On Conditions of Swedish Women’s Sexual Well-Being

An Epidemiological Approach

KATARINA ÖBERG
Dissertation presented at Uppsala University to be publicly examined in Grönwall salen, Akademiska Sjukhuset, Uppsala, Friday, September 2, 2005 at 13:15 for the degree of Doctor of Philosophy (Faculty of Medicine). The examination will be conducted in English.

Abstract

Objectives: This descriptive epidemiological dissertation aims to identify conditions of Swedish women’s sexual well-being. The focus is on the relationship between their idiosyncratically reported levels, during the last 12 months, of 5 sexual functions/dysfunctions per se and distressing and their socio-psychological situation, including aspects of their sexual history. Levels of sexual functions/dysfunctions are also related to levels of sexual satisfaction and to other aspects of life satisfaction.

Methods: Data on a randomized cross-sectional national sample of 1335 women aged 18-74 (59% of target sample) were gathered in 1996 using a combination of structured interviews and questionnaires/checklists. Analyses were performed for the total sample or for sub-samples aged 18-65 years. In 3 of the 4 dissertational articles, trichotomies of a 6-grade scale characterizing level of sexual dysfunctions into No/Mild/Manifest dysfunction were used.

Main results: Mild sexual dysfunctions were, generally, much more common than were manifest, and dysfunctional distress was considerably less common than were dysfunctions per se. All dysfunctions, and in particular orgasmic dysfunction, were closely associated with level of sexual well-being. Four factors independently pair-wise linking levels of dysfunctions per se with levels of distressful dysfunction were identified. These were Sexual interest/Desire, Genital function (lubrication and dyspareunia), Orgasm, Vaginismus. Three of these (not vaginismus) were powerful classifiers of gross level of sexual well-being. Many of socio-demographic and socio-psychological contextual life-conditions were significantly associated with the different sexual functions/dysfunctions. However, the most prominent contextual variables were satisfaction with partner relationship and partner’s levels of sexual functions.

In conclusion, many different socio-psychological aspects must be taken into account to optimize treatment modalities and resources when dealing with women’s sexual dysfunction in order to secure a good level of sexual well-being.

Keywords: Women, Sexual dysfunctions, Sexual abuse, Life satisfaction, Epidemiology

Katarina Öberg, Department of Neuroscience, Box 593, Uppsala University, SE-75124 Uppsala, Sweden

© Katarina Öberg 2005

ISSN 1651-6206
ISBN 91-554-6281-2
urn:nbn:se:uu:diva-5843 (http://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-5843)
This dissertation is based on the following original papers, which will be referred to in Roman numerals:


## ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NoD</td>
<td>No sexual dysfunction <em>per se</em></td>
</tr>
<tr>
<td>NoDD</td>
<td>No distressing sexual dysfunction</td>
</tr>
<tr>
<td>MiD</td>
<td>Mild sexual dysfunction <em>per se</em></td>
</tr>
<tr>
<td>MiDD</td>
<td>Mild distressing sexual dysfunction</td>
</tr>
<tr>
<td>MaD</td>
<td>Manifest sexual dysfunction <em>per se</em></td>
</tr>
<tr>
<td>MaDD</td>
<td>Manifest distressing sexual dysfunction</td>
</tr>
<tr>
<td>LiSat-11</td>
<td>Life satisfaction checklist encompassing 11 items</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence interval</td>
</tr>
<tr>
<td>OR</td>
<td>Odds ratio</td>
</tr>
</tbody>
</table>
AIMS

The overall aim of this dissertation is:
To identify pertinent conditions for sexual well-being in adult Swedish women.

The particular objectives of the four studies are:

I  To describe the prevalence of life-time sexual abuse in women, aged 18-74, and to relate sexual abuse to sexual dysfunction *per se* and to level of sexual satisfaction.

II To describe and to classify degrees of sexual functions/dysfunctions *per se* and personal distress caused by them, in 18-65 year-old women, in relation to some socio-demographic characteristics and to level of sexual satisfaction.

III To identify in 18-65 year old women the likelihood of co-occurrence of distressing sexual dysfunctions with different domains of life satisfaction and with a chosen set of contextual variables.

IV To describe levels of orgasmic function in 18-74 year-old women, in relation to some life-time sexual behaviors and erotic perceptions.
BACKGROUND

Exactly a century ago in “Three essays on the theory of sexuality”, Freud (1) stated that sexuality is an essential drive in the life of the human being. But, why would the scientific community seek epidemiological knowledge about sexuality and the sexual behaviour of human beings besides out of pure curiosity?

With the introduction of psychotherapeutic rationales and methods for alleviating sexual problems and, in the last three decades with the development of drugs intended to restore sexual functions –at least in men- a need for knowing the incidence and prevalence of sexual dysfunctions has emerged. This knowledge is essential to decisions in public health about dimensioning treatment resources and primary or secondary measures for preventing sexual dysfunctions. Indeed, sexuality is not only a private issue, but a matter of public health: the World Health Organization emphasizes the right of people to have “the highest attainable standard of health in relation to sexuality, including access to sexual and reproductive health care services” (2).

In today’s therapeutic practices whether psychological, medical or eclectic, evidence-based knowledge about human sexuality is needed. There is, however, a deplorable lack of epidemiological data, particularly concerning the conditions of women’s sexual life (3).

Conceptual Deliberations

This dissertation focuses on conditions for Swedish women’s sexual well-being. I open with a brief discussion of the concept of sexuality, moving on to other central concepts of this thesis.

Sexuality: According to Foucault (4), the concept of sexuality did not exist in antiquity since sexuality was an integral of human conduct. The first use of the term sexuality appeared in the year 1800, suggesting that it came into existence with modern society (5). Foucault (6) emphasizes that the political, economic and technical changes that came about with industrialization led to the conceptualization of sexuality as a discrete area of human experience. Today the Oxford Advanced Learners dictionary defines sexuality as “the
quality of being sexual or having sex.” Besides denoting female or male biology, sex is defined as “sexual activity and everything connected with it” (7). In the year 2002 the WHO, in a Technical Consultation on Sexual Health, discussed definitions of sex, sexuality and sexual health and arrived at the following broad working definition: “Sexuality is a central aspect of being human throughout life and encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction”(2). It thus appears that the term “sexuality” has no distinct ontology but can be regarded as a social construct. Since the social construction of sexuality operates within spheres of power (8) it facilitates societal control over sexual praxis. Epidemiological research in sexual medicine/sexology is clearly important, but may unfortunately lead to normative definitions of sexuality and sexual practices. Knowledge can even facilitate control of sexuality by political forces in for example, patriarchal societies (9).

The WHO (2) further says that: “sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles, and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological, psychological, social, economic, cultural, political, ethical, legal, historical and religious and spiritual factors”. Sexual health is defined by the WHO (2) as a state of physical, emotional, mental and social well-being related to sexuality, and not simply as an absence of disease, dysfunction or infirmity. For good sexual health, sexual rights must be recognized as prerequisite. Sexual rights include the right of all persons to be free of coercion, discrimination and violence and to have access to sexual and reproductive health care services. Whether sexual rights can be demonstrated empirically has been discussed by an expert-group (10). Its conclusion is that the definition given above permits identification of a certain minimum to be achieved.

A major focus of this dissertation lies upon the term sexual dysfunction, a somewhat ambiguous term. I shall here first briefly examine current international sets of definition of women’s sexual function/dysfunction. Thereafter I shall turn to a conceptual model, or framework, which is intended to facilitate differential diagnoses in sexual dysfunction.

Definitions: Two sets of definitions of women’s sexual dysfunctions are given in the diagnostic manuals of the WHO (ICD-10, 11), and the American Association of Psychiatry (DSM-IV, 12). The ICD-10 is used primarily in somatic care, while the DSM-IV is used in psychiatric/psychological settings. Both sets basically rely on the work of Masters and Johnson (13) following the model of genital responses frequently referred to as the sexual response cycle. This model describes a sequential progress from excitement, plateau, orgasm to resolution. Kaplan
re-categorized the sexual response model into three sequential stages; desire, arousal (excitement), and orgasm. Both the ICD-10 and the DSM-IV diagnostic systems add the pain symptoms: vaginismus and dyspareunia.

There is an ongoing debate on the adequacy of these definitions of women’s sexual dysfunctions. A major critique has been that women’s sexuality has been medicalized, and diagnosis fails to take into account contextual aspects of women’s sexuality (15, 16). The medicalization process has been defined as the transforming of a social situation or personal experience, especially one that is culturally abnormal or deviant, into a medical problem that requires treatment by medical experts (17, 18). Tiefer further states that the current medical classifications of sexual dysfunction contain shortcomings that reduce sexual problems to physiological disorders (19).

In 2000 a consensus panel (20) recommended a new classification and diagnostic system of women’s sexual dysfunction for the purpose of improving these guidelines of women’s sexual dysfunction. This classification system, structured the same way as the DSM-IV and ICD-10 systems, was expanded to include both psychogenic and organic causes and a mandatory criterion of “personal distress” was included in most diagnostic categories. Further discussions have, however, led to the conclusion that even these recent modifications of women’s dysfunctions are unsatisfactory (21, 22), and a new set of definitions has therefore been proposed (22, 23). These categories of functions/dysfunctions are: Sexual interest/desire, sexual arousal (subjective, genital, combined subjective/genital and persistent sexual arousal), orgasm, vaginismus and dyspareunia.

Yet another working group (24) has proposed a classification of women’s sexual problems, primarily in a cultural and relational context, within which they claim that sexual problems most commonly occur. Women’s sexual problems are defined as: “Discontent or dissatisfaction with any emotional, physical, or relational aspect of sexual experience”.

A Conceptual Model

I shall illustrate further details of women’s sexual functions/dysfunctions and well-being, as treated in this dissertation, by applying the case-analysis model given in figure 1, where the arrows can be seen as scripts -or messages- for the following level, the expression of this level may or may not be dependent upon the script. The left hemicircle shows that a woman who is sexually satisfied lives in a context that is sufficient for her, in terms of biological function and psycho-social adaptation to provide ability for her to achieve her sexual goal(s). By doing so she can feel sexually satisfied.

The right hemicircle gives the compartments that may influence sexual functions negatively or may co-occur with sexual dysfunctions.
At the context level sexual dysfunction may designate impairment (i.e. physiological and/or anatomical deficits) and/or psycho-social maladaptation to the life situation. One example of women’s sexual impairment may be age-related hormonal changes resulting in a low level of genital sexual arousal. Another clear example -at least from a Northern European point of view – may be female genital mutilation leading to decrease or lack of orgasm and to dyspareunia (25). Maladaptation is here seen in the light of Bowlby (26) who suggests that the term adaptation denotes not only the process of change to become adapted, but also the condition of being adapted; he terms this a “state of adaptedness”. No system can be so flexible that it suits all circumstances; adaptation implies a life-long dynamic process of change to new situations. Maladaptation is a condition, which is a psychological phenomenon of insufficient adaptation. This condition may have a psychological or environmental (i.e. socio-demographic) origin. One example of maladaptation would be a decrease or lack of sexual interest due to a non-successful coping process after a serious disease or injury. An example of adaptation would be decrease or lack of sexual interest in a relationship where the woman is the victim of physical violence (16, 27).

It appears of paramount differential diagnostic interest to separate impairment from maladaptational concomitants of women’s sexual dysfunctions. The available epidemiological literature, whether descriptive or analytical (= clinical series), suggests that distinguishing these factors is difficult because an impairment (such as a disease) is often accompanied by psychological maladaptation. In the following I shall briefly present some findings of different investigations of women’s sexual functions/
dysfunctions. It must here be emphasized that when selecting the literature, for this list the epidemiological validity score of Prins et al. (28) has been applied as described on page 15. Thus generally only articles/books that have a Prins-score of at least 10 (of an optimal maximum of 15) are referred to. More complete surveys have been given by Lewis et al. (3) Nappi et al. (29) and from a European perspective, by Fugl-Meyer and Fugl-Meyer (30).

Sexual interest appears to decrease with higher age (31, 32) and there has long been a general consensus that the prevalence of insufficient lubrication increases markedly after menopause. The literature, however, does not contain any epidemiologically valid study that distinguishes genital from subjective arousal. Moreover, there is a clear conflict between findings on the extent to which orgasm is age-dependent. Several studies have found no such association (31, 32, 33, 34). Other studies identify an increase in the prevalence of orgasmic dysfunction at relatively higher ages (35, 36). Similarly dyspareunia has been found both to increase with increasing age (31, 37) or to be age-independent (35). We have located no data on age as related to vaginismus.

**Impairments:** An exhaustive list of diseases that may lead to sexual dysfunctions is beyond the scope of this overview. Rather, typical impairments of bodily functions are briefly examined. Comprehensive surveys of the so-called “risk factors” have quite recently been published in Sexual Medicine – Sexual Dysfunction in Men and Women (38).

The literature suggests that perceived overall level of health is closely related to several aspects of sexual function. Thus, Richters et al. (35) reported that at least one sexual dysfunction was likely to prevail if women did not perceive their health as excellent. Laumann et al. (31) found that in the USA women who did not report their health as good were more likely to have a low level of sexual interest, “arousal” difficulties and dyspareunia. In a world-wide study which comes close to satisfying our criteria for epidemiological validity, Laumann et al. (39) found that in some, but not all, regions of the world, good health was associated with an absence of dysfunctions in sexual interest, vaginal lubrication, orgasm and dyspareunia. In their recent survey of the literature Nappi et al. (29) stated that sex steroids play an essential role in maintaining women’s sexual functions. There is, though, very little epidemiologically based knowledge on the extent to which endocrinological dysbalance is associated with particular sexual dysfunctions. In clinical series several sexual dysfunctions have been found to be associated with estrogen and androgen insufficiency. For instance, endogenous androgens have in an age perspective been suggested to be important for the quality of desire and arousal in peri- and postmenopausal Swedish women (40). In some contrast Dennerstein et al. (41) in a longitudinal investigation concluded that decline in women’s sexual
function across the menopause is rather associated with decline in estrogen than with reduced androgen. However, there still appears to be a lack of adequate assays to determine—if possible despite cyclic fluctuations—normal values in fertile women. It does, though, appear that androgen substitution in women with well defined androgen insufficiency, including sexual dysfunctions has clear beneficial effects on their sexual functions. Another endocrinological aspect of sexual dysfunction in women is that a decrease in sexual interest/desire is a particularly frequent concomitant of hyperprolactemia. Lubrication insufficiency and orgasmic dysfunction are also found with hyperprolactemia (42, 43). Whereas this is extremely likely it has not been truly epidemiologically confirmed.

Cardiovascular impairments in relation to women’s sexual dysfunctions appear only to a very limited extent investigated. Hypertension has been found to be associated with a low level of sexual interest (44) and with lubrication and orgasmic dysfunctions (33, 45).

There is a consensus that diabetes mellitus, particularly if complicated, is a significant companion of dysfunctions of interest/desire, lubrication, orgasm and also of dyspareunia (34, 46, 47, 48).

Urogenital conditions such as lower urinary tract symptoms (LUTS) and/or incontinence appear to be quite commonly associated with sexual dysfunctions of sexual interest/desire, lubrication, orgasm and dyspareunia (31, 49, 50). Moreover, dysfunctions of sexual interest/desire, lubrication and orgasm are common with stress urinary incontinence (51). However, in a systematic literature review Shaw (52) found that the lack of clear definitions and measures of “sexual incontinence” (i.e. urinary leakage during sexual activity) made meaningful conclusions impossible. Among Austrian gynaecological and urogynaecological patients (53) found the prevalence of women’s sexual dysfunctions independent of age was found to total 50%. In the epidemiological literature, the only reported dysfunction with a higher prevalence than what we found was that of dyspareunia. No significant differences in prevalence of dysfunctions between the gynaecological and the urogynaecological groups emerged.

Neurological disorders with loss of sensory and/or motor functions are often associated with sexual dysfunctions. Dysfunction is common among women with spinal cord injuries. Multiple sclerosis and neuropathies may seriously influence women’s sexual function. Zorzon et al. (54) reported that multiple sclerosis is accompanied quite often by a low level of sexual interest/desire and by lubrication dysfunction. However, studies of sexuality and neurological impairment(s) generally consist of clinical series (see 55, 56) and although very informative, do not conform to our selection criteria.

Overlapping between impairment and maladaptation are psychiatric disorders, which Osborn et al. (51) found to be associated with impaired sexual interest, orgasm dysfunction and dyspareunia. In general agreement with those findings, Dunn et al. (33) reported that depression and anxiety
were likely to predict arousal problems, insufficient lubrication, orgasm dysfunction, and dyspareunia. Laumann et al. (31) found emotional problems or stress to be sizeable predictors of low desire, arousal disorder and sexual pain. Van Lankeveld et al. (57) reported a higher prevalence of current and life-time anxiety disorder as well as life-time affective disorder in women with sexual dysfunction (hypoactive sexual desire disorder, orgasm disorder, vaginismus and dyspareunia) as compared to the general population. Some anti-depressants may be associated with women’s sexual dysfunctions. This appears to be particularly true for selective serotonin reuptake inhibitors (58, 59).

**Maladaptation:** In a cross-sectional study Dunn et al. (33) reported that marial difficulties were likely to accompany arousal and orgasmic dysfunctions. In consensus with Dunn et al. (33), Osborn et al. (51) found that marital difficulties were related to dysfunctions of sexual interest and orgasm. Marital status (i.e. never married, divorced, separated or widowed) was by Laumann et al. (31) found to be significantly associated with orgasmic dysfunction. Moreover, early loss of parents and unhappy childhood has been found in women with orgasmic dysfunctions (60). In a student population of women aged 19-32, Klusmann (61) reported a decline in sexual interest when the woman had been in a relationship for more than 3 years. In Australia, women (62) who reported that sex in regular heterosexual relationships was “extremely physically and emotionally pleasurable” were twice as likely not to report having had sexual difficulties within the last year (Odds Ratios 2.6 and 2.0 respectively).

Several investigators have found a relationship between sexual abuse and dysfunctions but the vast majority of clinical series did not satisfy our criteria of validity. On the other hand valuable literature surveys have been performed (63, 64, 65, 66). In a random community sample, Siegel et al. (67) reported that women who had at least once in their lives experienced sexual assault relatively often had a low level of sexual interest. In another study from the same project, Golding (68) found that in sexually assaulted women, sexual indifference, lack of sexual pleasure, and dyspareunia were overrepresented. Female college undergraduates with experience of penetrative date-abuse, “date-rape”, have been found to report more symptoms of “dysfunctional sexual behaviour” than women with no such experience (69).

Concerning socio-demographic factors, Laumann et al. (39) (Prins score 9) reported a relatively low level of education in some, but far from all, regions of the world to be associated with lubricative and orgasmic dysfunctions and to some extent with dyspareunia. In Morocco, Kadri et al. (48) found that low education was common in women with low sexual interest. This finding is in consensus with that from the USA by Laumann et
who additionally reported a significant association between low level of education and orgasmic dysfunction and pain during sex. In the same investigation (31) decrease of 20% or more in financial situation (during the last twelve months) was associated with a decline in sexual interest and with lubricative dysfunction and dyspareunia. Osborn et al. (51) reported significant increase in dysfunction of sexual interest in “lower” social class women.

**Action level:** Throughout the descriptive epidemiological reports on which this dissertation is based, we use the term sexual dysfunction. According to the dictionary definition, as pointed out by Bancroft et al. (70), dysfunction is defined as “malfunctioning, as of a structure of the body”. Hence, according to the case-model (figure 1), referring to impairment at the context level. For us, the dichotomy function/adaptation vs ability serves to separate the contextual level (whether of somatic, psychological or sociodemographic origin) from the ability/ inability to act sexually. Thus, a woman can report sexual inabilities in relation to her own desired repertoire of sexual activities. The woman herself, idiosyncratically, defines particular sexual inabilities. However, since the term inability is somewhat ambiguous, and in order to conform to standard sexual medicine/sexology terminology we have used the term dysfunction in the studies in this dissertation while actually asking the subject to report a perceived lack of a certain sexual activity repertoire. In the future, not least for establishing correct differential diagnoses, when characterizing sexual dysfunctions it might be relevant to distinguish between impairment/maladaptation and sexual inability.

Descriptive epidemiological studies on sexual dysfunctions in women are scarce, despite the fact that several investigators (31, 32, 35) have found sexual dysfunction(s), using different definitions, to be prevailing in 45-50% and up to 60% (71) during the last 12 months. This is, of course, dependent upon definitions and number of dysfunctions included. Through the databases Medline, PsycInfo, Cochrane Library, and through articles published in scientific journals (including their references), we have located epidemiological studies on women’s sexual dysfunction published since 1988. These studies were evaluated for epidemiological validity using the 15-items checklist (scores: yes:1, no:0), suggested by Prins et al. (28). In consensus with Lewis et al. (3) a cut-off score for inclusion at ≥ 10 points was chosen to denote a reasonable epidemiological validity. Of these studies, those which included at least two different dysfunctions are given in table 1. As can be seen, even with the relatively restrictive criteria of validity used here, the prevalence of pronounced (manifest) dysfunctions varies considerably between different studies.
Table 1. Descriptive epidemiology (arranged if possible in clusters of countries). The table gives prevalence of more pronounced sexual dysfunctions in women.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Country/Regional National</th>
<th>Method</th>
<th>Age-span</th>
<th>Response rate (%)</th>
<th>Time-frame</th>
<th>Validity Score Prins</th>
<th>↓ Sex Interest</th>
<th>↓ Desire</th>
<th>↓ Arousal Lubrication</th>
<th>↓ Orgasm</th>
<th>Dyspareunia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osborn et al.</td>
<td>UK / R</td>
<td>Interview</td>
<td>35-59</td>
<td>73%</td>
<td>Past 3 months</td>
<td>12</td>
<td>17%</td>
<td>-</td>
<td>L 17%</td>
<td>16%</td>
<td>8%</td>
</tr>
<tr>
<td>Barlow et al.</td>
<td>UK / R</td>
<td>Interview</td>
<td>&gt;55</td>
<td>61%</td>
<td>2 years</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>L 8%</td>
<td>-</td>
<td>2%</td>
</tr>
<tr>
<td>Dunn et al.</td>
<td>UK / N</td>
<td>Mailquest</td>
<td>18-75</td>
<td>33%</td>
<td>Current</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>A 17% L 28%</td>
<td>27%</td>
<td>18%</td>
</tr>
<tr>
<td>Mercer et al.</td>
<td>UK / N</td>
<td>Telephone</td>
<td>16-44</td>
<td>65%</td>
<td>6 or 1 months last year</td>
<td>12</td>
<td>10% (6 m) 41% (1 m)</td>
<td>-</td>
<td>L.3% (6 m) 9% (1 m)</td>
<td>4% (6 m) 14% (1 m) (anorgasmia)</td>
<td>-</td>
</tr>
<tr>
<td>Bajos et al.</td>
<td>Fr / N</td>
<td>Telephone</td>
<td>18-69</td>
<td>70%</td>
<td>Life-long</td>
<td>11</td>
<td>-</td>
<td>8%</td>
<td>-</td>
<td>11%</td>
<td>5%</td>
</tr>
<tr>
<td>Kontula &amp; Haavio-Mannila</td>
<td>Fin / N</td>
<td>Interview</td>
<td>18-74</td>
<td>78%</td>
<td>1 year</td>
<td>13</td>
<td>-</td>
<td>35%</td>
<td>L 15%</td>
<td>30%</td>
<td>7%</td>
</tr>
<tr>
<td>Fugl-Meyer &amp; Fugl-Meyer</td>
<td>Swe / N</td>
<td>Interview</td>
<td>18-74</td>
<td>59%</td>
<td>1 year</td>
<td>13</td>
<td>33%</td>
<td>8%</td>
<td>L 13%</td>
<td>22%</td>
<td>6%</td>
</tr>
<tr>
<td>Lindal &amp; Stefansson</td>
<td>Icl / N</td>
<td>Interview</td>
<td>55-57</td>
<td>75%</td>
<td>Life-long</td>
<td>14</td>
<td>-</td>
<td>16%</td>
<td>6% (excitement)</td>
<td>4% (anorgasmia)</td>
<td>3%</td>
</tr>
<tr>
<td>Laumann et al.</td>
<td>USA / N</td>
<td>Interview</td>
<td>18-59</td>
<td>79%</td>
<td>1 year</td>
<td>13</td>
<td>32%</td>
<td>-</td>
<td>L 21%</td>
<td>26%</td>
<td>16%</td>
</tr>
<tr>
<td>Richters et al.</td>
<td>AU / N</td>
<td>Telephone</td>
<td>16-59</td>
<td>65%</td>
<td>At least 1 month last year</td>
<td>13</td>
<td>55%</td>
<td>-</td>
<td>L 24%</td>
<td>29%</td>
<td>20%</td>
</tr>
<tr>
<td>Kadri et al.</td>
<td>MO / R</td>
<td>Interview</td>
<td>&gt;20</td>
<td>94%</td>
<td>6 months</td>
<td>10</td>
<td>-</td>
<td>18%</td>
<td>L 8%</td>
<td>12%</td>
<td>8%</td>
</tr>
</tbody>
</table>
Due to different sampling methods, definitions, age-ranges, time-frames and scaling of dysfunctions, it is not really possible to give internationally valid estimates of the prevalence of women’s sexual dysfunctions. Furthermore, socio-cultural differences make comparisons difficult. Table 1 shows that the prevalence of pronounced women’s sexual dysfunctions appears to be within the following very wide ranges: Decreased sexual interest: 10-55%, decreased sexual desire: 8-35%, lubrication insufficiency: 8-28%, orgasm dysfunction: 4-29%, dyspareunia: 2-20% and finally vaginismus: 1-6%.

To illustrate the (probable) effects of context it appears reasonable to refer to a recent report by Laumann et al. (39). These authors endeavoured to perform a multinational investigation, which may serve as a starting point for further comparative investigations. Using identical definitions of sexual dysfunctions world-wide the authors found that lack of sexual interest in women 40-80 year-old, occurred periodically or frequently for between 17-34% in different regions of the world. Quite similarly great variances in lubrication insufficiency (13-28%), inability to reach orgasm (10-24%) and dyspareunia (6-22%) occurred; invariably with a minimum in Northern Europe and a maximum in Southeast Asia.

In a twenty year prospective study Erol (34) (Prins-score 14), of women aged 40 years, originally studied by Garde and Lunde (77), reported that 33% of the women when 40 years old had a relatively low level of desire. This was the case for 37% of them when twenty years older.

Statement level: It has been suggested that sexual dysfunctions prevail only if accompanied by personal distress (20). Nevertheless, the only descriptive epidemiological investigation satisfying the Prins-score level ≥10 is the basic report upon which this dissertation builds. There is a higher prevalence of sexual dysfunctions when reported at the action level than when these sexual dysfunctions causing personal distress are reported (78). We have therefore chosen to separate dysfunctions per se from distressing sexual dysfunctions. This latter is in the model (figure 1), denoted as a statement addressing the perceived aspiration/achievement gaps caused by dysfunction (“inability”). As proposed (32), a meticulously case analysis can generally provide information on the extent to which a person possesses sexual activity repertoires which she considers adequate in relation to her particular knowledge, beliefs and wishes. If the ability is adequate for the woman to reach her sexual goals, she can state, i.e. at the statement level, that the ability or inability causes her no or few sexual problems. In contrast, if she is unable to act adequately, she may state that the inability causes “personal distress” i.e. she experiences an aspiration/achievement gap. This can be illustrated by the fact that after treatment (different modalities) for early cervical cancer about 25-33% of the women reported moderate or
pronounced distressful dysfunctions of sexual interest, vaginal lubrication, orgasm and also dyspareunia (79).

An area of sexual life which is difficult to position in the model (figure 1) is “sexual pleasure”. I here assume that sexual pleasure may best reflect the statement level, i.e. the extent to which aspirations are met by achievements. Laumann et al. (31) found that 23% (my interpretation) of women aged 18-59, in the USA reported that sex had not been pleasurable during the last 12 months. In Australian women (35) aged 16-59, about the same proportion (27%), reported that they did not find sex pleasurable for a period of one month within the last year. From Finland, Haavio-Mannila and Kontula (80) reported a significant positive correlation between women’s frequency of orgasm and experiences of pleasurable intercourse.

Emotion level: The main issue of this dissertation is to explore the relationship between women’s sexual functions/dysfunctions and sexual well-being. Other facets of well-being are regarded as important for describing women’s specific and overall states of adaptedness. Levels of sexual well-being are here described in terms of satisfaction, which according to the Oxford Advanced Learner’s dictionary (7) defines as: “The state of being satisfied, pleased or contented”. The level of satisfaction is here used as an emotional descriptor of the degree of congruence between aspirations and achievements with life as a whole and within different domains of women’s lives.

If goals within a life-domain (e.g. sexuality) are believed reachable a woman will generally experience herself as satisfied or very satisfied. In contrast, if an aspiration/achievement gap due, for instance, to a sexual dysfunction prevails it can be expected that the woman will experience a lower level of sexual satisfaction. Thus, the level of satisfaction is here taken as an expression of the woman’s positive or negative emotion tapping her perceived state of adaptedness. This can, of course, occur within different life-domains. The level of domain specific satisfaction can be assumed to have an impact on the overall level of life satisfaction (81), especially if the specific domain is important for the woman. A direct connection between overall satisfaction and the degree to which aspirations are met was found by Campbell et al. (82). For further discussions on the concept of life satisfaction see for instance (82, 83, 84, 85).

In this dissertation satisfaction with life as a whole and with nine domains of life are regarded as measures – and the contextual level – of the state of adaptedness within not explicitly sexual spheres of life.

I have been able to locate only a few epidemiologically valid studies of women’s sexual satisfaction, what we term sexual well-being. Fugl-Meyer and Fugl-Meyer (32) reported that 56% of the women in the same sample, as this dissertation uses, age-independently were very satisfied or satisfied with
their sexual life (including the whole age-span from 18-74). In Finland, Haavio-Mannila and Kontula (80) reported a growth of sexual satisfaction over a nearly twenty-year period in women aged 18-54. In 1992 32% of Finnish women aged 18-74 were very satisfied with their sexual life and 83% were at “least moderately satisfied” (75). In some contrast, Dunn et al. (86) found that 21% of women in the UK aged 18-75 were dissatisfied with their current sex life. They also reported that respondents were less likely to be satisfied with their sex lives if they currently perceived themselves to have a sexual problem.
SUBJECTS AND METHODS

Setting
This study was conducted in Sweden, a country in Northern Europe with approximately 9 million inhabitants.

Sample
In 1996 the Swedish National Institute of Public Health initiated and later financed a cross-sectional survey on sexual life, sexual attitudes and behaviour in Sweden. Out of a randomized target sample of 5250, 2810 women and men remained after exclusion or drop-outs as shown in figure 2. Among these, 1335 were women who were all included in I-IV. The selected number of respondents in the different studies can also be seen in that figure. In II and III women aged 66-74 and women who reported that they had not been sexually active during the 12 months preceding the investigation were excluded. III excluded these categories of women as well as those without a steady partner.

The sample can be distributed upon age-cohorts sociologically characterizing different periods in life (78; p 63): “Couple formers” 18-24 years old, “parents with small children” 25-34 years old, “parenting schoolchildren” 35-49, “middle-aged people without children at home” 50-65 years old and finally “retired women” aged 66-74.
Figure 2. The nationally representative sample of Swedish women and those included in studies I-IV.
Table 2 shows the distribution over the different age-cohorts of women’s reported frequency of sexual activity (not explicitly addressing vaginal penetration) during the 12 months prior to the investigation. As can be seen, half of the women in the oldest cohort had been sexually active during the last year, three fourths of the women aged 50-65, and between 87-95 % of the women 49 or younger. A majority of the women aged 18-65 reported that they had been sexually active within the last week while this was true for one third of the oldest women. While more than 80% (80-87%) of women aged 25-65 reported having a steady partner at the time for the investigation, about two thirds of the youngest women and half (52%) of the oldest women had steady partners. In the three youngest cohorts, almost everyone with a partner reported that they had been sexually active 12 months prior to the investigation. The corresponding figures were 87% and 78%, respectively, for the two oldest cohorts. None reported the partner to be a woman. Hence, it is assumed that only data on women in heterosexual relationships are included.

Table 2. Proportions (%) by age-cohorts, among 1335 Swedish women, of having been sexually active during the 12 months prior to the investigation. The distributions of the sexually active women (%) within three different time-frames are also given. The prevalence of steady partners and of women with partners who had been sexually active in the last year, are given in the last two columns.

<table>
<thead>
<tr>
<th>Age-cohort</th>
<th>Sexually active last 12 months (%)</th>
<th>≤ 7 days (%)</th>
<th>8 days – 4 weeks (%)</th>
<th>4 weeks – 12 months (%)</th>
<th>Steady Partner (%)</th>
<th>Sexually active with steady partner (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>87</td>
<td>63</td>
<td>17</td>
<td>20</td>
<td>65</td>
<td>99</td>
</tr>
<tr>
<td>25-34</td>
<td>95</td>
<td>71</td>
<td>17</td>
<td>12</td>
<td>87</td>
<td>99</td>
</tr>
<tr>
<td>35-49</td>
<td>92</td>
<td>69</td>
<td>18</td>
<td>13</td>
<td>85</td>
<td>98</td>
</tr>
<tr>
<td>50-65</td>
<td>75</td>
<td>65</td>
<td>22</td>
<td>13</td>
<td>80</td>
<td>87</td>
</tr>
<tr>
<td>66-74</td>
<td>50</td>
<td>33</td>
<td>37</td>
<td>30</td>
<td>52</td>
<td>78</td>
</tr>
</tbody>
</table>

Procedure

Data collection took place from January until October, 1996 and was carried out by a nationally established interview agency. Professor Bo Lewin, Department of Sociology, Uppsala University, directed the investigation in co-operation with a team of four other researchers (Fugl-Meyer KS, Helmius G, Lalos A and Månsson SA), each responsible for specific aspects of the investigation. In order to cover a broad spectrum of competence and knowledge about what ought to be surveyed, representatives from voluntary organisations and political interest groups, such as the Swedish Association
for Sex Education, the National Organisation for Battered Women and the Federation of Lesbian and Gay Rights, were invited to information meetings during the design procedure. Professional groups in the field of sexology (researchers and clinicians) were contacted to profit from their knowledge.

The main areas of the investigation on Swedish sexual life were: Social background, lifestyle, health, knowledge, attitudes, behaviour and valuation of personal sexual experience. Prior to data collection the research team conducted a number of pilot interviews. The purpose was to time the interview and furthermore to review the questionnaire together with the respondent to confirm that his/her actual experience (including the confidentially filled-in sections) was reflected in the formulations (i.e. a validation procedure).

After ethical approval by the Swedish Council for Research in the Humanities and Social Sciences (1995), subjects were randomly drawn from the Swedish Central Population Register, and weighted according to age and area of domicile. They were initially approached with a letter of information on the basic principles of the investigation; guarantee of anonymity, voluntary participation and they were informed about a previous survey on sexual life in Sweden, performed in 1967 (87). Some days after the initial letter had been sent, subjects were contacted by telephone. If they agreed to participate, an appointment for an interview was made. Prospective participants who were doubtful were offered time to think. For the vast majority the interview was held in the subject’s home, rarely at the interviewees’ workplace and only few at other places such as a library. In no case was more than one person per household included.

Data collection was performed through a combination of structured questionnaires/check-lists and a strictly structured face-to-face interview. Throughout the interview these oral and written parts alternated. The principles of this technique were developed in the previous population-based Swedish sex survey (87) and they have been successfully used in Finland (88, 75) and the UK (89). Interviews were conducted by experienced professional interviewers who volunteered to participate. All interviewers had had special training by some of the authors gathering interviewers group-wise in different locations in Sweden to discuss sexual items, their significance and how to deal with respondents in different imagined situations. In order to minimize an interviewer/respondent communication-bias, the questionnaires/checklists on intimate sexual behaviour, sexual functions and emotions were confidentially filled in and handed back to the interviewer in a sealed envelope. The interviewer was thus barred from seeing answers. Variables on possibly less sensitive matters such as socio-demographic characteristics were obtained through the structured interview. The interview lasted on average 90 minutes; no participant ended the interview prematurely.
A total of approximately 800 variables were included. All data analysed and presented in this thesis are selected from the initial investigation. At the time of the investigation there was, to our knowledge, no truly validated instrument for women’s sexual dysfunction based on a population sample. For this reason, but also for pragmatic reasons of time, we chose to address sexual function/dysfunction at the action level with one single question for each dysfunction. The single-item choice was also based on previous findings regarding self-reported sexual dysfunctions. Direct questions and clearly specified response alternatives have been shown to elicit truthful response from respondents (90, 91, 92).

**Categorization of sexual functions/dysfunction and distress:** Throughout the entire dissertation, women's sexual dysfunction *per se* and distressing sexual dysfunction were defined idiosyncratically, by the women themselves. A woman reported a particular dysfunction *per se* according to her perception of the extent to which it had occurred during the preceding 12 months (figure 3). Dysfunctions in 5 areas were specified: Sexual interest, vaginal lubrication, orgasm, dyspareunia and vaginismus. For each dysfunction the level of personal distress the woman associated with it was subsequently reported in response to the question: *Has this been a problem for you in your sexual life during the last 12 months?* For both categories; sexual dysfunctions *per se* and the concomitant distress, the occurrence and degree was quantified using a six-grade scale ranging from 1-6, with 1 for *all the time* through *nearly all the time, quite often, hardly ever, quite rarely* to 6, *never*. In I, only computations on sexual dysfunctions *per se* were performed, II and IV incorporated both categories of sexual dysfunctions (*per se* and distress), while III only included the distress category of sexual dysfunctions and excluded distressing vaginismus due to the low prevalence.

**Quantification of sexual functions/dysfunctions and distress:** Previously (32, 93) our group of researchers has dichotomized the six-grade scale into dysfunction (grades 1-3) vs no or minimal dysfunction (grades 4-6). In I, both the full 6-grade scale and this dichotomy was used. In II, quantification of sexual dysfunction *per se* i.e action level, and distressing dysfunction; i.e. statement level, were particularly addressed. Here it is suggested that degree of function/dysfunction can be classified into *manifest* (all the time, nearly all the time and quite often), *mild* (hardly ever and quite rarely) and *no* dysfunction. The women could report their perception of their male partner’s erectile and ejaculatory levels of function/dysfunction *per se* using the same system (also see figure 3).
**Woman’s own dysfunction:**

<table>
<thead>
<tr>
<th>Dysfunction</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual interest</td>
<td>It happens that people have periods of decreased sexual interest. Has this…</td>
</tr>
<tr>
<td>Vaginal Lubrication</td>
<td>It happens that the woman’s vagina does not become sufficiently wet during intercourse. Has this…</td>
</tr>
<tr>
<td>Orgasm</td>
<td>It happens that the woman has difficulties reaching orgasm. Has this…</td>
</tr>
<tr>
<td>Vaginismus</td>
<td>It happens that the woman gets spasm in her vagina so that penile penetration is difficult or impossible. Has this…</td>
</tr>
<tr>
<td>Dyspareunia</td>
<td>It happens that intercourse is associated with pain in the genital organs. Has this…</td>
</tr>
</tbody>
</table>

**Woman’s perception of partner’s dysfunction:**

<table>
<thead>
<tr>
<th>Dysfunction</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penile erection</td>
<td>It happens that the man’s penis does not become rigid or gets flaccid during intercourse. Has this…</td>
</tr>
<tr>
<td>Ejaculation</td>
<td></td>
</tr>
<tr>
<td>Too early</td>
<td>It happens that the man ejaculates very shortly after intromission. Has this…</td>
</tr>
<tr>
<td>Too late</td>
<td>It happens that the man has difficulties in achieving ejaculation. Has this…</td>
</tr>
</tbody>
</table>

Figure 3. Phrasing of eight statements addressing sexual dysfunctions per se. All statements were uniformly followed by the question: Has this happened in your sexual life during the last 12 months? Response alternatives: All the time, nearly all the time, quite often, hardly ever, quite rarely, never. Each question on dysfunction was subsequently followed by the question: Has this been a problem in your sexual life during the last 12 months? Response alternatives as above.

In I and II, one additional item, the level of sexual desire, was reported in response to the question: How often do you experience sexual desire? Possible answers ranged along a four-grade scale: often [4] occasionally [3], rarely [2] and never [1]. Scale steps rarely and never are interpreted as low level of sexual desire, whereas often and occasionally characterize sexual desire.

**Sexual well-being:** The level of sexual well-being (I-IV) i.e. the emotion level, was established by one statement on sexual satisfaction taken from the nationally validated (81) LiSat-11 checklist: How satisfying is your sexual life? The alternatives and: very satisfied [6], satisfied [5], rather satisfied [4], rather dissatisfied [3], dissatisfied [2], and very dissatisfied [1]. This scale can validly be dichotomised into gross level of sexual well-being: very
satisfied/satisfied (denoting a high level) vs rather satisfied/rather dissatisfied/dissatisfied/very dissatisfied (denoting a low level).

Here are a number of statements concerning how satisfied you are with different aspects of your life. For each of these statements please mark a number from 1 to 6 where 1 means very dissatisfying and 6 very satisfying.

1 = very dissatisfying, 2 = dissatisfying, 3 = rather dissatisfying, 4 = rather satisfying, 5 = satisfying, 6 = very satisfying

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>My life as a whole is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My vocational situation is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My financial situation is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My leisure situation is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My contact with friends and acquaintances is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My sexual life is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My ability to manage my self-care (dressing,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hygiene, transfers etc) is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My family life is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My partner relationship is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My physical health is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My psychological health is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4. The LiSat-11 checklist (in English translation) as used in the investigation.

**LiSat-11**: Levels of satisfaction with life as a whole and with 9 domains of life were measured in III using the LiSat-11 checklist. The six-grade scale can validly (81) be dichotomised as above. This check-list was, as a whole, used only in III to explore the association of women’s perceived adaptation to life over a broad range; i.e. at the context level, with distressing sexual dysfunction.

**Sexual abuse**: In I the occurrence of sexual abuse in the lives of women (referred to as life-time sexual abuse) was established by responses to the following statement and question: It happens that people are forced into sexual acts. Have you at any time been forced into any of the following? Eleven alternatives followed, each one of them specifying a different type of sexual act or situation. Nine of these alternatives (table 3), were entered into separate statistical analyses and further an aggregation of sexual abuse was created. Very few responded to the alternatives “masturbate in front of somebody” and “expose yourself in sex-photo or a sex-movie” therefore no separate analyses were performed for these parameters but they were
included in the aggregation. The aggregation variable was the only one used in **III**. Subjects were asked to mark all appropriate alternatives and were also given the possibility to mark: *Have not been forced into any of the above.* A subsequent question was phrased: *If you have been forced to any of this, has it happened once or several times?* Furthermore, an open question was: *How old were you the first time?* The respondents could check (yes or no) whether the abuse was still going on. The occurrence of sexual violence was established by asking: *Have you been subjected to unwanted violence during a sexual situation?*

**Other independent variables:** Besides the variables mentioned above, a relatively large number of independent variables were operationally chosen from among the approximately whole of 800 for **III** and **IV** (table 3). These variables were for **III** hypothesised to be of particular interest for the statement level of sexual dysfunction. The variables covered a broad spectrum of contextual items. In **IV**, variables describing life-time sexual behaviours and current erotic perceptions were related to the level of orgasmic function the women reported at the action and statement levels.
Table 3. Prevalence (%) of women 18-74 year old, upon independent variables operationally chosen for studies I-IV.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Respond</th>
<th>Prevalence (%)</th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genital exhibition</td>
<td>forced to exhibit your own genitals</td>
<td>2</td>
<td>I</td>
</tr>
<tr>
<td>Genital manipulation</td>
<td>forced manipulation of own genitals</td>
<td>5</td>
<td>I</td>
</tr>
<tr>
<td>Abusive cunnilingus</td>
<td>forced sucked or licked genitals</td>
<td>1</td>
<td>I</td>
</tr>
<tr>
<td>Genital exhibition by other</td>
<td>forced exhibition of other’s genitals</td>
<td>3</td>
<td>I</td>
</tr>
<tr>
<td>Masturbation spectator</td>
<td>forced to watch masturbation by other</td>
<td>1</td>
<td>I</td>
</tr>
<tr>
<td>Masturbation abuser</td>
<td>forced to masturbate other</td>
<td>2</td>
<td>I</td>
</tr>
<tr>
<td>Abusive fellatio</td>
<td>forced to oral intercourse</td>
<td>2</td>
<td>I</td>
</tr>
<tr>
<td>Vaginal penetration</td>
<td>forced penetration by penis or object in vagina</td>
<td>6</td>
<td>I</td>
</tr>
<tr>
<td>Anal penetration</td>
<td>forced penetration by penis or object in anus</td>
<td>1</td>
<td>I</td>
</tr>
<tr>
<td>Domicile; brought up present</td>
<td>relatively large city /small town/ rural area</td>
<td>21/33/46</td>
<td>II/III</td>
</tr>
<tr>
<td>Church-goer</td>
<td>taken part in religious services last 30 days</td>
<td>16</td>
<td>II</td>
</tr>
<tr>
<td>Financial situation</td>
<td>able to raise 1500 Euros within a week</td>
<td>85/87</td>
<td>II/III</td>
</tr>
<tr>
<td>Last intercourse in love</td>
<td>yes</td>
<td>99</td>
<td>III</td>
</tr>
<tr>
<td>Discussed separation</td>
<td>seriously discussed separation from partner during last 12 months</td>
<td>7</td>
<td>III</td>
</tr>
<tr>
<td>Perceived health</td>
<td>good</td>
<td>81</td>
<td>III</td>
</tr>
<tr>
<td>Diagnosed disease by physician</td>
<td>good</td>
<td>81</td>
<td>III</td>
</tr>
<tr>
<td>smoker</td>
<td>yes</td>
<td>20</td>
<td>III</td>
</tr>
<tr>
<td>Alcohol</td>
<td>between daily and 5 times during last month</td>
<td>17</td>
<td>III</td>
</tr>
<tr>
<td>Level of physical activity</td>
<td>active last 30 days</td>
<td>72</td>
<td>III</td>
</tr>
<tr>
<td>Premenopausal</td>
<td>yes</td>
<td>81</td>
<td>II/III</td>
</tr>
<tr>
<td>Childhood spent with both parents</td>
<td>yes</td>
<td>84</td>
<td>III</td>
</tr>
<tr>
<td>Children in household</td>
<td>yes</td>
<td>55</td>
<td>III</td>
</tr>
<tr>
<td>First orgasm by</td>
<td>masturbation</td>
<td>35</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>manual genital caressing by partner</td>
<td>23</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>oral sex</td>
<td>4</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>penile vaginal penetration</td>
<td>36</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>anal sex</td>
<td>0</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>during sleep</td>
<td>1</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>other</td>
<td>2</td>
<td>IV</td>
</tr>
<tr>
<td>Recalled age</td>
<td>at first masturbation</td>
<td>77</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>at first penetrative coitus</td>
<td>92/91</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>at first orgasm</td>
<td>80</td>
<td>IV</td>
</tr>
<tr>
<td>Having ever practised</td>
<td>masturbation</td>
<td>73</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>manual genital caressing; self /partner</td>
<td>3</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>cunnilingus</td>
<td>80</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>fellatio</td>
<td>73</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>vibrator-use; self /partner</td>
<td>15/4</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>vaginal intercourse</td>
<td>96</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>anal sex</td>
<td>20</td>
<td>IV</td>
</tr>
<tr>
<td>Most common stimulation techniques of masturbation</td>
<td>clitoris</td>
<td>69</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>clitoris and vagina</td>
<td>3</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>neither clitoris or vagina</td>
<td>28</td>
<td>IV</td>
</tr>
<tr>
<td>Orgasmic quality best with</td>
<td>penis in vagina</td>
<td>66</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>plays no role</td>
<td>31</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>worse with penis in vagina</td>
<td>3</td>
<td>IV</td>
</tr>
<tr>
<td>Orgasm solely by the motion of penis</td>
<td>yes</td>
<td>57</td>
<td>IV</td>
</tr>
<tr>
<td>Orgasm without stimulation of the clitoris</td>
<td>yes</td>
<td>47</td>
<td>IV</td>
</tr>
<tr>
<td>Current erotic perceptions</td>
<td>more easily than others fall in love / get sexually aroused</td>
<td>14/11</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>sexual fantasies</td>
<td>80</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>sexuality is important</td>
<td>77</td>
<td>IV</td>
</tr>
</tbody>
</table>
Methodological Considerations

All methods of data collection are subject to certain methodological limitations, e.g. selection- and observation bias, the former referring to any error arising when identifying the study population and the latter to any error in the measurement of information on “exposure and outcome.” Such biases have consequences on the reliability and validity of the results obtained (94). I shall discuss some pertinent limitations of this particular cross-sectional study which does, first of all, rarely discuss causalities since all variables are reported during one session.

Systematic errors can derive from differences between participants and drop-outs in exposure conditions; i.e. selection bias. High response rates have traditionally been thought to indicate a good survey. Prins et al. (28) argue for a response rate of >70% or sufficient information on non-respondents to make inferences about the representativity of the study population. This reasoning is based on the assumption that non-response error is (partially) a function of response rate (95). Recent research (96, 97, 98) have questioned this assumption; finding little relation between variation in response rate and changes in non-response error. However, a non-negligible such potential bias in the present study, in this respect, is possible consequences of the relatively high drop-out of 41%. A post-hoc attrition analysis (78; pp 47-57) was based upon a comparison of respondent to known facts of the Swedish population and a comparison between early and late respondent based upon the assumptions that late respondents are similar to those who did not respond. Finally the respondents were compared with what was actually known about the whole sample. These analyses showed that there are minor and unsystematic differences between groups (i.e. responses grouped as a function of when the interview was carried out), and the sample is acceptably epidemiologically valid with the possible exception of the older women.

A recall bias arises when memory or later experiences effect or influence the information collected retrospectively. It has been shown that high emotional content and details from traumatic events (99, 100) are better recalled than less emotionally loaded events. In this respect the life-time variables chosen in this study (i.e sexual abuse) could be regarded as traumatic and/or emotionally loaded.

In this dissertation, 6-grade scales have very frequently been reduced. This clearly reduces the information actually gathered. However, we know that the loss of information on life satisfaction is rather minimal when responses are dichotomized and the same principle pattern of the 10 domain-specific items emerges, regardless of whether the full six grade scale or the dichotomy is used. It has become fashionable to use indexes when dealing with surveys of sexual function/dysfunction. Indexes are then often reduced into sub-domains, which may be further sub-classified into degrees of
function/dysfunction. It is our contention that indexes are often conceptually confusing, mixing different aspects. In this context it is worth mentioning that an index (or sub-index) containing 5 items on a 5-grade scale opens up for more than 3000 different combinations. In 2002 Meston and Derogatis (101) surveyed 5 instruments the BISF-W (102), the DISF (103) and the GRISS (104) all of which were available in 1996. These authors also surveyed the CSFQ (105) and the FSFI (106); for the latter see also (107). None of these instruments have, however, been validated in representative cross-sectional population samples of adequate size. Validations have usually been performed on subjects selected for sexual dysfunctions or at best with small control groups. Hence, at the time of the investigation it was reasonable to use single questions on each dysfunction per se and on dysfunctional distress.

Another methodological problem of this investigation may be the choice of time-frame. Some investigators look at life-time occurrence (76, 74). Barlow et al. (72) have a two-year time window, while some European investigators (75, 108), and Laumann et al. (31) in the US have chosen the one-year time-frame we used. Others have chosen to discuss sexual dysfunctions occurring in the last 1, 2, 3 or 6 months (e.g. 35, 51, 73) of the preceding year. Remarkably, Mercer (73) found a 3-4 times greater prevalence in decreased sexual interest, lubricative difficulties and orgasmic dysfunction from one to six months. Still other investigators have described current prevalence occurrence of women’s sexual dysfunctions (37, 109).

Biases because of misclassification of “exposure and the outcomes” can occur. For example: a survey of women with both sexual abuse and sexual dysfunctions (exposure and outcome), may be more likely to respond than women with either exposure or the outcome and this differential response rate might falsely elevate this association (110). Self-reported sexual behaviour may derive biases of over- or underreporting as a consequence of social desirability as has been discussed by several authors (91, 111, 92). A relative strength in this respect, of the present study is the confidentiality with which questionnaires/checklists regarding all variables on sexual items were filled in. These items were further constructed as direct questions (single item) with clearly specified response alternatives, a design which has been shown to elicit truthful response from respondents (90, 91, 92).

Studies have shown participants in research on sexual behaviour to be more likely to report sexual difficulties (112) and tend to be more sexually liberal (113) than non-participants. Other studies have found that subjects with low sexual satisfaction tend to avoid participating in investigations of their sexuality (114, 115). Gorey and Leslie (116) suggested that a low response rate may very well yield a high prevalence of sexual abuse since respondents are interested in the subject. Groves et al. (95) argues that of the many features of surveys (e.g. the topic, the organization conducting the study, cash reward), the topic is particularly likely to lead to a non-ignorable
non-response error; interest in the topic may increase cooperation in a survey by approximately 40%. These authors also found the degree of highlightening survey topic effect response rate for those interested and a tendency for pre-paid incentive to reduce the effect of topic interest. In an Australian sample, enrolled from a national longitudinal research register, Dunne et al. (117) found some socio-demographic differences between responders and refusers in a postal survey, and a considerable reluctance to volunteer for sex research in comparison with health and social issues. In comparison to people who refused, consenterers had less conservative sexual attitudes, earlier age at first sexual intercourse and higher rates of sexual abuse. The authors did, however, conclude that this bias not seriously compromise population estimates (117). Applying these findings to the present investigation we know that 630 (13%) of the net sample of 4781 women and men (cf figure 2) did refuse participation because of “the subject”. Moreover, as many as 569 and 394 (totally 20% of the net sample) referred to “principle” and “other” reasons (respectively). Details of the underling reasons for not participating are unknown (78). It appears reasonable to assume that the sensitive matter of the topic of “sexuality” has played an important role. Counteracting the effect of the topic was probably the participation of the National Institute of Public Health, which can be assumed in the public’s mind to be a serious organization. The parts of the study dealing with sexual practices were not particularly highlighted, but rather, life style, sexuality and health.

It has been argued Lewin (78; p 43) that weekend supplements of tabloid papers easily give the impression that studies of sexual habits take place every week. Interviewers were instructed to discuss this misapprehension when contacting people, unfortunately it seems as this did not motivate. The relatively modest monetary incentive offered either a donation of approximately 8 Euros to “Save the Children”, Red Cross or the Children’s Cancer Foundation or a couple of lottery tickets of an equivalent value hardly reduced the effect of the sensitive topic.

Statistics

Univariate analyses: To analyse for differences, the Mann-Whitney, the Kruskal-Wallis ranking analyses or cross-tabulation with computation of Chi-2 was used as appropriate (I, II, IV). Simple logistic regressions were performed with computations of Odds Ratios and 99% confidence intervals (III and IV). An odd is defined as the probability for a particular event to occur in relation to the probability that it does not occur, and odds ratio is simply the ratio between two odds. An OR of 3.8, for instance, implies an almost 4 times greater likelihood for a dichotomized dependent variable to co-occur with a particular dependent variable, compared with the counterpart.
in that dichotomy, while an OR of 1 would imply no significant effect or co-occurrence. The 99% confidence interval establishes the boundaries for how confident to 99% we are that the “true” effect is within these limits. In III, significant associations (p<0.01) with confidence intervals at or above 1.5 were regarded as clinically meaningful. Correspondingly the upper limit was ≤ 0.67 for reciprocal values. Confidence intervals ≥ 1.0 < 1.5 (correspondingly values of at or above 0.67 ≤ 1.0), were regarded as denoting possibly meaningful co-variations, of doubtful clinical value. In IV we added one narrow in-between class of meaningfulness termed borderline clinically meaningful, where the lower level of confidence interval is ≥ 1.4 < 1.5 or if reciprocal >0.67 ≤ 0.71.

**Multiple variable models:** Multiple logistic (backward Walden categorical) regressions (III) were performed to explore the likelihood of four areas of manifest distressing sexual dysfunctions vs no distressing dysfunction to co-occur with those independent variables that were univariately significant in the particular simple logistic regressions. For clinically meaningfully associations the same confidence interval boundaries were operationally chosen as in simple logistic regression. Another series of multiple logistic regressions (backward Walden) were performed post scriptum to explore the co-occurrence between five sexual dysfunctions per se and distress (analysed for no vs manifest and no vs mild degree) in relation to gross level of sexual satisfaction. With a CI 99% level, the limit for entry/removal was for all regression analyses set to p<0.01.

**Multivariate analyses:** For the identification of a possibly interpretable pattern (II) of the sexual function/dysfunction items per se and distressful dysfunctions, trichotomized into manifest, mild and no (cf above), factor-analysis, Varimax rotation, four-factor option, was performed. Factor analysis is a statistical method where interrelated variables can be identified in clusters. The Varimax rotation, orthogonal design, minimize the number of factors and only factors with an Eigenvalue of at least 1.0 were considered. An Eigenvalue is an indicator of the total variance explained by a factor. The cut-off limit for an item to be regarded as a significant contributor was a rotated loading of at least 0.50, lower loadings indicating little contributory value.

To obtain an impression of the extent to which a minimum set of the dysfunction factors emerging from factor analysis in II could classify gross level of sexual satisfaction, discriminant analysis was used, entering the computed factor-scores as independent variables. Standardized discriminant coefficients < 0.20 were regarded as negligible. The cut-off for an analysis to be regarded as meaningful was at least totally 67% of the level of sexual
satisfaction correctly classified. Furthermore, the difference between correctly classified proportions of the dependent variable (i.e. gross level of sexual satisfaction) should not exceed 15%.

Alpha level: In I the chosen level of significance was $p<0.05$, but in order to minimize the risk of type 1 errors, although admittedly increasing the risk of type 2 errors, as the sample size was relatively large throughout the subsequent studies (II-IV), the chosen level was $p<0.01$. In the text, differences are generally only mentioned if these criteria of significance are met. For statistical analyses the SPSS™ versions 9.0, 10.0 or 10.1 were used.
MAIN RESULTS

I

Prevalence of sexual abuse: A major finding is that 12% of the Swedish women aged 18-74 reported that they had been sexually abused at some time during their lives and fifty percent of them had been sexually abused more than once. The highest prevalence of any sexual abuse was found in the youngest age-cohort (14%), and the lowest prevalence rate (4%) was among the oldest women. Vaginal penetration (by penis or an object) was the most commonly reported (6%) type of sexual abuse. The next most common type was abusive genital manipulation: 5% for the whole sample. Of those who reported that they had been forced into one type of sexually abusive act more than half (55%) reported this to be vaginal penetration. Furthermore, 38% of women victimized by one abusive act also reported unwanted sexual violence (cf methods). Thirty percent had been forced into two or three forms of different abuse, while 13% reported four or more types of sexual abuse. Three women reported ongoing sexual abuse.

Concerning the distribution of age at first sexual abuse, 17% had been abused before puberty, i.e. between ages 3-10, 40% reported this age to be between 11 and 19. Finally 43% were reportedly 20 years or older when they were first sexually abused.

Sexual abuse and sexual dysfunctions per se: In univariate analyses, sexually abused women had a higher number of sexual dysfunctions at the action level than had the non-victimized. With the exception of cunnilingus, all types of sexual abuse were significantly associated with orgasmic dysfunction. A significantly lower level of sexual interest was reported by women forced to abusive acts of vaginal penetration, genital manipulation, cunnilingus and to perform fellatio. Moreover, women who had been sexually abused more than once reported a lower level of sexual interest and orgasmic function than did those who were abused once. Women’s reported age at first sexual abuse (< 10, 11-19, ≥20) did not make any significant difference with regard to prevalence of any of the sexual dysfunctions at the action level.
Sexual abuse and sexual well-being: At the emotion level, the 12% who, during their lives had been victims of any sexual abuse had a lower level of sexual satisfaction (full 6-grade scale) than non-abused women. Women who reported sexual abuse more than once had a lower level of sexual well-being.

II

Prevalence of sexual dysfunction per se and distress: One aim of this study was to compare women’s sexual dysfunctions at the action level with those at the statement level. For both categories, a quantification (classification) into manifest, mild or no dysfunction was suggested. A dysfunction reported to occur quite often, nearly all the time and all the time was judged to denote manifest dysfunction per se (MaD) or manifest concomitant personal distress (MaDD). A dysfunction reported to occur hardly ever and quite rarely were assumed to indicate mild -sporadically occurring- sexual dysfunction per se (MiD), or mild dysfunctional distress (MiDD). NoD and NoDD then characterized no dysfunction per se and no concomitant personal distress. For the different dysfunctions the ratios for the aggregated MaDD and MiDD (statement level) by MaD and MiD (action level) were generally in the order of 0.6-0.7. Across all dysfunctions MiD and MiDD were clearly more common than MaD and MaDD. Mild dysfunction in sexual interest, vaginal lubrication and orgasm were 2-4 times more common than were manifest dysfunctions while for dyspareunia there were seven times more MiD than MaD. Concerning the relationship between MiDD and MaDD, a quite homogenous picture emerged as all MiDDs were 3-4 times more prevalent than were MaDDs.

At the action level the prevalence of manifest and mild decreased sexual interest was 29% and 60%, respectively; while at the statement level the respective prevalence was 15% and 44%. Lubricative dysfunction MaD and MiD were reported by 12% and 50%, and MaDD and MiDD prevailed in 8% and 32%. Manifest and mild orgasmic dysfunctions per se were reported by 22% and 60%, respectively; the corresponding figures for orgasmic distress were 10% and 38%. Dyspareunia MaD and MiD was reported by 5% and 34%, and MaDD and MiDD were 5% and 23%. Finally manifest and mild vaginismus per se were reported by 1% and 5% and distressing vaginimus by 1% and 4%.

The prevalence of dysfunction did not vary significantly between age-cohorts except for a higher prevalence of manifest lubricative insufficiency in women older than 50.

Approximately 45% of women with MaD in sexual interest and orgasm reported this to be manifestly distressing, while 61% of those with insufficient lubrication and 72% of women with dyspareunia reported this to be the case. Very few (1-2%) women reporting mild sexual dysfunctions
classified these as manifestly distressing, and 40-50% reported mild dysfunctions to be accompanied with no distress.

_Socio-demographic characteristics and sexual dysfunctions:_ In this sample the socio-demographic variables of education, occupation, financial situation, social group, immigrant status, domicile and church-goer by and large did not co-variate with sexual dysfunctions.

_Trichotomized categories of sexual dysfunction and sexual well-being:_ The distribution over the 6 different grades of sexual satisfaction (emotion level) was that 25% were very satisfied and 36% satisfied. Rather satisfied were 24% and rather dissatisfied 9%, while 3% respectively, were dissatisfied and very dissatisfied. Across all dysfunctions, women reporting MaD or MaDD had a lower level of sexual well-being than had those with mild dysfunctions and distress. Furthermore, a lower level of sexual well-being was found in women with MiD and MiDD compared to women with no dysfunction.

A factor analysis, explaining 72% of the variance, identified a four-factor pattern of the trichotomy of both categories of sexual functions/dysfunctions. Factor I, labelled “Genital function”, combined lubrication and dyspareunia, Factor II, labelled “Vaginismus”, containing only vaginism, Factor III combined sexual desire and sexual interest and was accordingly labelled “Sexual interest/desire” and finally Factor IV, solely containing orgasmic function/dysfunction was labelled “Orgasm”. A discriminant analysis where the factor scores were entered as independent variables gave three factors as powerful classifiers of gross level of sexual satisfaction: sexual interest/desire, followed by orgasmicity and genital pain.

**III**

This study focused on the statement level of four sexual dysfunctions using the previously suggested (II) trichotomized quantification: manifest (MaDD), mild (MiDD) and no (NoDD) dysfunction. In III we operationally chose a dichotomy of statistical meaningfulness (at the p<0.01 level) for the clinical interpretation of significant associations when giving the results of logistic regression analyses: clinically meaningful and possibly clinically meaningful. This dichotomy is based on confidence interval. In IV (cf below) this was revised to interpose a borderline clinically meaningful category (cf statistics). These operational categorizations may be disputed from the point of view that a significant OR is simply significant. We feel, however, that researchers and clinicians should be on safe grounds when discussing the clinical implications of contextual factors in relation to sexual
dysfunctions. As I favour the trichotomized categorization I shall use that one in this survey, only cursorily here mentioning the possibly meaningful co-variations. Admittedly this choice may appear somewhat restrictive.

In simple logistic regressions, a multitude of the independent variables at the context level (given in figures 2 & 4 and table 3) were clinically, borderline or possibly clinically meaningfully associated with the different MaDDs as compared with NoDD. Clearly fewer significant associations and mainly only possibly clinically meaningful, emerged between the contextual items with MiDDs as compared with NoDDs. For this reason these associations are not included in table 4 and therefore it did not appear adequate to search for statistical multiple models for the MiDD level. By performing multiple logistic regressions between sexual dysfunctions MaDD vs NoDD and the univariately significant co-variants, the numbers of meaningful variables were considerably reduced.

Univariate analyses: Sexual well-being (satisfaction with sexual life), co-occurred with all MaDDs and MiDDs vs NoDDs at the clinically meaningfully level although to a lesser degree (lower odds ratios) with MiDD than the MaDD vs NoDD (ORs for MaDD/MiDD: sexual interest 37/6, lubrication 12/2, orgasm 17/3 and dyspareunia 13/3).

As can be seen in table 4 all women’s distressing manifest dysfunction co-variated very closely with a partner’s manifest erectile dysfunction (action level). A mild degree of erectile dysfunction per se was clinically meaningfully associated with MaDD in sexual interest and borderline clinically meaningfully with manifest dyspareunia. A partners’ early ejaculatory MaD was associated with both degrees of distressing orgasmic dysfunction (MiDD OR 4). A mild degree of early ejaculation was associated (borderline meaningfully) with orgasm MaDD. Manifest delayed ejaculation co-occurred, clinically meaningful, with manifest and mild distressing lubrication dysfunction and further with manifest distressing orgasm dysfunction.

A low level of satisfaction with the partner relationship was likely to accompany all women’s manifest sexual dysfunctions at the statement level to a clinically meaningfully degree, with the only exception of dyspareunia and with borderline clinically meaningfulness to concur with MiDD of sexual interest (OR 3).
Table 4. Odds ratios, decimals not given, computed in simple logistic regression analyses for the clinically (in bold letters) and borderline meaningfully significant (p<0.01) associations between contextual items and manifest sexual dysfunctions at the statement level. The 926 women in III are included in most computations. However for the items marked by * all 1335 women (IV) are included.

<table>
<thead>
<tr>
<th>Sexual Interest</th>
<th>Lubrication</th>
<th>Orgasm</th>
<th>Dyspareunia</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaDD vs NoDD</td>
<td>MaDD vs NoDD</td>
<td>MaDD vs NoDD</td>
<td>MaDD vs NoDD</td>
</tr>
<tr>
<td>Partner’s erectile dysfunction per se</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaD</td>
<td>37</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>MiD</td>
<td>29</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Partner’s early ejaculation per se</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaD</td>
<td>-</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>MiD</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Partner’s delayed ejaculation per se</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaD</td>
<td>-</td>
<td>23</td>
<td>8</td>
</tr>
<tr>
<td>MiD</td>
<td>-</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td>Discussed separation</td>
<td>5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Not good health</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Postmenopausal</td>
<td>-</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Manual genital caressing*</td>
<td></td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>Cunnilingus*</td>
<td>0.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexuality important*</td>
<td>0.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low level of satisfaction with:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life as a whole</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Partner relationship</td>
<td>8</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Family life</td>
<td>3</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Psychological health</td>
<td>3</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Leisure</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Contacts</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- refers to a co-variation either not significant or only possibly meaningful.

Sexual interest MaDD as opposed to no distress, did further co-occur with having discussed separation, with a low level of satisfaction with life as a whole with family life, psychological health and leisure and contacts (clinically meaningful) and finally with perceived poor health (borderline clinically meaningful).

Women older than 50 were more likely (OR 5) to report lubrication MaDD vs NoDD than women aged 25-49. Being postmenopausal (clinically meaningful) and low satisfaction with life as a whole (borderline clinically meaningful) co-occurred with lubrication MaDD. In this context it should be noted that age (in cohorts) was not univariately clinically or borderline meaningfully associated with any of the other distressing dysfunctions.

38
Orgasmic dysfunction MaDD as opposed to NoDD was co-variant with a low level of satisfaction with life as a whole, with family life and with psychological health.

Clinically meaningful likelihoods to prevail with MaDD dyspareunia were not being in good health, and having low levels of satisfaction with life as a whole, with psychological health and with family life. Finally, a low level of satisfaction with leisure co-varied borderline clinically meaningfully with dyspareunia MaDD.

Multiple variable models: Multiple variable analyses were performed to identify the relative weights between the univariate significant contextual items in relation to each of the four areas of manifest vs no sexual dysfunctions at the statement level.

MaDD vs NoDD of sexual interest was extremely likely to be accompanied by a partner’s erectile dysfunction, whether manifest (OR 48) or mild (OR 42). The only other contextual variable clinically or borderline meaningfully likely to concur with MaDD of sexual interest, was a low level of satisfaction with partner relationship (OR 6).

A partner’s manifest delayed ejaculation (OR 20) and a low level of satisfaction with the partner relationship (OR 4) occurred with lubrication MaDD vs NoDD. Furthermore, and also at the clinically meaningful level, women 50 years or older were at a seven-fold greater risk of having manifestly distressing lubrication dysfunction than women younger than 35.

Distressing manifest orgasmic dysfunction was likely to co-occur with a partner’s manifest erectile dysfunction (OR 20). The association between MaDD in orgasm and with mild erectile dysfunction (OR 8) was borderline clinically meaningful. A partner’s manifest early ejaculation (OR 7) and low partner relationship satisfaction (OR 5) were associated with orgasmic MaDD vs NoDD.

Finally, manifestly distressing dyspareunia was likely to be accompanied by partner’s manifest erectile dysfunction (OR 6) and low level of satisfaction with life as a whole (OR 5).

IV

This study focused on women’s orgasmic function/dysfunction at the action and statement levels, and again quantified into the previously suggested (II), sub-classes of no (NoD/NoDD), mild (MiD/MiDD) and manifest (MaD/MaDD) dysfunctions. Orgasmic function/dysfunction was related to some life-time sexual practices and current erotic perceptions. Further, some sources of obtaining orgasm are described in relation to five age-cohorts (see methods).
Ninety-seven percent of the respondents had reached orgasm, and no systematic age-dependence was found for the prevalence of either orgasmic dysfunctions per se or distress. The most commonly recalled ways that women obtained their first orgasm was by penile vaginal intercourse (36%) and masturbation (35%). This was, however, age-dependent, in the sense that relatively older women more often reported their first orgasm through penile vaginal intercourse, while the younger women reported reaching first orgasm by masturbation. Two thirds of the women reported that they preferred clitoral stimulation when masturbating. However, 60-65% of women younger than 50 and 75% of those older than 50 years, perceived orgasm quality to be best with penile penetration of the vagina.

Orgasmic function/dysfunction, sexual practices and erotic perceptions: A series of univariate logistic regressions were performed in order to identify co-occurrences between the trichotomy of both categories of orgasmic dysfunctions (action and statement levels) and specific life-time sexual practices and current erotic perceptions. An in-between class of meaningfulness borderline clinically meaningful level (confidence interval $>1.4 < 1.5$) was introduced (cf above). This expansion of our meaningfulness criteria was due to our thoughts emerging in the latest phase of analyses; namely that the dichotomy was too stern.

Orgasm attained by manual and oral stimulation and the perception that sexuality was important were likely (ORs 2.4-5.4) to concur at a clinically meaningfully level, with no orgasmic dysfunction. This finding prevailed at both action and statement levels (for the sake of clarity these ORs have in table 4, at the statement level, been assigned reciprocal values). Women who reported that they had obtained orgasm exclusively by penile motion were more than twice as likely (OR 2.6) not to have a manifest orgasmic dysfunction at the action level, compared to women with no dysfunction. At the action level a relatively early age at first orgasm co-occurred, at the borderline clinical meaningfulness level, with no orgasmic dysfunction as opposed to manifest dysfunction. Furthermore, perceiving herself as more easily sexually aroused than most women was likely to co-occur (borderline clinically meaningful) with no orgasmic dysfunction per se compared to manifest and mild such.

Orgasmic function/dysfunction and sexual well-being: Regardless of age women with no orgasmic dysfunction were more likely to perceive themselves as sexually satisfied than were women with a dysfunction per se or distress, especially manifest dysfunction and distress. In order to identify the relative importance of different sexual function/dysfunctions to sexual well-being, a series of simple regressions were performed. These showed
that manifest and mild orgasmic dysfunction, particularly when perceived as distressing, are generally more important for sexual well-being than are decreased sexual interest, lubrication, vaginism and dyspareunia.

Post Scriptum

A review of the final results of all four studies led to the decision to perform yet another series of multiple variable logistic regressions, in order to identify the relative weights between the sexual dysfunctions at the action and statement levels (analysed for no vs manifest and no vs mild degree) in relation to gross level of sexual well-being. The analyses were performed (table 5), for the entire sample of sexually active women (n:1335). They showed that only two of the five different dysfunctions, whether at the action or the statement levels were associated at the clinically and borderline levels of meaningfulness with sexual well-being. These were sexual interest and orgasm. Orgasmic function/dysfunction was the most important, with a nearly 21-fold greater likelihood to co-occur with a low level of sexual well-being if reported manifest at the statement level compared with orgasmic functional (NoDD) women. Hence, in multiple statistical models both categories, whether manifest or mild, of lubrication, vaginismus and dyspareunia were weighted out. Orgasmic function and, to a lesser extent, an interest in sex are prerequisite to women’s sexual well-being.
Table 5. Multiple logistic regressions, odds ratios and 99% confidence interval, between high level of sexual satisfaction vs low level of sexual satisfaction, and five areas of manifest and mild sexual function/dysfunction categorized into per se (action level) and distress (statement level) vs no dysfunction.

<table>
<thead>
<tr>
<th>Area</th>
<th>Odds Ratios</th>
<th>99% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sexual Interest</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaD vs NoD/MaDD vs NoDD</td>
<td>8.8&lt;sup&gt;a&lt;/sup&gt;/12.4&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.2-62.8/4.1-37.0</td>
</tr>
<tr>
<td>MiD vs NoD/MiDD vs NoDD</td>
<td>NS/2.2&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-/1.4-3.5</td>
</tr>
<tr>
<td><strong>Lubrication</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaD vs NoD/MaDD vs NoDD</td>
<td>NS</td>
<td>-</td>
</tr>
<tr>
<td>MiD vs NoD/MiDD vs NoDD</td>
<td>NS</td>
<td>-</td>
</tr>
<tr>
<td><strong>Orgasm</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaD vs NoD/MaDD vs NoDD</td>
<td>11.8&lt;sup&gt;a&lt;/sup&gt;/20.8&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.4-55.8/3.7-111.1</td>
</tr>
<tr>
<td>MiD vs NoD/MiDD vs NoDD</td>
<td>NS/2.1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-/1.4-3.2</td>
</tr>
<tr>
<td><strong>Vaginism</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaD vs NoD/MaDD vs NoDD</td>
<td>NS</td>
<td>-</td>
</tr>
<tr>
<td>MiD vs NoD/MiDD vs NoD</td>
<td>NS</td>
<td>-</td>
</tr>
<tr>
<td><strong>Dyspareunia</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaD vs NoD/MaDD vs NoDD</td>
<td>NS</td>
<td>-</td>
</tr>
<tr>
<td>MiD vs NoD/MiDD vs NoDD</td>
<td>NS</td>
<td>-</td>
</tr>
</tbody>
</table>

<sup>a</sup> *p* ≤0.000, <sup>b</sup> *p* <0.005 > 0.001
GENERAL DISCUSSION

The overall aim of this dissertation was to identify pertinent conditions for sexual well-being in adult Swedish women. This aim emerged to offset the deplorable lack of epidemiological knowledge about women’s sexuality and to provide a basis for evidence-based interventions within sexual medicine. The dissertation employs a case-analysis conceptual model describing sexual functions at the action and the statement levels and relates these levels to contextual variables and to levels of sexual well-being among women.

The case-analysis model should not be seen as exclusively unidirectional. A particular manifest dysfunction at the action level will often be accompanied by a dysfunction at the statement level. An aspiration/achievement gap which to a significant degree may be accompanied by low level of sexual satisfaction (the emotional level). However, both dysfunction at the statement level and sexual dissatisfaction may negatively influence the action (i.e. a negative feedback) leading to reinforcement of this particular dysfunction or to establishment of other dysfunctions. For instance, orgasmic dysfunction with accompanying distress may well lead to decreased sexual desire/interest and/or to subjective arousal disorder, finally leading to a further decline in sexual satisfaction.

A central finding is that all sexual dysfunctions at the action and statement conceptual levels described here, in particular if manifest but also if mild, are highly likely to concur with a low level of sexual well-being. In turn in I-IV a considerable number of contextual factors have been identified as likely to prevail in at least univariate statistics with sexual dysfunctions. These contextual factors are reduced in number when multiple variable models are employed. The most pertinent contextual factors are partnership, relations including the male partner’s sexual performance.

Action and statement levels: At these conceptual levels a sexual dysfunction are trichotomized into: no, mild and manifest dysfunction. An important feature of this dissertation is that sexual dysfunctions in the general population of Swedish women are common, the aggregated prevalence for manifest and mild dysfunctions reaching highs of 80-90% (orgasmic dysfunction and decreased sexual interest). The prevalence of mild dysfunction at the action level was, in fact, so high as to suggest that
sporadic occurrence of sexual dysfunction at the action level is within a “normal” range. The fact that only 1-2% of the women with mild dysfunction at the action level reported this to be manifestly distressing and that about 40% to 50% of them experienced no distress might underline this speculation.

As Dunn et al. (118) and Simons and Carey (119) have noted, methodological differences make systematic literature reviews of the prevalence of dysfunctions and meta-analyses for estimates of population-based prevalence difficult. In the literature surveyed here, selected on the basis of the validity score of Prins et al. (28), the prevalence of different sexual dysfunctions as described varies considerably. Hence, it has to be concluded that there is no generally accepted window for standardized methods within the field of sexual medicine. To illustrate methodological differences: In Sweden, Stenberg et al. (120) (Prins-score 10), found a considerably higher prevalence of vaginal lubrication insufficiency in 61-year-old women (43%) than we found in 50-65-year-olds at the manifest level (approximately 22%). Levels were clearly lower, however, than we found when we aggregated manifest and mild levels of lubrication dysfunction (62%). Despite methodological differences, also from Sweden and in reasonable consensus with our findings, Hagstad and Janson (121) (Prins-score 10), found a prevalence (27%) of orgasmic dysfunctions per se in women aged 37-46, quite similar to that we found (22%). Gracia et al. (122) (Prins-score 12) found a prevalence of decreased sexual interest in 27% among 35-47 year old women when measuring menopausal symptoms, a figure that concurs with our finding of approximately 26%. Thus, within and across national borders different epidemiological studies of prevalence of sexual dysfunctions may or may not support each other at a reasonable level. Such reinforcement, of course, does not preclude varying effects of socio-cultural differences in different countries or regions. Thus, as mentioned in the introduction, Laumann et al. (39), using basically identical definitions of sexual dysfunctions, found considerable differences in the prevalence of sexual dysfunction in different parts of the world.

At the statement level and across all sexual dysfunctions the fact that the ratios: aggregated statement by aggregated action levels of dysfunctions was as low as 0.6-0.7 implies that manifest sexual dysfunction per se may well cause no distress at all. In fact, this was the case in 10-15% of the women with dysfunctional sexual interest, lubrication and orgasm. This lack of distress may at least partly, as also suggested by Bancroft (16) and Hartman et al. (27) be explained in terms of adaptation. A woman’s sexual response may be inhibited by unfavourable interpersonal factors. Thus, sexual dysfunction at the action level may for many women be regarded as an adaptive “defence”, which is further illustrated by our finding that women with a history of sexual abuse more often than the not abused have sexual dysfunctions at the action level, particularly orgasmic dysfunction.
In this sample of 1335 women, all manifest sexual dysfunctions at the action level have elsewhere been found to be significantly associated with each other (93). This confluence of dysfunctions indicates that in clinical practice the woman who seeks help for a particular sexual dysfunction is quite likely to have other sexual dysfunctions as well. Despite both the tendency to confluence and the discrepancy between dysfunctions at the action vs statement levels, four clusters of women’s clinical dysfunctions clearly emerged: “sexual desire/interest”, “orgasm”, vaginismus” and “genital function”. Within each of these clusters, dysfunctions at the action and statement levels are systematically coherent, indicating that it is a matter of judgment which descriptor of dysfunction (dysfunction per se or distressing dysfunction) suits the clinician or the researcher best. Finding four distinct sexual function/dysfunction factors implies that caution should be taken when working with an instrument that aggregates different sexual functions on one continuous scale.

Only one study has to our knowledge previously addressed male sexual dysfunctions in relation to women’s distressing sexual dysfunctions (123). Hence, from the epidemiological point of view there is hardly any literature to which we can compare the main findings, that a partner’s manifest sexual dysfunction per se and a low level of satisfaction with partner relationship are very likely to co-occur with women’s distressing sexual dysfunctions. Bancroft et al. (123) measured distress during the past 4 weeks, by two items asking “How much distress or worry has your sexual relationship caused you?” and “How much distress or worry has your own sexuality caused you?” (4 graded scale.) In comparison with the measures applied by us, the phrase “own sexuality” may well refer to a very broad sphere of a woman’s sexual life. Bancroft et al. (123), however, found that dysfunctions of arousal, orgasm and vaginal lubrication were poor predictors of both their items “sexual distress”.

From a clinical interventional point of view, it appears more relevant to note dysfunctional distress rather than the per se category. The former reveals aspiration/achievement gap, probably reflecting a more accurate need for interventions in primary and secondary interventions. As pointed out in the introduction, different impairments – anatomical physiological disorders, which are not studied here - may of course have a very pronounced effect at the action level, and to establish an adequate differential diagnosis this level must be included in the case history. In this context it should be emphasized that we used single questions addressing the different areas of dysfunction. For instance, lubrication is only one part of sexual arousal (22, 124) not necessarily related to women’s subjective sexual arousal (125). In fact, lack of subjective sexual arousal is common despite normal genital vasocongestion; i.e genital arousal (126).
Let me now return to the four-factor pattern that emerged in the factor analysis, in which the factor by us termed genital function combined dyspareunia and lubrication. This finding supports Dennerstein et al. (127) who found that lubrication insufficiency and dyspareunia in 48-58 year old women form one distinct factor. Besides lubrication function/dysfunction being a part of combined subjective/genital arousal (22, 23), the genital function factor may to a great extent best be interpreted as a symptom of pain among other pain disorders rather than as a sexual dysfunction. This is in reasonable consensus with Meana and Binik (128), who suggested that dyspareunia should be considered primarily as a pain syndrome when investigating the clinical attributes and the variables used to classify dyspareunia. Moreover, Binik (129) recently suggested that the DSM-IV definition and diagnostic criteria of dyspareunia make little sense. He came to the conclusion that recent research on dyspareunia rather categorizes it as a pain disorder. In a series of comments on this article (130) some authors are eager to challenge while others applaud Binik’s point of view. If, however, dyspareunia is regarded as a pain disorder and not as a sexual dysfunction, it might perhaps in the future best be regarded as an important factor within the context of sexual behaviour and well-being.

Context, action and statement levels: Manifest distressing dysfunctions without exception, carried greater risks (larger ORs) of concurring with a low level of sexual well-being than those at the action. We found these associations to be clinically meaningful –as opposed to possibly clinically meaningful- and in consensus with the new classification and diagnostic system of women’s sexual dysfunctions (20). Consequently it seemed reasonable to search for concomitant conditions for sexual dysfunctions at the statement level.

It is hardly surprising that in the final multiple variables models a partner’s manifest or mild erectile dysfunction in a heterosexual relationship is closely related to women’s sexual interest and orgasmic function. A similar relation pertains between manifest early ejaculation and women’s manifest orgasmic dysfunction. These women are probably not given sufficient opportunity to reach sexual climax or, alternatively, their lack of interest and orgasm disturbs their partner’s sexual emotions. Interestingly, Bancroft et al. (123) found marked distress “with sexual relationship” in female partners of men with early ejaculation. It should here be noted that in a clinical sample Selahittin et al. (131) found that the partners of men with erectile dysfunction improved their orgasmic function as a consequence of pharmacotherapeutic intervention improving the erectile function. Moreover, that the partner’s erectile function in a heterosexual relationship is an important condition for women’s orgasm is illustrated by our finding that a majority of women experienced orgasm as best with penile-vaginal penetration.
The facts that orgasmic women were more likely than those with manifest
dysfunction and distress to perceive themselves as more easily sexually
aroused than most, that they attached relatively great importance to their
sexuality and that they had reached orgasm by manual or oral stimulation
may simply imply that orgasmic women have a relatively greater interest in
being sexually active. We can not, however readily explain why a relatively
eyearly age at first orgasm is borderline meaningfully associated with no vs
manifest dysfunction.

The co-variance of male erectile dysfunction with women’s dyspareunia
might tentatively be explained by his fear of causing pain in the woman
during sexual activity; her pain being a distractive element for his sexual
performance. A partner’s delayed ejaculation being associated with
lubricative distress may reflect these women’s discomfort during intercourse.
As women’s lubricational function decreases after the age of 50, it might be
that their partners’ delayed ejaculation is also a question of age. This may be
ture as in the Swedish population the male partner is usually older than the
woman, and it has been found that delayed ejaculation is considerably more
common in men aged 66-74 than in those aged 18-65 (32).

In Swedish women a satisfying and good partner relationship is closely
related to all sexual dysfunctions at the statement level with the exception of
dyspareunia. This finding appears to be in general consensus with findings
from other geographical areas: the UK (37, 51) and the USA (31, 123).
Laumann et al. (39) reported that high hopes about the future of the
relationship was significantly associated with good functions of sexual
interest, lubrication, orgasm and with absence of genital pain in some, but far
from all regions in the world. This association was particularly strong in
what the authors called the “Non-European West” (Australia, Canada, New
Zealand and the USA). Our finding that having seriously discussed
separation during the last 12 months was univariately closely related to
sexual interest at the statement level, and that this variable was weighted out
in the multiple variable models, may indicate a close coherence between the
stability of a partner relationship with the perceived satisfaction with the
partner relationship.

Levels of satisfaction with life as a whole and with different domains of
life can within the frame of this dissertation be considered as contextual
factors characterizing levels of adaptation/maladaptation over a broad sphere
of life. Among these, satisfaction with partner relationship has been
discussed above. It might reasonably be assumed that overall life adaptation
is a powerful contextual covariate with sexual functions/dysfunctions. In the
univariate analyses however, we found that neither satisfaction within the
domains of vocational and financial satisfaction nor satisfaction with ability
to manage daily self-care co-variated with sexual dysfunction at the
statement level, contradicting the findings of Laumann et al. (31, cf
introduction). That being satisfied with family life, leisure and contacts was
(univariately) closely related with sexual interest may be explained by the fact that recreational and socialization roles are important dimensions of marital satisfaction (132), and many years ago Goffman (133) felt that mutual leisure activities permit sharers to express relatedness and closeness. Somewhat surprisingly, satisfaction with somatic health was not closely related to sexual dysfunctions at the statement level. The observation that satisfaction with psychological health was closely related to sexual interest, orgasm and dyspareunia again underlines the close coherence between women’s psychological adaptation and their sexual function. This argument also pertains to the close (univariate) correlations between level of satisfaction with life as a whole and all manifest sexual dysfunctions at the statement level. However, with the exception of a clinically meaningful association between level of satisfaction with life as a whole and dyspareunia, virtually all these co-variances were weighted out in the multiple variable models.

Another contextual factor is sexual abuse. My research activities started out with a wish to clarify, using available data, the extent to which having ever been sexually abused was associated with sexual dysfunctions. I here choose to devote special interest in discussing abuse in relation to sexual functions. Sexual abuse, with the definition applied by us, was prevalent in 12% of our sample of Swedish women. This is in reasonable consensus with the findings of Swahnberg et al. (134) from Sweden who found a prevalence of sexual abuse of 16-17% and with the 17% reported in Californian women (135). With the exact same measures as that of Sorensen et al. (135) George et al. (136) found a prevalence of 6% in North Carolinian women. These authors concluded that prevalence variations reflected a true difference of cultural and historical factors. Several clinical reports (137, 138) provide support to our finding that a considerable number of the sexually abusive acts and situations (shown in table 3) are negatively associated with all sexual functions, and in particular with orgasmic function at the action level. For instance, in a clinical series of sexually assaulted women Becker et al. (137) found a higher prevalence of desire and arousal dysfunctions and anorgasmia than in women with no history of sexual assault. Ellis et al. (139) suggested that the reason for sexual maladjustment is that exposure to sexual abuse elicits sexual dysfunctions because the victims view sex in a different, less positive context. The present results indicate that sexual abuse may primarily lead to anxiety concerning ridding oneself of one’s inhibitions in complete psycho-physiological sexual enjoyment. A speculative explanation is that exposure to sexual abuse causes a lack of basic trust in the woman herself; and basic trust is prerequisite for intimacy and the ability to reach orgasm.

The association between sexual abuse and sexual function at the action level found in I could not, however, be firmly re-established at the statement level. The fact that (with some reservation for different statistical methods
being used in I and III) the occurrence of sexual abuse was marginally, though significantly, associated with different aspects of sexual function/dysfunction at the statement level can probably be regarded as an adaptational factor. In other words, the abuse has a profound defensive effect on sexual functions per se but this is only to a minor degree accompanied by distress. This thought appears further supported by the multiple variable models which eliminated sexual abuse as a significant companion of dysfunctional distress. In the multiple models, sexual abuse was only associated with manifest distressing orgasmic dysfunction and again with doubtful clinically meaningfulness. It has to be concluded that in comparison with numerous other conditions, sexual abuse is of less importance to women’s sexual functioning. In this context it should be noted that Rind and Tromovitch (140), in their critical meta-analytic review generally encompassing adults over 18 years, reported that childhood sexual abuse “was related to adjustment problems but the magnitude of these relations was small”.

*Emotion, action and statement levels:* It is hardly surprising that manifest sexual dysfunctions inevitably are closely (univariately) associated with low level of sexual well-being (cf 86, 32, 93). In this context it should be remembered that in this sample all women’s manifest dysfunctions are closely linked to each other (93). Hence, this measure may best be seen as a measure for describing women’s perceived overall sexual adaptation.

I have previously discussed whether mild dysfunctions might be a “normal” condition. However, the finding that, at both the action and statement levels, both manifest and mild dysfunctions were significantly associated with low levels of sexual well-being indicates that even mild sexual dysfunctions characterize unwanted aspiration/achievement gaps. Such discrepancies can hardly be cynically regarded as normal states.

It deserves special attention that among all sexual dysfunctions, orgasmic dysfunction, especially if distressing, generally carries with it the greatest likelihood (greatest ORs) to be associated with low levels of sexual well-being (univariate analyses). In these analyses (IV), dysfunctions at the statement level were more likely than those at the action level to accompany low level of sexual well-being, thus supporting the case-analysis construct. It is clearly relevant, then, to pay special attention to elements of personal sexual distress in a clinical context. The relative likelihoods of co-occurrences between dysfunctions at the action and statement levels with low levels of sexual satisfaction is further illuminated by the fact that in the post-scriptum multiple models “weighing”-process, orgasmic dysfunction whether manifest or mild, was the most important covariant of low level of sexual well-being. Thus, having no orgasmic dysfunction is the single most important indicator of a good level of sexual well-being compared with the
other areas of sexual function studied here. This finding is supported by Haavio-Mannila et al. (80), who found that frequent orgasms predicted physical sexual satisfaction.

That one fourth of women aged 18-65 were very satisfied with their sexual life is a slightly lower prevalence than the 32% found by Kontula and Haavio-Mannila in 18-74 year-old women (75). On the other hand, in their 5-grade satisfaction scale, 83% were at least rather satisfied, a proportion quite similar to the 85% found here and also to the 80% at least quite satisfied in the UK (86).

Finally the fact that 61% of the 18-65 year-old Swedish women had a high gross level (satisfied or very satisfied) of sexual well-being, a proportion nearly identical to that of 18-64 year-old Swedish men (81) - indicates that much attention should be devoted to improving the negative conditions underlining quality of sexual life in Sweden.

In summary

- Narrowly defined (i.e. as forced), sexual abuse has occurred one or more times in every eighth Swedish woman in the age-span of 18-74. Having been a victim of sexual abuse constitutes a significant factor for future sexual dysfunctions, especially the ability to achieve orgasm. Sexual abuse is also negative for level of sexual well-being.

- Classification of levels of sexual functions/dysfunctions per se and of personal sexual distress into no, mild and manifest, demonstrates that many Swedish women perceive themselves as either manifestly or, more common mildly sexually dysfunctional. Being distressed is, however, systematically less common than is dysfunction per se. A low level of sexual well-being is associated with both manifest and mild sexual dysfunctions per se as well as distressing. This is particularly true for orgasmic function. Pair wise, functions/dysfunctions per se and distressing form a four-factor pattern sexual interest/desire, orgasm, vaginismus and genital function. The genital function factor probably mainly describing age and a pain syndrome.

- Several socio-psychological characteristics of the perceived life-situation of Swedish women can be regarded as significant for their sexual functions/dysfunctions and, hence, for their sexual well-being. Applying a restrictive view of the degree of clinical
meaningfulness of these characteristics, it appears that the most pertinent condition for Swedish women’s sexual well-being is partnership adjustment.

- The clinical implications of our findings are that, in sexual medicine/sexology the case analysis must include not only aspects of physical or mental disorders – not investigated here- but must also meticulously search for possibly sexually maladaptational conditions in order to identify pertinent conditions for women’s sexual well-being.
ACKNOWLEDGEMENTS

I would like to express my sincere gratitude and warm acknowledgments to the many people and institutions that supported me in the completion of this dissertation. I especially thank:

Associate Professor Kerstin Fugl-Meyer my primary supervisor and co-worker, without whom this dissertation never had been realized. Thank you for generously inviting me to share your broad clinical and scientific knowledge in the field of sexual medicine, your most skilful guidance and last but not least, your valued friendship.

Professor Emeritus Axel Fugl-Meyer, my supervisor and co-worker, former head of the Unit of Rehabilitation Medicine for his invaluable guidance. Thank you for sparing no time sharing your impressive scientific knowledge.

Professor Emeritus PO Lundberg, my supervisor and co-author, for sharing his deep knowledge and warm encouragement.

Professor Bo Lewin, co-author and coordinator of the investigation “Sex in Sweden”, for constructive suggestions and friendly support.

The Department of Neuroscience, Unit of Rehabilitation Medicine and Professor Jörgen Borg for support and facilities.

Colleagues at the Department of Neuroscience, Rehabilitation Medicine, in particular Lena Jemtä and Roland Melin, for their interest, valuable discussions and support.

Gun Schönnings, Lotta Sjölander and Anita Andersson, staff at the Department of Neuroscience Rehabilitation Medicine and former Sexology Unit, for always being most helpful and supportive.

The Swedish National Institute of Public Health and in particular Kristina Ramquist, for initiating and financing the main study “Sex in Sweden” and financially supporting the work of this dissertation.

Swedish Pfizer AB for unrestricted grant.

Elizabeth Kella for excellent linguistic revision.
Anna Johansson, Statisticon AB, for valuable statistical advice.

My colleagues and dear friends at Sexologmottagningen, Huddinge University Hospital, Cecilia Dhejne-Helmy, Madelaine Krook, Eva-Marie Laurén and Anna-Lena Hallström for their interest, support and encouragement.

All my beautiful girlfriends AnnaE, HelenaO, MalinR, MalinB, JohannaA, SophieU, KarinH, Pinglan, MärtaB, U-K, NinaY and all the Showgirls making life a little bit more glamorous. Special thanks to HedvigW for valuable contributions to the true meaning of “Diamonds are a girl’s best friend”.

My brother Fredrik, for his impressive patience at the computer processing embryonic figures, and for growing from being a “little-brother” to one of my closest most reliable friends.

My sister-in-law Anna, for being the best thing that has ever happened to the family and important contributions for making it just better and better.

Anna and Axel for releasing me from the tough task of baby-sitting you to giving me the pleasure knowing you as beautiful and intelligent adults.

My god-daughters, Alva and Majken in the hope that they will know the location and name for clitoris and become the first generation truly free from “framstjärten”.

My parents for their encouragement from the very beginning, logistics and parental love.

My children, Harald, Max and Pelle for accepting everything and nothing and being all that matters in the end. And finally my thanks to Leif, in what most certainly is a mutual relief that we will now turn another page in our 20-year-long book of life together.
REFERENCES


24. Tiefer L. Beyond the medical model of women’s sexual problems: a campaign to resist promotion of "female sexual dysfunction". Sex Rel Ther 2002; 17: 127-135.


34. Eplov LF. Sexuality its theory and a prospective population investigation in Copenhagen county with special focus on the impact of aging and personality traits. (In Danish) [Medical dissertation]: Copenhagen University. Copenhagen, Denmark; 2002.


139. Ellis EM, Calhoun KS, Atkeson BM. Sexual dysfunction in victims of rape: Victims may experience a loss of sexual arousal and frightening flashbacks even one year after the assault. Women & Health 1980; 5: 39-47.

Acta Universitatis Upsaliensis

Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine 51

Editor: The Dean of the Faculty of Medicine

A doctoral dissertation from the Faculty of Medicine, Uppsala University, is usually a summary of a number of papers. A few copies of the complete dissertation are kept at major Swedish research libraries, while the summary alone is distributed internationally through the series Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine. (Prior to January, 2005, the series was published under the title "Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine").