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The Zurich Study: XXI. Sexual dysfunctions and disturbances in young adults

Data of a longitudinal epidemiological study

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Summary. In a cohort of young Swiss adults, sexual disturbances and dysfunctions were assessed by interview four times between ages 20 and 30 years. Over 10 years almost every second female and every third male subject reported disturbances. In females at age 30 years, the prevalence of orgasmic difficulties and of dyspareunia corresponded to non-clinical samples of other studies. Also, in accordance with the literature, impaired interest was much more prevalent in females. In males and females, sexual disturbances were to some extent associated with anxiety and depression; in addition, in women, they were also associated with social phobia and eating disorders. With regard to neuroticism, negative affect and reports of an unsatisfactory childhood, subjects with temporary disturbances resembled more strongly those with chronic problems than controls. Compared with the controls, women's sexual disturbances were more chronic and more strongly associated with minor psychiatric symptoms and personality deviance; this finding was less pronounced in men.

Key words: Sexual dysfunction – Longitudinal investigation – Prevalence – Chronicity – Depressive and anxiety disorder – Sex differences

Introduction

Whether sexual disturbances and dysfunction are a discrete problem or usually associated with psychiatric disorder is controversial. The following studies compared patients of special clinics for sexual problems with controls. Derogatis et al. (1981) found elevated scores of patients on the symptom check list SCL-90R (Derogatis 1977). Fagan et al. (1988) diagnosed DSM-III disorders in one third of men and women consulting with various sex-related complaints, affective and personality disorders being most prominent. The authors concluded that psychosexual dysfunction in most patients was a discrete disorder. Schreiner-Engel et al. (1986) arrived at the contrary conclusion, investigating patients presenting with inhibited sexual desire; comparing subjects without actual Axis-I disorders with controls fulfilling the same condition they found in the first group a majority with lifetime affective disorder (double the rate of controls).

There is a lack of studies on the prevalence and the comorbid associations of sexual dysfunction in the general population, an outstanding exception being Osborne et al.'s (1988) investigation of Oxford women. In this study, impaired sexual functions were connected with PSE-ID diagnoses (18% vs. 7% in controls) and with an elevated neuroticism score in the Eysenck Personality Inventory, but the majority of subjects with complaints were healthy.

Our Zurich study aimed at prospectively assessing the presence and development of psychiatric and psychosomatic symptoms in young adults; thus collecting data on sexual dysfunctions and disturbances was only one of many other aims. The main value of the data presented here may lie less in prevalence rates of sexual problems but in that repeatedly assessed and summarily defined disturbances are put in the context of various psychiatric symptoms, syndromes and diagnoses, and this over 10 years and in a stage of life when creating a stable sexual relationship is an important milestone of psychosocial development.

On the basis of the literature mentioned above and of our longitudinal data we will discuss two hypotheses: 1. Sexual dysfunctions between ages 20 and 30 years are frequent but mainly transitory adaptational difficulties; 2. sexual difficulties are discrete disorders not usually connected with psychiatric disorders.

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Methods

The sample of the Zurich study was selected in 1978 from a survey of 2201 conscripts (age 19 years) and 2346 females reaching majority (age 20 years). The SCL-90R by Derogatis (1977) was used to define a group at heightened risk consisting of all high scorers (85th percentile or more). They made up two thirds of the final longitudinal sample, the remainder being randomly selected from subjects scoring below the 85th percentile.

By this method 292 males and 299 females were followed up with four interviews from age 20/21 years to age 29/30 years in 1979, 1981, 1986 and 1988. In 1988, the response rate was 67.5% for males and 72.9% for females. The interviews were given at home by trained graduate female psychologists and lasted 2–4 h. A large number of psychiatric and psychosomatic syndromes was covered and data on social variables gathered. To obtain prevalence data from this selected sample, frequencies had to be weighted back to the general population. In the case of rare symptoms and syndromes, this procedure is fraught with some uncertainties.

At each interview the subjects were given the same probe question: "During the last 12 months, were you dissatisfied with your sexual life or did you experience any difficulties?" At the beginning of the study, it was felt that detailed questioning on sexual problems was extremely delicate. As subjects appeared quite interested and ready to answer, the questions in the course of time became more explicit.

In 1979 and 1981, if the subjects' answered the probe question in the affirmative, the interviewer first mentioned functional disturbances, giving for an example impotence or orgasmic difficulties, and then emotional problems, giving for an example inhibitions or guilt feelings. The subjects' answers (yes or no) were then coded. In 1986 and 1988, the assessment became more thorough. In 1986, a list of mainly psychological disturbances was systematically discussed, such as reduced sexual drive, inhibitions, guilt feelings, painful intercourse. Other disorders were cursorily mentioned as before. In 1988, psychological problems were checked as mentioned above and functional disturbances finally were explicitly assessed: erectile dysfunction, premature ejaculation, delayed ejaculation, female orgasmic difficulties, painful intercourse, vaginismus. At each interview and for each syndrome, the subject was presented with a visual analogue scale (0–100), on which to indicate the degree of stress caused by the syndrome. A question on help-seeking followed. In the context of an assessment of life events (Tennant and Andrews 1976), which was dispersed over each interview, subjects were questioned on their partner relationship.

During the course of the study, affective syndromes (anxiety and depression) were increasingly defined according to DSM-III. Anxiety disorders include panic attacks, generalized anxiety, agoraphobia, social phobia, simple phobias, and recurrent brief anxiety (Angst and Wicki 1992). Depressive disorders include DSM-III major depressive disorder, dysthymia, minor depression, and brief frequently recurring bouts of depression with work impairment ("recurrent brief depression", Angst et al. 1990). The diagnosis of social phobia was given according to DSM-III criteria in 1986 and 1988. The presence of eating and weight problems was defined by a positive answer to a direct probe question given in 1986 and 1988. The presence of menstrual complaints was defined by a positive answer to a probe question on somatic or psychological symptoms shortly before or during menstruation. Childhood personality was cursorily assessed in 1986 with four questions on behaviour pointing to anxiety, nine questions on externalizing behaviour and one question on being unpopular with peers. Familial risk factors in childhood were assessed in 1988 by presenting the subjects with a list of 15 conditions known to be associated with childhood disturbances, such as chronic illness of parents, parental discord, familial conflicts, poverty. Traumatic sexual experiences before age 16 years were assessed by a probe question on disagreeable sexual encounters and the short descriptions were then rated. Those including sexual contacts with adults, with family members or violent approaches were considered traumatic experiences (Ernst et al. 1993).

Table 1. Frequency of sexual disturbances and dysfunctions (age 20/21–29/30 years)

	1979 N = M 292 F 299 %	Sex ratio	1981 M 220 F 236 %	Sex ratio	1986 M 225 F 218 %	Sex ratio	1988 M 197 F 218 %	Sex ratio
Probe question								
Any sexual disturbances/dysfunction								
Both sexes	17		17		21		25	
Males	11	2.2	7	3.9	20	1.2	26	0.9
Females	24		27		23		24	
Problems regarding sexual desire								
Increased desire	–		–		2		4	
Reduced desire								
Both sexes	–		–		13		14	
Males					8	2.1	10	1.8
Females					17		18	
Emotional problems								
Both sexes	12		13		11		11	
Males	8	1.9	5	4.0	9	1.4	7	2.1
Females	15		20		14		15	
Functional disturbances								
Both sexes	6		5		6		9	
Males	3	3.0	2	4.3	4	2.0	5	2.4
Females	9		9		8		12	

Table 2. One-year weighted prevalence of sexual dysfunctions and disturbances

	1979 %	Sex ratio	1981 %	Sex ratio	1986 %	Sex ratio	1988 %	Sex ratio
Any sexual disturbances/dysfunction								
Both sexes	14.5		13.3		17.8		21.1	
Males	7	3.0	5	4.2	16	1.2	21	1.0
Females	21		21		19		21	
Problems regarding low sexual desire								
Both sexes					13.1		14.7	
Males					5	3.2	7	2.3
Females					16		16	
Emotional problems								
Both sexes	10.1		9.5		8.0		5.5	
Males	4	4.0	3	5.0	5	1.7	5	1.2
Females	16		15		11		6	
Functional disturbances								
Both sexes	4.6		4.3		5.2		7.3	
Males	3	2.0	3	2.0	2	4.0	5	2.0
Females	6		6		8		10	

At each interview, subjects answered the Syndrome Check List (SCL-90R) by Derogatis (1977) and in 1988 they were given the Freiburg Personality Inventory (FPI; Fahrenberg et al. 1973).

As manifold examinations of the same hypothesis may lead to errors of the α-type, results at the $P \leq 0.01$ level were accepted as significant.

Table 3. Rate of sexual disturbances connected with a cut-off of distress 30 + (visual analogue scale 0–100)

	1979 %	1981 %	1986 %	1988 %
Emotional problems	60.1	80.7	82.7	80.4
Disturbances of desire	–	–	77.6	66.7
Functional disturbances	54.0	75.0	71.4	75.7

Results

Frequencies and prevalences

With regard to frequences, i.e. on the level of the interviewed sample, one sixth of our sample of 20–21 year-olds and one quarter of the 29–30 year-olds reported sexual problems, mainly concerning desire and emotions.

From age 20 years to age 30 years about one quarter of the female subjects consistently answered the probe question in the positive. During the same period, the males' rate increased from 11 to 26%. Sex ratio on the probe question level thus decreased. On the level of more specific complaints, however, there was a consistent female predominance for emotional problems, reduced desire and functional disturbances.

In Table 2, weighted prevalence data are given for the main categories. At age 30 years, we obtained the following 1-year weighted prevalences for specific functional disturbances in females: painful intercourse and vaginismus 6% and orgasmic difficulties 7%.

A first question arises concerning the relevance of these complaints (Table 3). At age 29–30 years, two thirds to four fifths of reported sexual disturbances were associated with at least a medium degree of distress (≥ 30 on the visual analogue scale). With the passage into adult age, sexual disturbances became slightly more weighty. Emotional, functional and problems of reduced desire were given the same relevance by the subjects. In 1988, 20.8% of females and 5.9% of males with any sexual problems had consulted a physician or a psychologist in this context.

Associations of sexual disturbances and dysfunctions with psychiatric symptoms and syndromes

Both men and women who reported sexual problems at some time during 10 years had a slightly higher risk than controls of receiving at least once either a diagnosis of anxiety or depressive disorder. With the definitions mentioned above, rates of cases were high, but less than twice the rates of controls. Among females, comorbidity appeared slightly more often: in particular, there was an association of sexual problems with social phobia in females, which did not appear in men (Table 4).

Also, in women but not in men, sexual problems were associated with widely defined eating and weight problems (odds ratio 1.96; confidence limits 1.12–3.42). As lowered sexual interest or desire may be a symptom of a depressive state and as almost one fifth of women and one tenth of men mentioned a lack of desire as a problem at age 30 years, a possible association of reduced interest at this age with a diagnosis of depression as defined above between age 20–21 years and 29–30 years was investigated. Of men who reported reduced desire,

Table 4. Comorbidity of sexual disturbances with a diagnosis of anxiety or depressive disorder 1979–1988 (ages 20/21–29/30 years) by sex

	Males ($N = 292$)			Females ($N = 299$)		
	Cases ($N = 101$)	Controls ($N = 191$)	P	Cases ($N = 139$)	Controls ($N = 160$)	P
Anxiety disorder						
Frequencies	31.7%	18.9%	0.01	43.2%	25.6%	0.001
Odds ratio (confidence limits)	2.0 (1.2–3.5)			2.2 (1.4–3.6)		
Depressive disorder						
Frequencies	53.3%	32.9%	0.001	69.1%	43.8%	0.000
Odds ratio (confidence limits)	2.3 (1.4–3.8)			2.9 (1.8–4.6)		
Social phobia						
Frequencies	4.3%	3.0%	ns	15.4%	4.6%	0.006
Odds ratio (confidence limits)	–			3.8 (1.4–10.8)		

Table 5. SCL-90R total scores in men and women with and without sexual problems during the year covered by the interview

		1978	P	1979	P	1981	P	1986	P	1988	P
Men:	Sexual problems	0.76		0.89		0.86		0.61		0.58	
	Controls	0.65	ns	0.63	0.005	0.51	0.03	0.49	0.008	0.43	0.01
Women:	Sexual problems	1.15		0.95		0.91		0.71		0.82	
	Controls	0.97	ns	0.73	0.003	0.56	0.001	0.52	0.01	0.50	0.000

(Wilcoxon 2-sample test)

68.4% vs 42.7% of controls had been given a diagnosis of depression at least once ($P = 0.03$, odds ratio 2.91, confidence limits 1.06–8.00). The difference of the corresponding values for women was, while pointing in the same direction, non-significant (72.5% of the cases vs 50% of controls had ever been given a diagnosis of depression). So reduced sexual interest was more strongly connected with depression among men. Surprisingly, sexual disturbances in women were independent of the occurrence of menstrual pain and premenstrual tension.

Association of sexual disturbance and dysfunctions with negative affect and personality variables

Both men and women who reported sexual disturbances at some time between age 20–21 years and 29–30 years persistently differed from controls on the SCL-90R which was given five times (1978 for the screening; then at each interview) and which measures psychological and psychosomatic symptoms over the last 4 weeks. The association of sexual disturbances with psychological distress appeared in a consistent difference on total score. Over 10 years, women with sexual disturbances regularly differed on each subscale from female controls, whereas men did so for depression, anxiety, interpersonal sensitivity and psychoticism (Table 5).

On the FPI (Fahrenberg et al. 1973), subjects with sexual problems differed from controls at age 29–30 years in regard to nervousness, spontaneous and reactive aggression, depressiveness, and higher excitability; women alone showed lower stability and sociability. Men and women gave higher scores on the secondary scale of neuroticism.

For both men and women, sexual problems were associated over 10 years with reporting stress and conflict in the partner relationship (Table 7).

Temporary vs chronic sexual problems

If only the subsample of 356 subjects who took part in each of the four interviews from 1979 to 1988 is selected, the 10-year frequency and prevalence of sexual problems within this young cohort seem extraordinarily high. Half of the subjects mentioned sexual problems at least once (Table 8).

As reported above, between ages 20 and 30 years, sexual disturbances were increasingly associated with distress. So the question arises as to what degree sexual disturbances are merely temporary adaptation reactions and to what degree persistent, (i.e. possibly impairing) disorders and whether an association with other psychological and psychosomatic dysfunctions is limited to sexual disturbances with a chronic course. We approximately defined subjects reporting sexual disturbances in least at two of the four interviews as having "chronic" and those who did so only in one interview as having "temporary" problems. The definition is open to criticism because only 4 of 10 years were actually covered by four interviews.

There was a group of 26 men (15.8%) and 59 women (30.7%), who reported sexual problems at least at two interviews (Table 9). The sex difference is significant at $P \leq 0.001$ (χ^2-method): women by the above definition

Table 6. Personality scores FPI, age 29/30 years, for subjects reporting sexual problems at least once 1979–88 (Wilcoxon test)

FPI scales	Males ($N = 194$)			Females ($N = 222$)		
	Cases ($N = 85$)	Controls ($N = 109$)	P	Cases ($N = 117$)	Controls ($N = 105$)	P
1. Nervousness	16.47	14.18	0.01	19.42	17.32	0.01
2. Spontaneous aggression	19.60	16.01	0.002	16.61	13.72	0.002
3. Depressiveness	15.95	12.55	0.002	16.27	12.41	0.003
4. Excitability	19.90	17.86	0.08	24.69	20.35	0.002
5. Sociability	20.12	19.76	ns	19.17	21.66	0.02
6. Stability	15.78	17.13	ns	13.03	15.70	0.02
7. Reactive aggression	18.12	16.34	0.07	16.38	14.21	0.03
8. Inhibition	18.18	16.92	ns	22.17	20.16	ns
9. Frankness	20.30	17.19	0.002	17.93	14.70	0.006
E Extraversion	19.14	16.95	0.07	17.71	17.98	ns
N Neuroticism	18.12	14.86	0.001	18.45	14.50	0.0001
M Masculinity	20.04	20.90	ns	13.59	14.46	ns

(Wilcoxon 2-sample test)
T-transformed values ($x = 20$, $s = 8$)

Table 7. Association of sexual disturbances with stressful relationship and conflict with partner (1979–88)

	Males ($N = 292$)			Females ($N = 299$)		
	Cases ($N = 101$)	Controls ($N = 191$)	P	Cases ($N = 139$)	Controls ($N = 160$)	P
Emotional stress	21.8%	9.4%	0.003	39.6%	15.0%	0.000
Odds ratio (confidence limits)	2.7 (1.4–5.3)			3.7 (2.1–6.4)		
Conflict	14.9%	5.4%	0.005	25.2%	8.1%	0.000
Odds ratio (confidence limits)	3.2 (2.1–6.4)			3.8 (1.9–7.5)		

Table 8. Frequency and 10-year prevalence of sexual dysfunction/disturbances from age 20/21 years to age 29/30 years (longitudinal sample, $N = 356$)

	Males ($N = 164$)		Females ($N = 192$)		Total ($N = 356$)	
	n	%	n	%	n	%
Any sexual disturbances/dysfunctions (prevalence)	74	45.1 (36.8)	106	55.2 (48.1)	180	50.6 (42.6)
Emotional problems (prevalence)	40	24.4 (16.1)	76	39.6 (30.6)	116	32.6 (23.6)
Functional disturbances (prevalence)	22	13.4 (13.7)	58	30.2 (23.4)	80	22.5 (18.7)

Table 9. Recurrence/chronicity of sexual disturbances over 10 years (longitudinal sample, $N = 356$)

Disturbances reported at	Males ($N = 164$)			Females ($N = 192$)		
	n	%		n	%	
No interview	90	54.9		86	44.8	
1 interview	48	29.3		47	24.5	
2 interviews	21	12.8	$n = 26$ (15.8%)	34	17.7	$n = 59$ (30.7%)
3 interviews	5	3.0		19	9.9	
4 interviews	0	–		6	3.1	

$\chi^2 = 10.768$; $P \leq 0.01$

tended to a more chronic or recurrent course than men. Thus, 35.1% of the men with any sexual disturbances and 55.6% of women with any disturbances reported a chronic course. The chronic group and that with temporary problems were compared with controls in regard to four variables: their report of childhood emotional and behavioural problems and of their familial background, their actual emotional status at four interviews over 10 years, and their FPI scores at age 30 years.

Reported externalizing and internalizing *childhood behavioural problems* tended to increase with the stability of sexual disturbances. Men with chronic sexual prob-

lems described themselves as having had non-significantly more disciplinary problems, fights with peers and problems with the police than both comparison groups. Subjects both with temporary and those with chronic problems described themselves significantly more often than controls as having been unpopular with peers. Among women, those with chronic problems described themselves as having been significantly more often anxious and unpopular than both comparison groups. Thus, in men, chronicity of sexual problems seemed slightly associated with childhood externalizing problems. In women, chronicity of sexual problems seemed associated with childhood emotional difficulties. Reported lack of popularity with peers appeared in both sexes.

Also, familial risk factors in childhood were associated with sexual disturbances. Summing up the factors led to scores that linearly increased for females, with the chronic cases presenting a significantly higher score than controls. In men, scores were highest for those with temporary problems; and both groups with sexual disturbances scored significantly higher than controls (Table 10).

A further sex difference appeared in that, for women, chronicity of sexual disturbances and dysfunctions tended to be connected with traumatic sexual experiences before age 16 years (Table 11). The association did not appear for our male subjects, who rarely reported such experiences. There was an association of chronic disturbance in women with abuse by relatives (15.2% in such cases; 1.2% in non-abused subjects) which, however, did not reach statistical significance.

In men, FPI-scores at age 30 years increased with the presence of any sexual problems and of chronic problems for the primary scales of nervousness, aggressivity, depressiveness, striving for dominance and openness and also for the secondary scales of extraversion and neuroticism and two factorial scales of aggressivitiy and neuroticism (Angst and Clayton 1986). Scores on stability (resilience) decreased with increasing presence of sexual problems. Males with temporary sexual problems were more similar to those with chronic problems (non-significant differences) than to controls (significant differences) on the primary scales of nervousness and depressiveness and on the secondary scales of extraversion and neuroticism, as well as on neuroticism as a factor.

Table 10. Childhood risk factors in subjects with temporary and chronic sexual problems (longitudinal sample, $N = 356$)

	Number of childhood risk factors	
	Men	Women
1. Controls	1.5*	2.5[a]
2. Temporary problems	3.1**	3.3[b]
3. Chronic problems	2.8	3.7
Wilcoxon	* 1 vs 2 0.001; 1 vs 3 0.03;	** 2 vs 3 ns
2-sample test	[a] 1 vs 2 ns; 1 vs 3 0.009;	[b] 2 vs 3 ns

The 14 risk factors: broken home, chronic somatic/psychiatric illness in parents and/or sibs, parental discord, severe conflicts with parents/sibs, other conflicts, severe financial problems, severe punishment, neglect, family not well regarded, early sexual trauma

Table 11a. Chronicity of sexual disturbances and early traumatic sexual experience in women (longitudinal sample)

	Trauma
Females with chronic problems (diagnosed at 2+ interviews, $N = 59$)	18.6%
Females with temporary problems (diagnosed at 1 interview, $N = 47$)	10.6%
Controls ($N = 86$)	7.0%

$\chi^2 = 4.736$, $P = 0.09$

Table 11b. FPI neuroticism scores and chronicity of sexual problems (longitudinal sample, $N = 356$)

	Secondary scale neuroticism	P*	Factor neuroticism	P*
Men				
0	14.34	0.01	13.51	0.01
1	17.51	ns	16.53	ns
2+	18.08		18.13	
Women				
0	14.08	0.04	15.19	0.02
1	17.74	ns	17.94	ns
2+	18.56		19.67	

0, 1, 2+: Sexual disturbances mentioned at one or at least two interviews or never
* P: Wilcoxon 2-sample test

In females, the same increase of scores with the mere presence with or without chronicity of sexual disturbances appeared for all primary scales (with the exception of inhibition) and for the secondary scale of neuroticism. Stability and extraversion (factorial scale) decreased with the presence of sexual disturbances. The factorial scales of aggressivity and neuroticism were elevated. Females with temporary problems more closely resembled females with chronic problems (non-significant difference) than controls (significant differences) for aggressivity, depressiveness, excitability, striving for dominance and openness, for the secondary scale of neuroticism and for the factorial scales of neuroticism and aggressivity.

The last comparison of persons with temporary and chronic sexual disturbances refers to the *SCL-90R*. In comparison with male controls, men with any and with chronic sexual problems showed consistend deviations in total score (1979–86), in the depression score (1981–86), in anger (1981–86), in psychoticism (1981–88), and a tendency to deviate in obsessive compulsive traits (1979–81). Many differences were, however, mere statistical trends. Among 50 comparisons, there were 14 significant differences of males with chronic and temporary problems from controls and in 10 comparisons (i.e. in 71% of 14 comparisons) subjects with temporary disturbances more strongly resembled "chronic" cases (non-significant differences) than controls (significant differences).

On the SCL-90R, females both with chronic and temporary sexual disturbances deviated much more often from controls than males. Whenever the scales were presented, they produced definitely higher total scores than

Table 12a. Frequencies of sexual disturbances and dysfunctions in the general population (Studies not included in Nathan 1986)

Females	*N*	Presence of difficulties, dissatisfaction %	Impaired interest %	Orgasmic difficulties %	Pain dysparenuia %
Nathan (1986) (survey of 22 studies)		–	35	5–15	–
General population studies					
Pfeiffer et al. (1972) 46–50-year-old insurance clients (point prevalence)	43	–	30	–	–
Garde et al. (1980) 40-year-old Danish women (point prevalence)	324	35.4	41.8	36.7	1.3
Osborn et al. (1988) 35–59-year-old Oxford women	521	–	17 (1 year prev.) (4)*	16*** (5)*	8 (3 months prev.) (0)*
Zurich Study, interview 1988 30-year-old women (1-year prevalence)	218	21	16	7	6
General practice studies					
Buus Jensen et al. (1980), Copenhagen (excluding chronic illness, age 26–45 years)	40	25	22	8	–
Buddeberg et al. (1984), Zürich (17–63-year-olds)	88	51.8	32.5	22.9	15.7
Pepe et al. (1989) (check-up patients, gynaecology, Catania) (point prevalence)	360	51.6	–	53.8	36.6
Schein et al. (1988), USA (20–40-year-olds) (point prevalence)	148	27	50	18	21
Shahar et al. (1991), Israel (30–50-year-olds) (point prevalence)	69	–	–	23	13

* Parentheses: rates at age 35–39 years
*** Parentheses: never experienced orgasm in last 3 months

Table 12b. Frequencies of sexual disturbances and dysfunctions in the general population (Studies not included in Nathan 1986)

Males	*N*	General difficulties, dissatisfaction %	Impaired interest %	Erectile dysfunction %	Premature ejaculation %
Nathan (1986) (survey of 22 studies)		–	16	10–20	35
General population studies					
Pfeiffer (1972) 46–50-year-old insurance clients	43	–	9	–	–
Nettelblad et al. (1979) (married men with children)	58	57	–	7	38
Spector et al. (1986) (questionnaire to men in work force)	93	–	–	(23)*	–
Zurich Study, interview 1988 29-year-old men (one-year prevalence)	197	21	7	0	4
General practice studies					
Buus Jensen et al. (1980), Copenhagen (excluding chronic illness, age 26–45 years)	40	12.5	2.5	0	10
Buddeberg et al. (1984), Zürich (17–63-year-olds)	76	40.6	–	7.2	27.5
Schein et al. (1988) (20–40-year-olds)	64	8	14	27	41
Shahar et al. (1991) (30–50-year-olds)	93	–	–	10	25

* Parenthesis: lifetime prevalence

controls (1978–1988). They consistently appeared more anxious, depressed and angry and gave particularly high scores on interpersonal sensitivity. On three occasions they deviated from controls on the scales of paranoid thinking and phobia and on four occasions on psychoticism. Thirty-six of 50 comparisons with controls gave a significant result. In 33 comparisons (i.e. in 92% of 36 comparisons), women with temporary sexual troubles resembled those with chronic problems more (non-significant differences) than controls (significant differences) (Tables not shown).

Discussion

We will first address the question of frequencies and prevalences of sexual disturbances in the general population. As mentioned before, part of our subjects were a high-risk group and therefore prevalence had to be weighted. In Table 12 a and b, data from segments of the general population and practice data are given that were either not mentioned in the well-known Nathan (1986) survey or appeared at a later date. They are compared with disturbances assessed in the Zurich study at age 30 years, when questioning was at its most explicit.

The level of general dissatisfaction is astonishingly high and general practice subjects resemble the general population very closely. Dissatisfaction was mentioned by half of a sample of Danish married men and by one third of Danish middle-aged women. At age 29–30 years, 21% of our Zurich subjects reported sexual difficulties or problems during the last year (weighted prevalence). Over 10 years (age from 19–20 to 29–30 years) one third of the males and half of the females were affected at least once (weighted prevalence).

Though, as mentioned earlier, our method of assessment over the years became much more explicit and hence probably more effective, the probe question never changed and the answers remained comparable. From age 20 years to 30 years the weighted prevalence of males reporting sexual problems rose from 7% to 21%, while for women it remained stationary at about 20%.

The male increase may be due to habituation to being interviewed by female psychologists on intimate matters, to changing cultural influences that increasingly allow men to admit a weakness, or to sexual life really becoming more difficult for young men passing from adolescence to adulthood. Sexual problems may become more important in lasting relationships, which are started at a later age in males than females.

There is an argument for a real rise of general sexual disturbances in males: even when admitting to problems in general, they never specified. The subclasses (problems with desire, emotional problems, functional disturbances) remained at the same level of frequency over 10 years, though positive answers to the probe question increased. A comparison of the Zurich prevalences with the general population data in Table 12 a and b shows that specific functional sexual disorders are incredibly rare in Zurich men but fit quite well with other data in Zurich women (orgasmic difficulties 7%; dyspareunia 6% at age 30 years). This fact seems to preclude a strong influence of habituation or cultural change in men – which would have affected specification – and the increase in general sexual problems in males from age 20 years to age 30 years may be real.

Impaired sexual interest seems to occur in a large minority of middle-aged women, the point prevalence varying from 30 to 40% (Table 12a). A much lower rate in the sample of Oxford females by Osborn et al. (1988) makes an exception. The authors assessed a decrease of interest or low interest during the last 12 months. In the Zurich study, we inquired about a change of interest for the same period (Table 12a, second row). There is a larger difference in prevalence between the Zurich and the youngest group of Oxford females and again a large difference between the Oxford females, the two middle-aged female samples and the result of Nathan's (1986) survey. Leaving aside speculations on intercultural differences, it is impossible to find a reason for the much lower rates of the English group.

Relative risk for males and females may be more important than prevalences and frequencies. Every time impaired sexual interest was assessed by the same method in men and women it was reported to be two to three times more frequent in women (Table 12a, b). This is the case for the Zurich study and this also was found in general practice populations. In both men and women of the Zurich study (significantly so only in men), impaired sexual interest was associated with a previous or present diagnosis of depression. The same result was found for previous depression in a clinical sample without present psychiatric disorder by Schreiner-Engel et al. (1986). It is possible that incomplete recovery from major depression leaves two main residual symptoms: sleep disturbances and impaired sexual desire.

The latter finding leads to the question: are sexual disturbances generally connected with other psychiatric disorders? In the Zurich study, reporting sexual problems was associated with reporting widely defined anxiety and depressive disorders over 10 years. The degree of the association is, however, not very striking. Osborn et al. (1988) found in their sample of middle-aged women that the risk ratio of subjects with sexual disturbances for being a psychiatric "case" in the PSE-ID system was 1.6. In comparison with controls, we found risk ratios of 1.7 for depressive disorders and of 1.6 for anxiety disorders for each sex.

An elevated neuroticism score on personality tests was found in the Zurich males and females and also in the Oxford female sample. Over 10 years, male and female subjects of the Zurich study with sexual disturbances had higher SCL-90R scores than same-sex controls, the difference from controls occurring more consistently over this period for females. Derogatis et al. (1981) also found a strong elevatation of the SCL-90R total score in persons consulting a sexual behaviour clinic. In the Zurich study, another sex difference appeared, in that only female sexual problems were associated with social phobia as well as eating and weight problems. In both sexes, sexual disturbances were connected with partner problems and in females

(not significantly) with reporting sexual abuse as a child.

A third question adresses chronicity of sexual disturbances and dysfunctions. Spector and Boyle (1987) found point prevalence of erectile dysfunction (Table 12 a and b) to be one third of lifetime prevalence and concluded that it is a mainly temporary disturbance. We defined reporting sexual problems at least in two of four interviews as a criterion for chronicity. One third of the males and half of the females with sexual problems were in this sense chronic cases; women thus showing a much stronger propensity to a chronic course.

In order to answer the question whether the psychopathology found among subjects with sexual problems was mainly present in the chronic cases, the latter were compared with temporary cases and with controls for childhood problems, familial stress and scores on the SCL-90R and the FPI. Differences between cases and controls in childhood behavioural and emotional disturbances and in childhood family stress were slight; a tendency for temporary cases to be situated between chronic cases and controls appeared. On the FPI, women with both chronic and temporary sexual problems deviated more from female controls than men differed from male controls. In both sexes, neuroticism (defined both as a secondary scale and as a factor) increased stepwise from controls to temporary to chronic cases, and, in both sexes and with both definitions, the temporary cases' score was less different from that of chronic cases than from that of controls.

The SCL-90R gave a very similar result to the FPI, with scores of subjects with temporary sexual problems situated between those of chronic cases and controls and more similar to the former. Over 11 years, women with temporary and chronic sexual problems deviated on many more scales from their controls than men. Thus, in our sample, temporary complaints with regard to sexuality also seemed to indicate at least a certain psychiatric vulnerability.

Our conclusions are the following:

a. Sexual problems and disturbances are frequent, even in young adults, and in males they seem to increase during the passage from adolescence to adulthood. Low sexual interest is a typically female complaint. A large part of sexual problems at young adult age takes a chronic course.

b. Sexual problems are associated to a certain, limited degree with psychiatric diagnoses, neuroticism and symptoms of actual distress. Persons with temporary sexual problems deviate from controls as do those with chronic complaints, but to a somewhat lesser degree. Sexual disturbances and dysfunctions that were found only once at four interviews over 10 years do not seem to be mere adaptation reactions; the concept that even possibly fleeting sexual disturbances and dysfunctions are somehow privileged in their association with mental health was confirmed by the young high-risk sample of the Zurich study. The age of the sample and the modus of selection indicate the limits of this generalization.

c. In women, sexual problems are more frequent, more chronic and more narrowly associated with social anxiety, neuroticism and minor psychiatric symptoms than in men. More pervasiveness and chronicity of female disorders was also found in the context of depression (Ernst and Angst 1992) and could be a fundamental psychological sex difference.

d. At the age of 30 years, a decrease in sexual desire is associated to a slightly higher degree with present and former depression in men than in women. This finding could indicate that a "physiological" decrease in sexual interest may set in at an earlier time for women than for men and that low sexual desire, particularly in younger men, may be a frequently unnoticed residual symptom of earlier depression.

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Appendix

19. SEXUALITY

→ For men and women

• During the last 12 months were you unsatisfied with your sexual life or did you experience any difficulties ? _____ yes ( ) 1 no ( ) 2 NA ( ) 9 | 37

(might need to probe)
decreased / lack of sexual desire, impotent, orgasm problems ?

→ If no, go to HISTORY

• Could you describe more precisely, how you experienced this ?

→ Please check all items not spontaneously given !

	yes	no	
increased sexual desire	( )	( )	38
decreased / no sexual desire	( )	( )	39
emotional problems during or after intercourse (lack of emotion, sad, inhibited, feeling guilty)	( )	( )	40

→ men only

erection problems	( )	( )	41
premature ejaculation	( )	( )	42
delayed or lack of ejaculation	( )	( )	43

→ women only

pain during intercourse	( )	( )	44
vaginismus	( )	( )	45
orgasm problems	( ) 1	( ) 2	46

→ men and women

other: ..... /__/__/__/__/ | 47-49

50-55 bl

• How much did you suffer ? Or how much were you burdened by it ?
(Please indicate the amount of your suffering or the degree of your distress on a scale (thermometer) from 1-100) _____ Thermo: ____ /__/__/__/__/ | 56-58

• Did you consult a physician or psychologist, or did you seek other help ? _____ yes ( ) 1 no ( ) 2 | 59

→ If yes, by whom:

		yes	no	
outpatient:	physician / specialist / med. institution	( )	( )	60
outpatient:	psychiatrist / psychologist	( )	( )	61
inpatient:	hospital / other institutions	( ) 1	( ) 2	62
other:		/__/__/__/__/		63-65