlow, 1984) who have proposed a theory for the link between social phobia and sexual problems were stimulated by a theoretical model based on "cognitive processes" where a certain "mindset" or "personality structure" colours all life events. So, it is suggested that sexually dysfunctional individuals

have the same "cognitive biases" as social phobic individuals and this is what explains their sexual difficulties. More specifically, this implies that the social phobic individual is affected by a "social phobic cognitive filter" in all situations as he views the world with a certain bias that he cannot rid himself of. This cognitive model suggests that these "distorted thoughts" cause anxiety and inadequate behaviours which in turn generate more distress. Hence, it implies a causal relationship where "social-phobic biases" cause anxiety and consequently, social phobia is maintained by these thoughts which are inherent to the individual.

Nevertheless, the present results clearly indicate that this is not the case since social phobic individuals report, for the most part, normal sexual functioning. This implies that social phobic individuals make discriminations from situation to situation and that there is no permanent and inherent "social phobic bias" (for a full review on this topic see Stravynski, Bond and Amado, 2004). More specifically, one may argue that, for social phobic individuals, the intimate domain is not as threatening as the social domain. This may be because in social settings, social phobic individuals fear judgement and inadequate performance and so they develop an interpersonal pattern of strategies to protect themselves, such as avoidance. However, in intimate settings there is collaboration and consent between two people and therefore the social phobic individual does not perceive danger but instead, feels probably quite safe since the significant other is on "his side" and is not there to judge him negatively. In other words, once there is intimacy, the environment ceases to be hostile. Hence, it is not surprising that this population does not report significant sexual dysfunctions and problems.

In addition and as discussed previously, the characteristics reported by social phobic individuals are not exclusive to them. In fact, normal and sexually dysfunctional individuals also report social anxiety although it is to a lesser degree. This also supports the view that social phobic individuals do not hold inbuilt and exclusive cognitive processes but instead share the same characteristics as other individuals but in different degrees.

In summary, these issues go to the heart of the nature of social phobia as present results suggest that (1) social phobic individuals have a highly distinctive way of coping in different settings instead of having an ingrained "social phobic" mindset that taints all life

areas, and (2) social phobic individuals do not report exclusive characteristics but instead report them in different degrees when compared to other groups implying differences in degree and not in kind.

4. Limitations, strengths and contributions

4.1 What are the limitations of the present study?

This study endeavoured to account for several measurement issues present in the current literature but also attempted to restrict the research design to clear parameters since this is the first study comparing the sexual functioning of social phobic, sexually dysfunctional and normal individuals. Now that more is known about the link between social phobia and sexual problems, there are factors in the present design that may be improved for subsequent studies:

The sample of the present study was only made up of urban heterosexual French speaking Montrealers which means that the interpretation of results is limited and may even be partially explained by this specific socio-cultural group, which means that results reflect the social norms and standards of this community. In fact, Beaulac et al. (1998) have found cultural differences in Montrealers regarding socio-sexual roles. Hence, one cannot generalise the results to the multiple ethnic groups living in Montreal. Next, although no participants in this study had undergone psychotherapy for their problems, treatment was offered following the assessment phase suggesting that the present sample was mostly, if not totally, made up of individuals seeking help. This implies that the present procedure may have pre-selected for a certain kind of participant who was ready to undertake treatment. For example, one may wonder if individuals reporting severe levels of social phobia, who experience important impairment in their social functioning, were not adequately represented in the present sample. This because such a sub-group possibly did not contact the research team to participate in the present study as participation included a subsequent treatment phase where individuals had to expose themselves to feared scenarios and this may have been too difficult for this population.

Furthermore, in choosing the measures, careful consideration was given to their validity. Nonetheless, these instruments have some drawbacks. Self-report questionnaires are widely used, are practical and provide a private way of gathering data, but they cannot prevent the possibility that participants may answer by trying to fit in with socially desirable norms instead of reporting their authentic objective and subjective experiences. This is especially relevant in this case as sexuality is a very private topic and social phobic individuals are often highly sensitive to social norms because they fear a public faux-pas. Hence, results showing that social phobic individuals report, for the most part, normal sexual functioning may be partly explained by a desire to fit in with sexual social norms and by a fear of embarrassment if the truth is reported (Merrill, Laux and Thornby, 1990). Moreover, all questionnaires focused on the individual's current state. This method was specifically adopted to prevent participants from reporting past experiences that may no longer be relevant to them. Nonetheless, asking individuals to report only about the passed week may be too restrictive. For example, if a social phobic individual has spent the last week at home, he may report that interpersonal sensitivity has not been a problem, therefore yielding a low score on the SCL-90-R, which is interpreted as low impairment in that area when in fact, the person may have been at home avoiding social contacts. This illustrates that although current state questionnaires may yield more reliable data, they may not appropriately account for the bigger picture.

In particular, the SAS-SR and the DSFI-experience have features that may restrict result interpretation although these questionnaires are validated. First, Platt (1981) challenged face validity of the SAS-SR by arguing that it may not measure what it claims to measure, that is, level of social adjustment in terms of conformity to societal expectations (Weissman and Bothwell, 1976). This author argues that the SAS-SR attempts to measure the fit between certain behaviours and an idealised conception of normality and does not take into account the personal and unique environment of each participant. For example, several of the interpersonal relationships maintained by social phobic individuals may deteriorate following psychological treatment as a consequence of applying newly learned assertiveness skills, which could in turn lead to a lower score on the SAS-SR. It is clear that this is not necessarily an indicator of social maladjustment but this is not reflected by results on the SAS-SR (Stravynski, Arbel, Lachance and Todorov, 2000). However, as it is

difficult to take into account every participant's detailed personal social life, the large sample in this study hopefully controlled for unique variations across environments. In addition, freshly learned assertiveness skills should not be an issue as no participant in the present sample had recently undergone psychotherapy.

Second, The DSFI sexual experience subscale does not provide information on whether the same behaviour has been repeated twice or more in the last two months. In fact, it provides information about the number of different behaviours that have been performed. In the instance where an individual only performs six sexual activities out of 24 but performs them many times, it will still yield a score of six out of 24; however, someone who performs all behaviours only once will generate a high score of 24. Briefly, this measure is limited because it does not allow assessing frequency of sexual behaviours but focuses more on different sexual experiences. This is not necessarily a weakness, but results should be interpreted accordingly.

Lastly, an attempt was made to clearly define the constructs under investigation. As reviewed before, the construct validity of social phobia is still murky in many respects; however, there is literature available on this topic. As for sexual dysfunctions described in the DSM, little is known about the construct validity of these problems. This is in fact a problem as it means that the validity of these clinical entities is presently unknown, so one must analyse the present data carefully.

Briefly, the sample selection for this study is restricted to a population that may have been too homogeneous, therefore, this factor itself may partly explain the results. Also, it is useful to administer current state questionnaires, but adding a measure covering a wider time span would be beneficial in order to understand the bigger picture. Finally, the nature of this study makes it so that one cannot control the fact that social phobic individuals may be shyer than the norm when reporting on sexual functioning, which in itself is delicate information. Despite these factors, the present study contributes to the present literature by its strengths which are examined in the next section.

4.2 What are the strengths and contributions of the present study?

As mentioned previously, this study aimed not only to contribute to the existing literature but also to account for some of the existing limitations in this field, such as lack of systematic testing of the link between social phobia and sexual problems, lack of controlled studies assessing the sexual functioning of social phobic individuals, and lack of studies using validated instruments. Hence, this section is dedicated to the strengths and contributions of this study.

One of the main contributions of the present study is the fact that this is the first comparison of the sexual functioning of social phobic and sexually dysfunctional individuals concurrently. Such a comparison adds to the knowledge about the sexual functioning of social phobic individuals because it provides information on how impaired this population is in this area. Literature suggests that social phobic individuals have more sexual problems than normal individuals, but it does not offer clear data about the severity and meaningfulness of these difficulties because there is no relevant clinical group (i.e., sexually dysfunctional group) to compare social phobic individuals to. So, as this design included two control groups, it permitted a comparison of social phobic individuals to a norm (i.e., normal group) and to another clinical group (i.e., sexually dysfunctional group) allowing, therefore, for an unambiguous understanding of where the population of interest is situated on the spectrum of social/sexual problems. Briefly, the main value of this feature is that the group under investigation is not examined in a vacuum where results stand alone with no benchmark to compare them to.

Also, the resources available for this research contributed to its design. The selection of participants was stringent and benefited from the expertise of several professionals. Participants underwent a pre-screening phone interview, and then were assessed by a psychologist, by a psychiatrist (if medication had to be stopped) and by a physician specialised in internal medicine (for the sexually dysfunctional group). Such a procedure maximises the odds of properly assigning participants to experimental groups.

Another strength is that the measures in the present study have acceptable validity as opposed to some studies in this area that have used instruments developed by the authors

and have not been adequately validated (e.g., McCabe and Cobain, 1998; Leary and Dobbins, 1983; Dunn et al. 1999; Figueira et al. 2001). Using validated measures implies that meaningful data is generated when questionnaires are scored and analysed. In addition, instruments were selected in a way that the collected data would provide information about objective experiences (DSFI-experience, SAD-behavioural avoidance) and subjective reports (DSFI-satisfaction, FNE, SAD-distress). While objective behaviour provides a clear measure of what is happening in a specific area of the individual's life, subjective information offers a measure of how the individual feels about a certain life domain. This is clinically relevant because if the individual reports being, satisfied, happy, fulfilled and/or relaxed about a pattern of behaviours that may objectively appear sub-optimal, then there may be no reason to be concerned about the person's psychological well-being.

Regarding statistical analyses, efforts were made to minimise data manipulation which can sometimes change data to the point where corrected results do not reliably reflect the initial data. In fact, an ANOVA model with mixed procedure was performed in order to automatically account for lack of homogeneity of variance, avoiding data manipulation and increasing flexibility. In addition, a discriminant function was carried out with the aim of examining the match between measures and experimental groups selected in the present study. This analysis yielded evidence suggesting that most of the selected instruments were able to reliably discriminate groups and therefore, measures appear to be pertinent.

Furthermore, several theoretical models suggest that social anxiety plays an important role in sexual problems and sexual dysfunctions and propose that this is linked to social phobia. The present study aimed to test this systematically by measuring different features of social anxiety in all three groups under investigation. This was achieved by using validated questionnaires and by attempting to measure current and relevant life situations of each participant. On the contrary, existing literature in this field had up to now been of a theoretical nature or very artificial in its experimental designs.

In summary, the present study is part of the empirical evidence testing the link between social phobia and sexual problems on conceptual and practical grounds. This was achieved by taking into consideration many of the weaknesses observed in the present

literature such as the ones described in this section. Given that, the limitations and strengths of this study have been covered, the next section presents the clinical implications of it.

5. What are the clinical implications of the present study?

First, present evidence shows that social phobic individuals are just as sexually satisfied as normal individuals. Second, results show that social phobic women are as sexually experienced as normal women, and social phobic men are as sexually experienced as sexually dysfunctional men. Taken together, this clinically means that even if social phobic men report less sexual experience than normal men, they are still sexually satisfied. This raises the question: Is it necessary to clinically address behaviour that is not at par with the norm if the individual is not bothered by it? One may argue that clinicians do not need to be overly concerned about the sexual experience of social phobic men as it does not seem to be associated with subjective dissatisfaction and, for that reason, it does not seem to have a major negative impact on their lives. However, one needs to be attentive to the sexual functioning of social phobic men as some may not be satisfied with their sub-normal levels of sexual experience.

Second, in conceiving sexual interactions as a more intimate form of a casual social interaction, clinicians can consider implementing therapies focusing on interpersonal difficulties when faced with individuals having sexual problems. In fact, Stravynski et al. (1997) found that this type of therapy works with sexually dysfunctional single men. Specifically, the present results suggest that behavioural avoidance in interpersonal situations (as measured by the SAD avoidance scale) may be a problem for sexually dysfunctional men but not women. Hence, it may be useful to focus on this area in order to improve sexual functioning in this population.

Lastly, the present evidence suggests that, for the most part, social phobic individuals are affected in one area of their lives: social functioning. In fact, they do not report important sexual problems, nor do they report severe global psychological problems, generalised anxiety or phobic anxiety. Then, therapy should aim its focus on the social functioning of social phobic individuals because they appear to perform quite well in other areas.

In summary, on the one hand, it seems that clinical professionals need not be overly concerned about the sexual functioning of social phobic individuals. On the other hand, clinicians may want to consider therapies focussed on interpersonal difficulties for a population who does report sexual problems, such as sexually dysfunctional individuals.

6. What are the recommendations for future research?

There are different avenues that can be explored to improve the understanding of the link between social phobia and sexual problems and to better delineate the sexual functioning of social phobic individuals. Results from the present study, for the most part, contradict existing literature as they suggest that: (1) Social phobic individuals report normal sexual functioning and (2) high levels of social anxiety are not associated to sexual problems.

Based on present results, what seems to discriminate social phobic individuals is a specific pattern of universal, non-exclusive features that are more or less pronounced when compared to other groups (e.g., higher social anxiety, lower behavioural exposure in social situations). Conceptually, social phobia may therefore be understood by looking at observable behaviours that make up a specific pattern instead of a social phobic "structure" or "mindset". Also, the present results suggest that the sexual functioning of social phobic individuals may be explained by specific gender sexual socialisation in addition to the fact that this group may be more sensitive to social norms than normal individuals. In conclusion, this dissertation proposes an interpersonal view of social phobia based on social exchanges where the sexual functioning of social phobic individuals may be understood, as with a normal population, by sexual socialisation.

Consequently, at this point in time, the present results seriously question the cognitive model. They suggest that social phobic individuals do not carry around a permanent "social phobic mindset" but respond to different situations with discernment. Similarly, the literature on the link between social phobia and sexual dysfunctions has failed to show a systematic association between the two constructs.

However, if one assumes that social phobia and sexual problems are linked, but this dissertation failed to uncover the association, how can detection of this link be improved?

In fact, the present study attempted to clarify the link between social phobia and sexual problems by mainly examining sexual experience, sexual satisfaction and social anxiety, as these seemed to be the most relevant features at this time. Nonetheless, the measures may have been too restrictive, so one may want to consider other features of sexual functioning such as: level of sexual knowledge, real frequency and desired frequency of sexual behaviours, sexual attitudes and how individuals view their role in sexual interactions (gender role). In fact, data on gender role may be particularly relevant since the present results suggest that social phobic men and women differ in their sexual experience and it is hypothesized that this may be related to differences in sexual roles. Presently, it seems that the questions surrounding the link between social and sexual problems have to be examined and tested more rigorously. This can be done by measuring a higher number of features of sexual functioning as well as by analysing the data in more detail so as to be able to examine the link with more preciseness, with a view to better delineate the construct of social phobia.

In addition, one may want to study the differences between social phobic individuals with and without sexual dysfunctions. As this dissertation suggests, it is not common for social phobic individuals to report sexual dysfunctions or problems, but it does occur. Hence, it would be interesting to examine how this sub-group compares to the "typical" social phobic individual. Do they show more severe levels of social phobia? Do they show differences in kind or in degree? Also, one may want to examine social phobic individuals who experienced sexual dysfunctions or problems with some partners but not others. This would allow one to further refine the "relational context" theory suggested in this dissertation. For example, if the relationships with sexual problems are the ones where the sexual partner is provocative and forward while the relationships with no sexual problems are linked to a supportive sexual partner, then the present theory would be supported.

Finally, as this dissertation is the only study to date suggesting that the sexual functioning of social phobic individuals resembles that of a normal group, replication of the results with other populations is important.

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Appendix A

Criteria for Social Phobia (DSM-IV-TR)

A. A marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing. Note: In children, there must be evidence of the capacity for age-appropriate social relationships with familiar people and the anxiety must occur in peer settings, not just in interactions with adults.

B. Exposure to the feared social situation almost invariably provokes anxiety, which may take the form of a situationally bound or situationally predisposed Panic Attack. Note: In children, the anxiety may be expressed by crying, tantrums, freezing, or shrinking from social situations with unfamiliar people.

C. The person recognizes that the fear is excessive or unreasonable. Note: In children, this feature may be absent.

D. The feared social or performance situations are avoided or else are endured with intense anxiety or distress.

E. The avoidance, anxious anticipation, or distress in the feared social or performance situation(s) interferes significantly with the person's normal routine, occupational (academic) functioning, or social activities or relationships, or there is marked distress about having the phobia.

F. In individuals under age 18 years, the duration is at least 6 months.

G. The fear or avoidance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition and is not better accounted for by another mental disorder (e.g., Panic With or Without Agoraphobia, Separation Anxiety, Body Dysmorphic, a Pervasive Developmental Problems, or Schizoid Personality).

H. If a general medical condition or another mental disorder is present, the fear in Criterion A is unrelated to it, e.g., the fear is not of Stuttering, trembling in Parkinson's disease, or exhibiting abnormal eating behavior in Anorexia Nervosa or Bulimia Nervosa.

Specify if: Generalized: if the fears include most social situations (also consider the additional category of Avoidant Personality)

le 17 décembre 1996

Appendix B
Certificates of Ethics

Docteur A. STRAVYNSKI
Centre de recherche Fernand-Seguin
Hôpital Louis-H. Lafontaine
Montréal

OBJET: PROJET DE RECHERCHE :11.96-97
«The treatment of social phobia from a interpersonal perspective: a controlled study.»

Docteur,

Lors de la réunion du comité exécutif du Conseil des médecins, dentistes et pharmaciens tenue le lundi 16 décembre 1996 furent étudiées les recommandations du comité d'éthique du 27 novembre 1996 concernant votre projet de recherche cité en exergue.

Les recommandations du comité d'éthique sont à l'effet de considérer votre projet de recherche comme étant conforme au point de vue éthique. Ces recommandations sont entérinées par le comité exécutif.

Espérant le tout conforme, nous vous prions, docteur, d'agréer l'expression de nos salutations distinguées.

Le président,

Benoit-L. Poulin, md

Raymond Morissette, md

C.C.: - Dr Frédéric Grunberg,prés. comité d'éthique
- Dr Hugues Cormier, coord. de la recherche
- M. Guy Varin, chef dépt pharmacie

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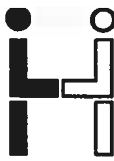

175/87

Le 29 mai 1987

Docteur Ariel Stravynski
Centre de recherche psychiatrique
Hôpital Louis-H. Lafontaine
Montréal

Docteur,

Lors de la réunion du comité exécutif du Conseil des médecins, dentistes et pharmaciens tenue le mercredi 27 mai 1987, a été entérinée la recommandation du comité d'éthique à l'effet de considérer comme étant conforme au point de vue éthique votre projet de recherche intitulé:

"The treatment of sexually dysfunctional men without partners".

Espérant le tout conforme, nous vous prions, docteur, d'agréer l'expression de nos salutations distinguées.

Le président, Le secrétaire,

André Gamache, m.d. Benoit-L. Poulin, m.d.

BLP/dd

C.C.: - docteur P. Lalonde

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293/90

Le 3 décembre 1990

Monsieur Ariel Stravynski
Centre de recherche psychiatrique
Hôpital Louis-H. Lafontaine

OBJET: Projet de recherche: Vers une nouvelle conception des dysfonctions sexeulles à travers le traitement des dysfonctions sexuelles de femmes sans partenaire.

Monsieur,

Lors de la réunion du comité exécutif du Conseil des médecins, dentistes et pharmaciens tenue le 30 novembre, fut discuté l'item en rubrique.

Le comité exécutif entérine la recommandation du comité d'éthique du 23 octobre 1990, et considère comme conforme au point de vue éthique votre projet de recherche.

Veuillez agréer, monsieur, l'expression de nos sentiments les plus distingués.

Le président,

Robert Langlois, m.d. Gérard Cournoyer, m.d.

C.C.: - président du comité d'éthique

RL/dd

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Appendix C
Sexual Experience and Satisfaction Subscales of the DSFI

Translated into the French language by Pierre Gauthier, M.Ps. and Linda Garceau, M.Ps.

Satisfaction sexuelle

Vous trouverez ci-dessous certaines affirmations concernant votre satisfaction au niveau sexuel. Indiquez si chaque affirmation s'applique à vous en marquant VRAI (1) ou FAUX (2) à chaque question.

1. Habituellement je suis satisfait(e) de mon (ma) partenaire sexuel(le)
2. Je trouve que je n'ai pas de relations sexuelles assez fréquemment.
3. Il n'y a pas assez de variété dans ma vie sexuelle.
4. Habituellement après un échange sexuel je me sens relaxé(e) et comblé(e).
5. Habituellement mes relations sexuelles ne durent pas assez longtemps.
6. Je n'ai pas d'intérêt pour la sexualité.
7. Habituellement j'ai un orgasme satisfaisant lors de l'échange.
8. Les caresses avant la pénétration sont habituellement très stimulantes pour moi.
9. Souvent je m'inquiète de ma performance sexuelle.
10. Habituellement mon (ma) partenaire et moi avons une bonne communication concernant la sexualité.

Expériences sexuelles

La section qui suit comprend une liste d'expériences sexuelles que les gens ont. Nous aimerions connaître lesquelles de ces expériences sexuelles vous avez vécues. Si vous avez eu l'expérience sexuelle décrite et cela au cours des 60 derniers jours, indiquez le chiffre 1 a côté de l'énoncé.

1. L'homme étendu sur la femme (vêtue).
2. Toucher et caresser les organes génitaux de votre partenaire.
3. Etreintes érotiques (vêtu).
4. Pénétration vaginale par l'arrière.
5. Vous faire caresser les organes génitaux par votre partenaire.
6. Stimulations orales mutuelles de vos organes génitaux.
7. Stimulations orales des organes génitaux de votre partenaire.
8. Pénétration en position côte à côte.
9. Vous faire embrasser des régions sensibles (non génitales) du corps.
10. Pénétration dans la position assise.
11. Masturbation seul(e).
12. L'homme qui embrasse les seins nus de sa partenaire.
13. Vous faire caresser la région anale.
14. Caresses des seins (vêtue).
15. Caresser la région anale de votre partenaire.
16. Pénétration lorsque la femme est en position supérieure.
17. Caresses mutuelles aux organes génitaux jusqu'à l'orgasme.
18. Vous faire caresser les organes génitaux de façon orale.
19. Vous déshabiller mutuellement.
20. French kiss.
21. Pénétration lorsque l'homme est en position supérieure.
22. Pénétration anale.
23. Baiser sur les lèvres.
24. Caresses des seins (nue).

Appendix D

Fear of Negative Evaluation Scale

Translated into the French language by the social phobia intervention team from Fernand-Séguin Research Center (Directed by Dr. Ariel Stravynski).

Échelle de peur du jugement négatif (FNE)

DIRECTIVES
Répondez par **1 (VRAI) ou 2 (FAUX)** à chacune des phrases suivantes.
Inscrivez la réponse qui correspond à votre **état actuel**.

		1 ou 2
1	Je me préoccupe rarement de paraître ridicule vis-à-vis des autres.	
2	Je me fais du souci au sujet de ce que les gens vont penser de moi, même si je sais que cela n'a aucune importance.	
3	Je deviens tendu(e) et agité(e) si je sais que quelqu'un est en train de m'évaluer.	
4	Je suis indifférent(e) même si je sais que les gens se font une impression défavorable de moi.	
5	Je me sens très bouleversé(e) quand j'ai un comportement social inapproprié.	
6	Je me préoccupe peu de ce que les gens importants pensent de moi.	
7	J'ai souvent peur de paraître ridicule ou de me montrer stupide.	
8	Je réagis très peu quand d'autres personnes me désapprouvent.	
9	J'ai souvent peur que les autres remarquent mes lacunes (points faibles).	
10	Je suis peu affecté(e) quand les autres me désapprouvent.	
11	Je m'attends au pire lorsque quelqu'un m'évalue.	
12	Je me soucie rarement des impressions que je fais sur autrui.	
13	J'ai peur que les autres ne m'approuvent pas.	
14	Je crains que les gens me critiquent.	
15	Les opinions des autres à mon sujet ne me tracassent pas.	
16	Je ne m'en fais pas nécessairement si je ne plais pas à quelqu'un.	
17	Quand je parle à des gens, je suis préoccupé(e) de ce qu'ils pensent de moi.	
18	Je pense qu'il est inévitable parfois de faire des erreurs en présence d'autrui, donc pourquoi m'en faire.	
19	Je suis habituellement préoccupé(e) par l'impression que je donne.	
20	Je suis très préoccupé(e) de ce que mes supérieurs pensent de moi.	
21	Si je sais que quelqu'un me juge, cela a peu d'effet sur moi.	
22	Je me préoccupe de savoir si les autres pensent que j'en vaux la peine.	
23	Je suis très peu affecté(e) au sujet de ce que les autres peuvent penser de moi.	
24	Je pense que quelquefois je suis trop concerné(e) par ce que les autres pensent de moi.	
25	Je suis souvent préoccupé(e) par le fait que je puisse dire ou faire des erreurs.	
26	Je suis souvent indifférent(e) aux opinions que les autres ont de moi.	
27	Habituellement, j'ai confiance que les autres ont une impression favorable de moi.	
28	Je me préoccupe du fait que les gens qui sont importants pour moi ne pensent pas grand chose de moi.	
29	Je broie du noir au sujet des opinions que mes ami(e)s se font de moi.	
30	Je deviens tendu(e) et agité(e) lorsque je sais que mes supérieurs m'évaluent.	

Appendix E
Social Avoidance and Distress Scale (SAD)

Translated into the French language by the social phobia intervention team from Fernand-Séguin Research Center (Directed by Dr. Ariel Stravynski).

Échelle d'évitement et d'anxiété sociale (SAD)

DIRECTIVES
Répondez par **1 (VRAI) ou 2 (FAUX)** à chacune des phrases suivantes.
Inscrivez la réponse qui correspond à votre **état actuel**.

		1 ou 2
1	Je me sens bien même dans des rencontres sociales inhabituelles.	
2	J'essaie d'éviter les situations qui m'obligent à être très sociable.	
3	Il m'est facile de relaxer quand je suis avec des étrangers.	
4	Je n'ai pas de désir particulier d'éviter les gens.	
5	Je trouve souvent les rencontres sociales dérangeantes.	
6	Je me sens habituellement calme et confortable lors des rencontres sociales.	
7	Je suis habituellement à l'aise de parler à quelqu'un de l'autre sexe.	
8	J'essaie d'éviter de parler aux gens à moins que je ne les connaisse bien.	
9	Si j'ai la chance de rencontrer des nouvelles personnes, j'en profite.	
10	Je me sens souvent nerveux(se) et tendu(e) dans des rencontres sociales où les deux sexes sont présents.	
11	Je suis habituellement nerveux(se) avec les gens à moins de bien les connaître.	
12	Je me sens ordinairement détendu(e) quand je suis avec un groupe de personnes.	
13	Je veux souvent fuir les gens.	
14	Je me sens d'habitude inconfortable quand je suis avec un groupe de personnes que je ne connais pas.	
15	Je me sens habituellement détendu(e) quand je rencontre quelqu'un pour la première fois.	
16	Etre présenté(e) à des gens me rend tendu(e) et nerveux(se).	
17	Même si une pièce est remplie d'étrangers, je vais quand même y entrer.	
18	J'évite de m'avancer et de me joindre à un groupe de personnes.	
19	Quand mon patron veut me parler, j'accepte volontiers.	
20	Je me sens souvent tendu(e) quand je suis avec un groupe de personnes.	
21	J'ai tendance à me tenir à l'écart des gens.	
22	Il m'est égal de parler à des gens dans des parties ou des rencontres sociales	
23	Je suis rarement à l'aise dans un grand groupe de personnes.	
24	J'invente souvent des excuses afin d'éviter des engagements sociaux.	
25	Je prends souvent la responsabilité de présenter les gens les uns aux autres.	
26	J'essaie d'éviter les rencontres sociales formelles.	
27	Je remplis habituellement mes engagements sociaux quels qu'ils soient.	
28	Je trouve facile de me détendre avec d'autres personnes.	

Appendix F

Symptoms Check-List-Revised (SCL-90-R)

Translated into the French language by Fabienne Fortin and Ginette Coutu-Wakulczyk

Items corresponding to the Interpersonal Sensitivy subscale are: 6,21,34,36,37,41,61,69,73
Items corresponding to the Anxiety subscale are: 2, 17, 23, 33, 39, 57, 72, 78, 80, 86
Items corresponding to the Phobic Anxiety subscale are: 13, 25, 47, 50, 70, 75, 82

Voici une liste de problèmes dont se plaignent parfois les gens. Lisez attentivement chaque énoncé et indiquez le chiffre qui décrit le mieux JUSQU'A QUEL POINT AVEZ-VOUS ETE INCOMMODE(E) PAR CE PROBLEME DURANT LES SEPT (7) DERNIERS JOURS, INCLUANT AUJOURD'HUI?

Répondez par:

0 = Pas du tout
1 = Un peu
2 = Passablement
3 = Beaucoup
4 = Excessivement

1. Maux de tête
2. Nervosité ou impressions de tremblements intérieurs
3. Pensées désagréables répétées dont vous ne pouvez pas vous débarrasser.
4. Faiblesses ou étourdissements
5. Diminution du plaisir ou de l'intérêt sexuel.
6. Envie de critiquer les autres.
7. L'idée que quelqu'un peut contrôler vos pensées
8. L'impression que d'autres sont responsables de la plupart de vos problèmes.
9. Difficulté à vous rappeler certaines choses.
10. Inquiétude face à la négligence et l'insouciance
11. Facilement irrité(e) et contrarié(e).
12. Douleurs à la poitrine ou cardiaques.
13. Peur dans les espaces ouverts ou sur la rue.
14. Sentiment de vous sentir au ralenti ou de manquer d'énergie.
15. Penser à vous enlever la vie.
16. Entendre des voix que les autres n'entendent pas.
17. Des tremblements.
18. Le sentiment que vous ne pouvez pas avoir confiance en personne.
19. Manque d'appétit.
20. Pleurer facilement.
21. Timidité ou maladresse avec les personnes du sexe opposé.
22. Sentiment d'être pris(e) au piège.
23. Soudainement effrayé(e) sans raison.
24. Crises de colère incontrôlable.
25. Peur de sortir seul(e) de la maison.

26. Vous blâmer vous-même pour certaines choses.
27. Douleurs au bas du dos.
28. Sentiment d'incapacité de faire un travail jusqu'au bout.
29. Sentiment de solitude.
30. Sentiment de tristesse (avoir les "bleus").
31. Vous en faire à propos de tout et de rien.
32. Manque d'intérêt pour tout.
33. Vous sentir craintif(ve).
34. Vous sentir facilement blessé(e) ou froissé(e)
35. L'impression que les autres sont au courant de vos pensées intimes.
36. Sentiment que les autres ne vous comprennent pas ou ne sont pas sympathisants.
37. Sentiment que les gens ne sont pas aimables ou ne vous aiment pas.
38. Faire les choses très lentement pour vous assurer qu'elles sont bien faites.
39. Avoir des palpitations ou sentir votre coeur battre très vite et fort.
40. Nausées, douleurs ou malaises à l'estomac.
41. Vous sentir inférieur(e) aux autres.
42. Douleurs musculaires.
43. Sentiment qu'on vous observe ou qu'on parle de vous.
44. Difficulté à vous endormir.
45. Besoin de vérifier et de revérifier ce que vous faites.
46. Difficulté à prendre des décisions.
47. Peur de prendre l'autobus, le métro ou le train.
48. Difficulté à prendre votre souffle.
49. Bouffées de chaleur ou des frissons.
50. Besoin d'éviter certains endroits, choses ou activités parce qu'ils vous font peur.
51. Des blancs de mémoire.
52. Engourdissements/picotements dans certaines parties du corps (ex: bras, jambes, figure)
53. Une boule dans la gorge.
54. Sentiment de pessimisme face à l'avenir.
55. Difficulté à vous concentrer.
56. Sentiment de faiblesse dans certaines parties du corps.
57. Sentiment de tension ou de surexcitation.
58. Sensations de lourdeur dans les bras et les jambes.
59. Pensées en relation avec la mort.
60. Trop manger.
61. Vous sentir mal à l'aise lorsqu'on vous observe ou que l'on parle de vous.
62. Avoir des pensées qui ne viennent pas de vous.
63. Envie de frapper, injurier ou faire mal à quelqu'un.
64. Vous réveiller tôt le matin.
65. Besoin de répéter les mêmes actions telles que toucher, compter, laver.
66. Avoir un sommeil agité ou perturbé.
67. Envies de briser ou de fracasser des objets
68. Avoir des idées ou des opinions que les autres ne partagent pas.
69. Tendance à l'anxiété en présence d'autres personnes.
70. Vous sentir mal à l'aise dans des foules (ex. centre d'achat ou cinéma).
71. Sentiment que tout est un effort.
72. Moments de terreur et de panique.
73. Sentiment d'inconfort d'avoir à boire ou à manger en public.

74. Vous disputer souvent.
75. Nervosité lorsque vous êtes laissé seul(e).
76. Vous n'êtes pas reconnu(e) à votre juste valeur.
77. Sentiment de solitude même avec d'autres.
78. Vous sentir tellement tendu(e) que vous ne pouvez rester en place.
79. Sentiment d'être bon(ne) à rien.
80. Sentiment qu'il va vous arriver quelque chose de néfaste.
81. Crier et lancer des objets.
82. Peur de perdre connaissance en public.
83. Sentiment que les gens vont profiter de vous si vous les laissez faire.
84. Des pensées sexuelles qui vous troublent beaucoup.
85. L'idée que vous devriez être puni(e) pour vos péchés.
86. Pensées ou visions qui vous effraient.
87. L'idée que votre corps est sérieusement atteint.
88. Ne jamais vous sentir près de quelqu'un d'autre.
89. Avoir des sentiments de culpabilité.
90. L'idée que votre esprit (tête) est dérangé.

Appendix G

The Social Adjustment Scale (SAS-SR)

Translated into the French language by Andrée Montreuil and Alain Lesage

Pour savoir comment les choses ont été pour vous depuis 1 mois, nous aimerions que vous répondiez à quelques questions touchant votre travail, vos loisirs, et votre vie de famille. Il n'y a pas de bonnes ou de mauvaises réponses à ces questions.

Section 1: Travail à l'extérieur du domicile (Work outside home)

1. De façon générale, avez-vous un emploi rémunéré pour plus de 15 heures par semaine?
   1=OUI 2=NON

2. Dans le dernier mois, avez-vous travaillé?
   1=OUI 2=NON

3. Combien de jours de travail avez-vous manqués durant le dernier mois?
   1=aucun
   2=quelques jours
   3=la moitié du temps
   4=plus de la moitié du temps
   5=j'étais en vacances

4. Avez-vous été capable de faire votre travail comme il faut durant le dernier mois?
   1=très bien
   2=bien fait mais avec quelques petits problèmes
   3=j'ai eu besoin d'aide et j'ai eu des problèmes à peu près la moitié du temps
   4=j'ai eu des problèmes la plupart du temps
   5=j'ai eu constamment des problèmes

5. Durant le dernier mois, vous êtes-vous senti(e) gêné(e) parce que votre travail n'était pas bien fait?
   1=je ne me suis jamais senti(e) gêné(e) ou embarassé(e)
   2=je me suis senti(e) gêné(e) une ou deux fois.
   3=je me suis senti(e) gêné(e) la moité du temps.
   4=je me suis senti(e) gêné(e) la plupart du temps
   5=je me suis constamment senti(e) gêné(e)

6. Avez-vous eu des chicanes au travail depuis 1 mois?
   1=aucune
   2=seulement quelques petites chicanes
   3=2 ou 3 chicanes
   4=plusieurs chicanes
   5=constamment

7. Vous êtes-vous senti mal, préoccupé(e) ou inconfortable pendant que vous étiez au travail depuis 1 mois?

1=jamais
2=1 ou 2 fois
3=la moitié du temps
4=la plupart du temps
5=constamment

8. Avez-vous trouvé que votre travail était intéressant durant le dernier mois?

1=presque toujours
2=la plupart du temps sauf 1 ou 2 fois
3=la moitié du temps
4=presque jamais
5=jamais

Section 2: Ecole (Work as a student)

9. Combien de fois allez-vous à l'école (école spéciale) dans une semaine?
__ jour(s) (De 0 à 7)

10. Combien de jours avez-vous manqué l'école durant le dernier mois?

1=presque jamais
2=quelques jours
3=la moitié du temps
4=plus de la moitié du temps
5=incapable d'y aller dans le dernier mois
6=j'étais en vacances

11. Avez-vous été capable de travailler comme il faut à l'école durant le dernier mois?

1=j'ai très bien travaillé
2=j'ai bien travaillé mais avec quelques petites difficultés
3=j'ai eu besoin d'aide et j'ai eu des difficultés à peu près la moitié du temps
4=j'ai eu des difficultés la plupart du temps
5=j'ai eu constamment des difficultés

12. Avez-vous eu des chicanes à l'école depuis un mois?
1=je n'ai eu aucune chicane et je me suis très bien entendu
2=je me suis généralement bien entendu mais j'ai eu quelques petites chicanes
3=j'ai eu des chicanes à quelques reprises
4=j'ai eu plusieurs chicanes
5=j'étais toujours en chicane

13. Vous êtes-vous senti(e) mal, préoccupé(e), ou inconfortable pendant que vous étiez à l'école depuis 1 mois?

1=jamais
2=1 ou 2 fois
3=la moitié du temps
4=la plupart du temps
5=constamment

14. Avez-vous trouvé que c'était intéressant d'aller à l'école durant le dernier mois?
1=presque toujours
2=la plupart du temps sauf 1 ou 2 fois
3=la moitié du temps
4=presque jamais
5=jamais

Section 3: Travail à la maison (Work at home)
15. Combien de fois avez-vous fait des tâches ménagères à la maison depuis 1 mois?
1=tous les jours
2=presque tous les jours
3=environ la moitié du temps
4=en général, je n'ai pas fait de petits travaux
5=j'ai été incapable de faire des petits travaux

16. Durant le dernier mois, avez-vous réussi à bien faire vos tâches ménagères?
1=j'ai fait du bon travail
2=j'ai fait du bon travail mais avec quelques difficultés
3=j'ai eu besoin d'aide pour faire mon travail et je ne l'ai pas bien fait environ la moitié du temps
4=pas travaillé

17. Durant le dernier mois, avez-vous été gêné(e), embarassé(e) parce que votre travail à la maison n'était pas bien fait?
1=je ne me suis jamais senti(e) gêné(e)
2=je me suis senti(e) gêné(e) 1 ou 2 fois
3=je me suis senti(e) gêné(e) la moitié du temps
4=je me suis senti(e) gêné(e) la plupart du temps
5=je me suis constamment senti(e) gêné(e)

18. Durant le dernier mois, avez-vous eu des chicanes ou des disputes avec des voisins, des vendeurs dans un magasin ou d'autres gens que vous ne connaissez pas beaucoup?
1=je n'ai eu aucune chicane et je me suis très bien entendu
2=je me suis généralement bien entendu mais j'ai eu quelques petites chicanes
3=j'ai eu des chicanes à quelques reprises
4=j'ai eu plusieurs chicanes
5=j'étais toujours en chicane

19. Durant le dernier mois, vous êtes-vous senti mal, préoccupé(e), inconfortable pendant que vous faisiez vos travaux dans la maison?
1=jamais
2=1 ou 2 fois
3=la moitié du temps
4=la plupart du temps
5=constamment

20. Avez-vous trouvé que vos tâches ménagères étaient intéressantes durant le dernier mois?

1=presque toujours
2=la plupart du temps sauf 1 ou 2 fois
3=la moitié du temps
4=presque jamais
5=jamais

Section 4: Amis extérieurs (Friendships)

21. A combien d'ami(e)s avez-vous parlé au téléphone depuis 1 mois?
__ ami(e)s

22. Combien d'ami(e)s avez-vous rencontré(e)s depuis un mois?
__ ami(e)s

23. Durant le dernier mois, avez-vous été capable de parler à un(e) ami(e) de vos sentiments et de vos problèmes?
1=je me suis senti(e) capable de parler de mes sentiments les plus personnels
2=j'ai généralement été capable de parler de mes sentiments et de mes problèmes
3=j'ai été incapable de parler de mes sentiments et de mes problèmes la moitié du temps
4=j'ai généralement été incapable de parler de mes sentiments et de mes problèmes
5=je n'ai jamais été capable de parler de mes sentiments

24. Durant le dernier mois, combien de fois avez-vous rencontré des ami(e)s pour faire des choses ensemble? (visites, cinéma, restaurant)

1=plus que 6
2=5 à 6 fois
3=3 à 4 fois
4=1 ou 2 fois
5=jamais

25. Avez-vous eu des chicanes avec vos ami(e)s depuis un mois?
1=je n'ai eu aucune chicane et je me suis très bien entendu(e)
2=je me suis généralement bien entendu(e) mais j'ai eu quelques petites chicanes
3=J'ai eu des chicanes à quelques reprises
4=j'ai eu plusieurs chicanes
5=j'étais toujours en chicane

26. Est-ce qu'un(e) ami(e) vous a fait de la peine ou vous a fâché depuis 1 mois?

1=OUI 2=NON

27. Combien de temps cela vous a pris pour vous en remettre?

1=quelques heures
2=quelques jours
3=1 semaine
4=ça va me prendre des mois pour m'en remettre

Section 5: Temps libres et sociaux (Social and Leisure)

28. Vous êtes-vous senti(e) seul(e) ou auriez-vous aimé avoir plus d'ami(e)s durant les derniers mois?

1=non
2=quelques fois
3=la moitié du temps
4=généralement
5=je me suis toujours senti(e) seul(e)

29. Pendant le dernier mois, combien de temps avez-vous passé à des activités de loisirs, ou de passe-temps (hobby, bricolage, sport, lecture, etc.)?

1=la plupart de mes temps libres tous les jours
2=la moitié de mes temps libres
3=j'ai passé peu de temps à faire des hobbys
4=je n'ai pas fait de hobby mais j'ai regardé la TV
5=je n'ai pas fait de hobby et je n'ai pas regardé la TV

30. Vous êtes-vous senti(e) mal à l'aise ou gêné(e) avec les gens depuis un mois?
1=je me suis toujours senti(e) confortable
2=parfois je me suis senti(e) mal à l'aise mais j'ai pu relaxer après quelques instants
3=la moitié du temps inconfortable
4=généralement inconfortable
5=toujours inconfortable
6=NAP (pas vu personne)

31. Vous êtes-vous ennuyé(e) durant vos temps libres depuis 1 mois?

1=jamais
2=généralement je ne me suis pas ennuyé(e)
3=la moitié du temps je me suis ennuyé(e)
4=la plupart du temps je me suis ennuyé(e)
5=je me suis toujours ennuyé(e)

Section 6: Famille étendue (Extended family)

32. Avez-vous vu des membres de votre famille depuis 1 mois? (père, mère, frère, soeur, enfants, beaux-frères, etc.)
1=OUI 2=NON

33. Avez-vous eu des chicanes avec quelqu'un de votre famille depuis un mois?
1=nous nous sommes toujours très bien entendus
2=nous nous sommes très bien entendus mais il y a eu quelques petites chicanes
3=j'ai eu des chicanes à quelques reprises
4=j'ai eu plusieurs chicanes
5=j'étais toujours en chicane

34. Durant le dernier mois, avez-vous été capable de parler de vos problèmes à quelqu'un de votre famille?
1=je me suis senti(e) capable de parler de mes sentiments les plus personnels
2=j'ai généralement été capable de parler de mes sentiments et de mes problèmes
3=j'ai été incapable de parler de mes sentiments et de mes problèmes la moitié du temps
4=j'ai généralement été incapable de parler de mes sentiments et de mes problèmes
5=je n'ai jamais été capable de parler de mes sentiments

35. Durant le dernier mois, vous êtes-vous parfois arrangé(e) pour éviter de rencontrer quelqu'un de votre famille?
1=je les ai rejoint régulièrement
2=j'ai rejoint au moins 1 fois une personne de ma famille
3=j'ai attendu que les gens de ma famille me rejoignent
4=je les ai évités mais eux m'ont rejoint
5=je n'ai aucun contact avec aucun des membres de ma famille

36. Au cours du dernier mois, avez-vous été dépendant(e) des membres de votre famille pour avoir de l'aide, des conseils ou de l'argent?
1=je n'ai jamais eu à dépendre d'eux
2=je n'ai généralement pas eu à dépendre d'eux
3=la moitié du temps j'ai dépendu d'eux
4=la plupart du temps, j'ai été dépendant(e) d'eux
5=j'ai été complètement dépendant(e) d'eux

37. Durant le dernier mois, avez-vous eu le goût de faire le contraire de ce que votre famille voulait, simplement pour les fâcher?
1=jamais
2=1 ou 2 fois
3=la moitié du temps
4=la plupart du temps
5=constamment

38. Durant le dernier mois, avez-vous été préoccupé(e) ou inquiet(e) sans raison au sujet des membres de votre famille?
1=jamais
2=1 ou 2 fois
3=la moitié du temps
4=la plupart du temps
5=constamment

39. Au cours du dernier mois, vous est-il arrivé de penser que vous aviez été injuste ou pas à la hauteur avec les membres de votre famille?
1=je n'ai jamais pensé cela
2=généralement je n'ai pas pensé cela
3=la moitié du temps j'ai pensé cela
4=la plupart du temps, j'ai pensé cela
5=j'ai constamment pensé cela

40. Au cours du dernier mois, vous est-il arrivé de penser que des membres de votre famille avaient été injustes ou vous avaient laissé(e) tomber?

1=je n'ai jamais pensé cela
2=généralement je n'ai pas pensé cela
3=la moitié du temps j'ai pensé cela
4=généralement j'ai pensé cela
5=je leur en veux beaucoup de m'avoir laissé tomber

Section 7 : Noyau familial (Family unit)

41. Avez-vous déjà été marié(e) ou avez-vous vécu en union libre?
1=OUI 2=NON

42. Durant le dernier mois, avez-vous été préoccupé(e) ou inquiet(e) sans raison au sujet de votre conjoint(e) ou de vos enfants même si vous ne vivez pas avec eux?

1=jamais
2=1 ou 2 fois
3=la moitié du temps
4=la plupart du temps
5=constamment
6=NAP (conjoint(e) et/ou enfants décédé(e)s)

43. Au cours du dernier mois, vous est-il arrivé de penser que vous aviez été injuste ou pas à la hauteur avec votre conjoint(e) ou un de vos enfants?

1=je n'ai jamais pensé cela
2=généralement je n'ai pas pensé cela
3=la moitié du temps j'ai pensé cela
4=la plupart du temps, j'ai pensé cela
5=j'ai constamment pensé cela

44. Au cours du dernier mois, vous est-il arrivé de penser que votre conjoint(e) ou un de vos enfants avaient été injustes ou vous avaient laissé(e) tomber?

1=je n'ai jamais pensé cela
2=généralement je n'ai pas pensé cela
3=la moitié du temps j'ai pensé cela
4=la plupart du temps, j'ai pensé cela
5=j'ai constamment pensé cela

Section 8 : Marital (Marital)

45. Avez-vous présentement un(e) conjoint(e) avec qui vous vivez?
1=OUI 2=NON

46. Avez-vous eu des chicanes avec votre conjoint(e) depuis un mois?
1=nous nous sommes toujours très bien entendu
2=nous nous sommes très bien entendu mais il y a eu quelques petites chicanes
3=j'ai eu des chicanes à quelques reprises
4=j'ai eu plusieurs chicanes
5=j'étais toujours en chicane

47. Durant le dernier mois, avez-vous été capable de parler de vos sentiments ou de vos problèmes à votre conjoint(e)?
1=je me suis senti(e) capable de parler de mes sentiments les plus personnels
2=j'ai généralement été capable de parler de mes sentiments et de mes problèmes
3=j'ai été incapable de parler de mes sentiments et de mes problèmes la moitié du temps
4=j'ai généralement été incapable de parler de mes sentiments et de mes problèmes
5=je n'ai jamais été capable de parler de mes sentiments

48. Durant le dernier mois, avez-vous insisté pour toujours tout faire à votre façon?
1=je n'ai pas insisté pour tout faire à ma façon
2=je n'ai généralement pas insisté pour tout faire à ma façon
3=la moitié du temps, j'ai insisté pour faire les choses à ma façon
4=j'ai généralement insisté pour faire les choses à ma façon
5=j'ai constamment insisté pour faire les choses à ma façon

49. Durant le dernier mois, avez-vous eu l'impression que votre conjoint(e) vous donnait toujours des ordres, vous "bossait"?
1=jamais
2=1 ou 2 fois
3=la moitié du temps
4=la plupart du temps
5=constamment

50. Durant le dernier mois, jusqu'à quel point vous êtes-vous senti(e) dépendant(e) de votre conjoint(e)?
1=j'étais indépendant(e)
2=j'étais généralement indépendant(e)
3=j'étais un peu dépendant(e)
4=j'étais généralement dépendant(e)
5=j'ai été dépendant(e) de mon (ma) conjoint(e) pour tout

51. Comment vous êtes-vous senti(e) par rapport à votre conjoint(e) depuis un mois?
1=j'ai toujours ressenti de l'affection
2=j'ai généralement ressenti de l'affection
3=la moitié du temps je ne l'aimais pas et l'autre moitié je ressentais de l'affection
4=la plupart du temps je ne l'aimais pas
5=pendant tout le mois je ne l'aimais pas

52. Durant le dernier mois, avez-vous eu des problèmes (comme des douleurs) pendant vos relations sexuelles avec votre conjoint?
1=aucun
2=une ou 2 fois
3=la moitié du temps
4=la plupart du temps
5=constamment

Section 9: Parent (Parental)

53. Avez-vous eu un ou des enfants qui vivaient avec vous durant le dernier mois?
1=OUI 2=NON

54. Dans le dernier mois, vous êtes-vous intéressé(e) à ce que vos enfants faisaient à l'école, dans leurs loisirs, etc. ?
1=j'étais toujours intéressé(e) et je participais activement
2=j'étais généralement intéressé(e)
3=j'étais intéressé(e) la moitié du temps mais pas l'autre moitié.
4=je n'avais généralement pas d'intérêt
5=je n'avais jamais d'intérêt

55. Durant le dernier mois, avez-vous été capable de parler à vos enfants et de les écouter (seulement les enfants de plus de deux ans)?
1=j'étais toujours capable de communiquer avec eux
2=j'étais généralement capable de communiquer avec eux
3=j'étais capable de communiquer avec eux environ la moitié du temps
4=j'étais en général incapable de communiquer avec eux
5=j'étais absolument incapable de communiquer avec eux
6=non applicable: aucun enfant de plus de 2 ans

56. Dans le dernier mois, comment vous êtes-vous entendu(e) avec vos enfants?
1=je n'ai eu aucune chicane et je me suis très bien entendu(e)
2=je me suis généralement bien entendu(e) mais j'ai eu quelques petites chicanes
3=j'ai eu des chicanes à quelques reprises
4=j'ai eu plusieurs chicanes
5=j'étais toujours en chicane

57. Comment vous êtes-vous senti(e) par rapport à vos (votre) enfant(s) depuis un mois?
1=j'ai toujours ressenti de l'affection
2=j'ai généralement ressenti de l'affection
3=la moitie du temps je ne l'aimais pas et l'autre moitié je ressentais de l'affection
4=la plupart du temps je ne l'aimais pas
5=pendant tout le mois je ne l'aimais pas

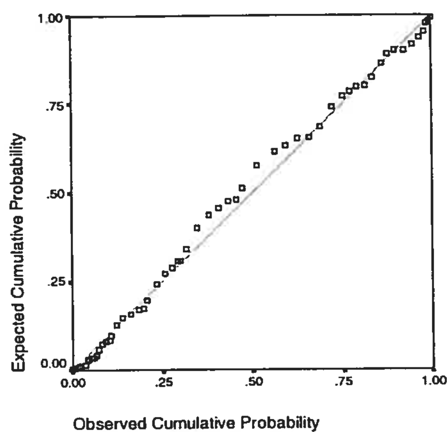
Section 10 : Finances (Economic)
* this item is used for calculation of the global score only

58. Avez-vous eu assez d'argent pour vivre durant le dernier mois?
1=assez d'argent
2=généralement assez d'argent
3=la moitié du temps j'en ai manqué mais je n'ai pas eu à en emprunter
4=généralement pas assez et j'ai été obligé(e) d'en emprunter
5=j'ai eu de gros problèmes de finances

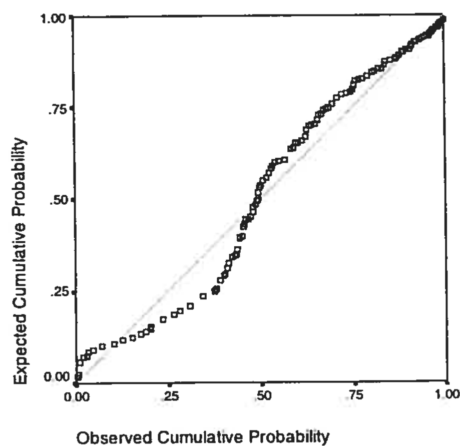
Appendix H

Assessment of Normality for Dependent Variables

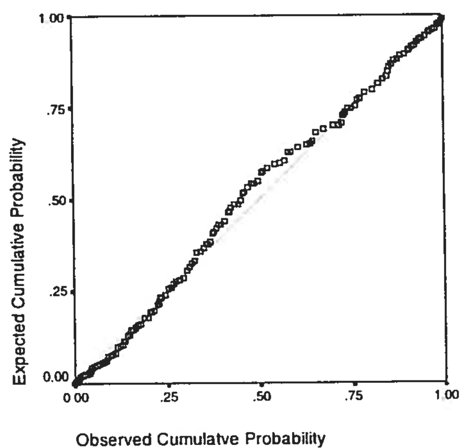
DSFI- satisfaction: Normal P-P Plot of standardised residual



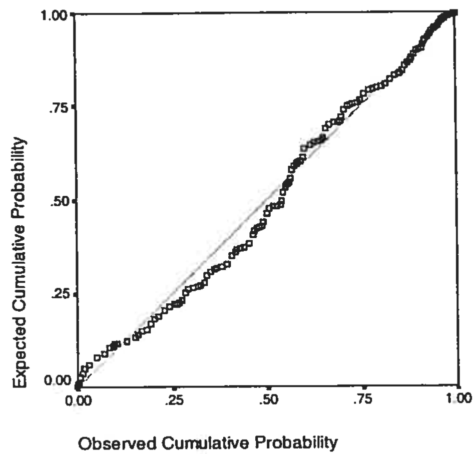
DSFI-experience: Normal P-P Plot of standardised residual



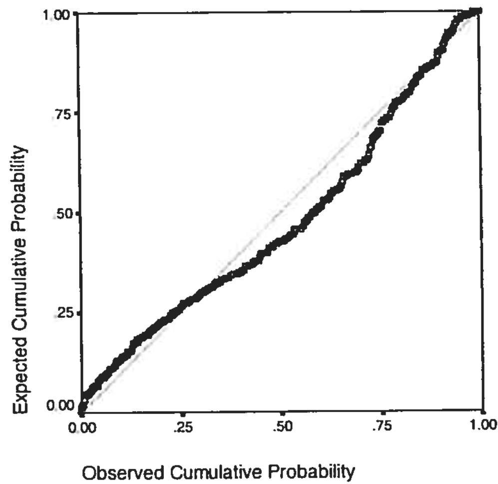
FNE: Normal P-P Plot of standardised residual



SAD: Normal P-P Plot of standardised residual



SAS-SR: Normal P-P Plot of standardised residual



SCL-90-R: Normal P-P Plot of standardised residual