

Isabel Hach · Uwe E. Ruhl · Anke Rentsch ·  
Eni S. Becker · Veneta Türke · Jürgen Margraf ·  
Wilhelm Kirch

## Recognition and therapy of eating disorders in young women in primary care

Received: 8 November 2004 / Accepted: 18 February 2005 / Published online: 9 April 2005  
© Springer-Verlag 2005

### Abstract

**Objective** To evaluate the prevalence of eating disorders (ED) in a general population sample of young German women, compare those to primary care diagnoses, and investigate their medical treatments.

**Methods** In a prospective epidemiological study, a representative sample of young women ( $n=1555$ , between 18 and 25 years of age) was questioned twice during a structured psychological interview (F-DIPS) for mental disorders according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). At the same time,

personal health insurance data were recorded and primary care physicians' diagnoses and payments for services rendered were analyzed.

**Results** The lifetime prevalence of eating disorders was 3.3% (2.3% anorexia nervosa, 1.1% bulimia nervosa). The primary care physicians diagnosed eating disorders in only about 20% of the women concerned. Eating disorders were often overlooked, although physicians detected physical and mental complaints (e.g., menstrual cycle disorders, abnormal weight loss, flatulence, depression, anxiety disorders), which are closely related to eating disorders. If the primary care physicians had diagnosed eating disorders, they mostly recommended psychotherapeutic treatment as the only measure, or in combination with pharmacological therapy.

**Conclusion** The study indicates that primary care physicians need better training, particularly in diagnostic procedures for eating disorders. Screening methods and systematic assessment might be helpful in improving the detection of eating disorders in primary care

**Keywords** Eating disorders · Primary care · Medical treatment · Young women

I. Hach · W. Kirch  
Institute of Clinical Pharmacology,  
Public Health Association Saxony,  
Technical University of Dresden, Germany

I. Hach (✉)  
Institute of Clinical Pharmacology,  
Medical Faculty,  
Technical University of Dresden, Fiedlerstrasse 27,  
01307 Dresden Germany  
e-mail: isabel.hach@mailbox.tu-dresden.de  
Tel.: +49-351-4582815  
Fax: +49-351-4584341

U. E. Ruhl · V. Türke  
Department of Clinical Psychology and Psychotherapy,  
University of Göttingen,  
Germany

A. Rentsch  
University Cancer Center,  
Technical University of Dresden,  
Germany

E. S. Becker  
Department of Clinical Psychology,  
Catholic University of Nijmegen,  
The Netherlands

J. Margraf  
Department of Clinical Psychology and Psychotherapy,  
University of Basel,  
Switzerland

### Introduction

Eating disorders [bulimia nervosa (BN) and anorexia nervosa (AN)] are diseases that often last a long time and that affect the mind as well as the body. The prevalence rates of eating disorders in adolescent and young women (general population samples) are between 1 and 3% (Lewinsohn et al. 2000; Wittchen 2001; Wittchen et al. 1998). Eating disorders often develop during adolescence (APA 1994). Young adult female subjects are generally considered to be at the highest risk for eating disorders (Favaro et al. 2003). The prevalence of anorexia nervosa is, indeed, higher in adolescents, whereas bulimia nervosa seems to occur more in (young) adults (Turnbull et al.

1996). The affected persons, mainly those with poor treatment outcomes, show a higher risk of other mental diseases (Braun et al. 1994; Godart et al. 2002; Lewinsohn et al. 2000; Wonderlich and Mitchell 1997), physical diseases (Devlin et al 1990; Johnson et al. 2002), suicide (Favaro and Santonastaso 1997), and mortality (Herzog et al. 2000). Although for decades the genesis and therapy of these disorders have been intensely investigated, there have been, especially in the case of anorexia nervosa, no real successes (Steinhausen 2002). The treatment of eating disorders should be multidimensional like the supposed genesis of the disorders (Fairburn and Harrison 2003; Halmi 2002). As yet, there are no sufficient pharmacological therapeutic strategies (Zhu and Walsh 2002). In general, the physicians regularly consulted by women, e.g., gynecologists and family doctors, have a responsibility to recognize such disorders and initialize the right treatment. As mental disorders are generally difficult to diagnose by non-specialists (Kessler et al. 2002), most eating disorders are not detected by primary care physicians (Johnson et al. 2002; Spitzer et al. 1994); e.g., family doctors consider themselves to be insufficiently trained for such diagnoses and treatment (Boule and McSherry 2002). However, the obvious physical symptoms of eating disorders, such as underweight and typical skin alterations in anorexia or weight variation, dental diseases, and gastroenteric problems in the case of bulimia, can be identified in a normal examination (Robinson 2000). Moreover, patients with ED report much more health problems than women without ED (Johnson et al. 2001). The fracture risk is increased in patients with eating disorders (Vestergard et al. 2002). Thus, patients with ED seem to show obvious symptoms and a variety of unspecific health problems, which might lead to recognition of those disorders in primary care.

In a representative sample of young women, the prevalences of eating disorders were investigated and compared to the diagnoses of primary care physicians. Our main point of interest was in determining whether the physicians who treated the women diagnosed their eating disorders, and which treatment was proposed.

## Materials and methods

### Study design and sample

In the course of two projects supported by the German Federal Ministry of Education and Research [project A4: predictors of mental health in young women; project C4: investigation of the application of medicines in the region of Dresden (Germany)], a prospective epidemiological study was performed to evaluate prevalence rates, incidence, development, and risk factors of mental disorders in young women. The baseline study was done from July 1996 to September 1997, and a follow-up-investigation from December 1997 to February 1999. In order to be eligible for the study, participants had to be German women between 18 and 24 years of age at the time of sampling. The sample was drawn from the Dresden government registry of residents. A total of 5,204 women were located and eligible for the study. Of this sample, 2,064 participated in the interviews (this study), and 998 filled out questionnaires (results are not shown in this paper). The response

rate was 58.8%. The majority of the women were not married (94.9%), but did have a partner (66.5%). About half of the women were living with their parents, about a third with a partner, and about 14% alone. Very few had dropped out of school without a degree (3.3%), which is consistent with the mandatory-school law. The minority went to *Hauptschule* (6.5%), the lowest level of school education. About one-third went to the medium level of schooling (*Realschule* or *Polytechnische Schule*) and about half ended schooling with a degree allowing them to enter university (*Abitur*). Almost half of the young women were working: 31.5% of the whole sample full-time, 15.3% part-time. A few women were still at school (4.3%), about 40% were university students, and about 5% were currently unemployed. More details on the sociodemographics and the representativeness of the sample are shown elsewhere (Becker et al. 2001).

### Diagnostic assessment

The women were interviewed twice (T1: lifetime and point prevalence of mental disorders; T2: one-year and point prevalence) by using the research version of the Diagnostic Interview for Mental Disorders (F-DIPS). The F-DIPS is a structured interview to obtain Axis I diagnoses according to DSM-IV (*Diagnostic Manual for Mental Disorders*), to investigate lifetime as well as point prevalences. However, it cannot detect schizophrenia or personality disorders. It is a modified version of the DIPS (Margraf et al. 1991) and the ADIS-IV (Anxiety Disorders Interview Schedule for DSM-IV) (Brown et al. 1994). The test-retest and inter-rater reliability of the DIPS was tested in an unselected sample of 201 patients, mostly from an internistic-psychosomatic clinic. The test-retest reliabilities across the groups of disorders were between 0.68 and 0.79 (Kappa coefficient) and 0.67 and 1.0 (Yule's Y coefficient), respectively. With a few exceptions, the individual diagnoses also reached satisfactory values (Kappa coefficient: 0.68–0.73, Yule's Y: .71–1.0). The test-retest reliability in patients with eating disorders was excellent (Kappa coefficient: 0.89; Yule's Y: 0.94) (Schneider et al. 1992). All interviewers were either medical doctors or psychology students in their last year of studying, and they all underwent extensive training lasting about a week and were supervised biweekly. Specially trained supervisors proof-read every interview. Information regarding the origins of the disorder in childhood and adolescence was given in retrospect; the age (in years) at the beginning of the disease was quoted. Verbal reports of the respondents' actual height and weight were obtained and recorded by the interviewers.

The personal health insurance data of 75% ( $n=1555$ ) of the interviewed young women was gathered (after having received their permission) from January 1997 to December 1998, which provided information about primary care physicians' diagnoses (claims form diagnoses, i.e., documentation of medical diagnoses designed for the Regional Association of SHI-Accredited Physicians) and payments for services rendered (health insurance data). Claims form diagnoses and F-DIPS diagnoses were not derived from exactly the same time period. The maximum overlap time was 2 years and the minimum 1 year. The majority of the claim forms (approx. 60%) had been handed out by family doctors and gynecologists, and about 10% by dermatologists. To compare the data, the DSM-IV diagnoses were transformed 1:1 into ICD-10 diagnoses (Dilling et al. 1991), easily without any change of diagnosis (Schulte-Markwort et al. 2002). Since primary care physicians had diagnosed only AN and BN in young women, the results of the F-DIPS could be examined concerning these eating disorders alone. We compared the women with eating disorders (according to the F-DIPS) with all women without any psychiatric diagnosis in the F-DIPS for all their claims form diagnoses. We chose women without mental disorders (F-DIPS) as the comparison group because of the strong relationship between mental and physical complaints.

**Table 1** Two-year prevalence of mental and physical disorders in young women with eating disorders<sup>a</sup> according to the data of primary care physicians in comparison to women without mental disorders<sup>b</sup> (*n*=702)

F-DIPS diagnoses	Anorexia nervosa ( <i>n</i> =50)			Bulimia nervosa ( <i>n</i> =31)		
Physicians' diagnoses (claims forms)	w%	OR <sup>c</sup>	CI	w%	OR <sup>c</sup>	CI
Anorexia nervosa	6	22.3***	(6.3;79.4)	6.5	24.1***	(6.1;94.9)
Bulimia nervosa	6	44.7***	(11.5;173.5)	9.7	75.1***	(22.6;249.7)
Eating disorder (not specified)	6	44.7**	(11.5;173.5)	6.5	23.4**	(3.4;159.2)
Other anxiety disorders	6	5.5***	(1.6;18.6)	9.7	9.3***	(3;29.1)
Adjustment disorders	2	2.8	(0.4;22.6)	6.5	9.6**	(2.4;38.2)
Acute stress reactions	8	2.7	(0.9;7.8)	9.7	3.3*	(1;10.9)
Depressive episodes	10	5.1***	(2;13.2)	12.9	6.8***	(2.5;18.8)
Dissociative disorders	14	1.7	(0.7;3.9)	19.4	2.5*	(1;6.1)
Disorders of adult personality and behavior	6	4.9***	(1.5;16.5)	9.7	8.3***	(2.6;26)
Mental disorders	4	14.6***	(3.2;65.8)	6.5	24.1***	(6.1;94.9)
Somatoform disorders	24	3.2*	(1.6;6.2)	22.6	3.0*	(1.3;6.9)
Oligomenorrhea	14	1.5*	(0.6;3.4)	25.8	3.2**	(1.4;7.1)
Abnormal weight loss	6	6.3***	(0.4;2.5)	-		
Flatulence	2	1.4	(0.3;18.8)	6.5	8.0**	(2;32.1)
Problems with respiration	2	2.4	(0.6;37.7)	3.2	7.8*	(1.1;54.2)
Menstruation	4	14.6***	(3.2;65.8)	3.2	11.7*	(1.7;79.6)
Problems	14	3.4*	(1.5;7.8)	16.1	4.0*	(1.6;10.4)
Pregnancy exclusion	10	1.6	(0.6;4.2)	16.1	2.7*	(1;7.2)

\*Chi-square test:  $P < 0.01$ , \*\*Chi-square test:  $P < 0.05$ , \*\*\*Chi-square test:  $P < 0.001$

<sup>a</sup> Diagnosis of AN/BN at T1 or T2 (point prevalences/1-year prevalences)

<sup>b</sup> No current or former mental disorder in F-DIPS at T1 and T2

<sup>c</sup> OR: odds ratios (calculated using women without mental disorders in the F-DIPS as a control group)

## Statistical analyses

Data were analyzed using the Statistical Package for Social Sciences (SPSS, Windows, German Version 8.0) and a relational database (Paradox 7.0, Borland). Between-group comparisons (women with ED versus women without any mental disorder) were done with a statistical procedure comparing the likelihood of two binominal distributions.

## Results

### F-DIPS

The lifetime prevalence of eating disorders in all interviewed women was 3.3% (AN: 2.3%; BN: 1.1%). The cases of AN were double those of BN. 50% of women with BN and 60.4% of women with AN (lifetime prevalence) suffered from ED for less than 1 year (T1). The point prevalence of AN was 0.4% at T1 (BN: 0.5%). At T2, 0.3% of the women fulfilled diagnostic criteria of AN (BN: 0.7%). Women suffering from ED showed a broad spectrum of comorbid disorders, in particular, high prevalence rates of phobic anxiety disorders (AN: 26.3%, BN: 25.6%), depressive episodes (AN: 19.3%, BN: 21.9%), and addictive diseases (AN: 10.5%; BN: 1.3%).

### Comparison with the medical certificates (claim forms)

Altogether, the F-DIPS diagnoses corresponded only slightly with the diagnoses in the claim forms. Therefore, we investigated which diseases had been diagnosed in the medical certificates of the women with eating disorders

according to the F-DIPS (full syndromes, point prevalences T1/T2, 1-year prevalence T1-T2, and lifetime prevalence if the diagnostic criteria were fulfilled retrospectively within 1 year before the first F-DIPS interview). To this end, both the psychiatric and somatic diagnoses were analyzed. All the following diagnoses given (Table 1) were more frequent in young women with eating disorders according to the F-DIPS than in the women who had never been given a psychiatric diagnosis in the F-DIPS (i.e., women without mental disorders at T1 and T2, *n*=702).

Besides eating disorders, primary care physicians diagnosed anxiety disorders, depressive disorders, personality disorders, and mental disorders in general more frequently in women with eating disorders according to the F-DIPS than in the comparison group. For example, women suffering from AN were significantly more ( $P < 0.001$ ) often diagnosed with AN, BN, and unspecified eating disorders, but also with other anxiety disorders, depressive disorders, disorders of adult personality and behavior, and unspecified mental disorders than women without mental disorders. Likewise, menstrual cycle disorders (significantly more frequent: oligomenorrhea), abnormal weight loss (in AN), flatulence, and problems with respiration (both in BN) were diagnosed more frequently than in women without mental disorders.

### Medical treatment of eating disorders

There were differences in the consultation frequency between women with ED and those without mental disorders.

ders regarding different medical specialists. A total of 41.9% of women with BN consulted at least once a specialist in internal medicine (AN: 26%, without mental disorder: 20.7%; women with BN versus women without mental disorders:  $P < 0.05$ ). 45.2% of women with BN consulted a radiologist (AN: 30%, without mental disorder: 23.5%; women with BN versus women without mental disorders:  $P < 0.05$ ). Within the time period covered by the study, physicians diagnosed AN or BN in 31 women, of whom 26 (84%) were recommended or prescribed a treatment. The minority of the prescriptions (12%) consisted of drug monotherapy, and 27% were a combination of psychotherapy and medication. In the case of AN, the medication prescribed was tricyclic antidepressants (three cases), symptomatic treatment (antihypotonics), and herbal sedatives or sleeping pills (one case of each). The women with a diagnosis of BN were treated once with an herbal medicine and twice with an unspecified active agent. In more than half of the cases, psychotherapy was recommended as the only measure; there was no specification of the suggested therapy (e.g., behavior therapy).

## Discussion

This study was started to evaluate prevalence rates of eating disorders in a representative sample of young women, using a standardized psychological interview, and to compare those to primary care physicians' diagnoses of the affected women. As eating disorders are accompanied with different physical symptoms, we expected a high rate of detected ED in primary care.

The study's limitations are: The value of the data is also subject to the respondents' recall ability and accuracy of self-reports. Owing to the fact that the women reported their weight and height verbally, the prevalence rates of eating disorders (F-DIPS) found might underestimate the real prevalence. We do not have "objective" data. However, the error introduced by verbal reports seems to be in the direction of regression towards the mean. We did not use an eating-disorder-specific questionnaire (e.g., EDI, EAT). Last, F-DIPS diagnoses (point prevalences T1/T2, 1-year prevalence T1-T2) and diagnoses of claim forms (2-years prevalences) do not exactly reflect equal time periods.

### Prevalence rates of eating disorders

AN seems to occur more frequently and BN less frequently than in other studies (Schulze et al. 2002: prevalence of anorexia nervosa in adolescent and young women: 0.5–1%; Lewinsohn et al. 2000: incidence of eating disorders in persons under the age of 18: <2.8%, in persons between 19 and 23 years of age: 1.3%; Favaro et al. 2003: lifetime prevalence of AN in Italian women aged 18–25: 2.0%; BN: 4.6%; Wittchen 2001: 1-year prevalence of ED in German adults: 0.3%). This could be due to the

young age of the women, as anorexia seems to occur more often in adolescence (Patton et al. 1999), whereas bulimia occurs mostly in (young) adults (Turnbull et al. 1996). Moreover, comparing the point prevalences of T1 and T2, the cases of anorexia seemed to decline whereas the cases of bulimia increased slightly with time. Another possible explanation for the unusual findings of our study is that the sampling procedure was biased. Perhaps subjects with AN, who are known to be more obsessive (Lewinsohn et al. 2000; Steinhausen 2002), were more likely than subjects with BN and others in the general population to comply with the procedure, yielding a disproportionate number of anorexic subjects in the sample. Last, it is well known that patients with BN are ashamed to report their eating attacks in a face-to-face interview. Shame and severity of bulimic symptoms are often correlated (Hayaki et al. 2002).

### Comparison with the medical certificates (claim forms)

Comparison with medical documents (claim forms and prescriptions) showed that the young women had consulted mainly physicians without psychiatric experience, i.e., usually general practitioners and gynecologists. However, even if the physicians who attended the women did not immediately diagnose the eating disorder, at least unspecific disorder symptoms, such as unexplained weight loss, food allergy, infertility, irregular menstrual cycle, or diarrhea (Robinson 2000), should show up more frequently than in the comparison group (women without mental disorders). A higher prevalence of skin alterations typical for anorexia, such as dry skin (xerosis), or alopecia and alterations of the nails (Strumia et al. 2001) could also be expected more often than in the comparison group. The somatic diseases diagnosed significantly more frequent than in women without mental disorders were weight variation, flatulence, and irregular menstrual cycle. Even the diagnosis "abnormal weight loss" did not lead (at a later date) to the diagnosis "anorexia nervosa" in women suffering from AN. The physicians diagnosed in women with eating disorders more psychiatric disorders than in the comparison group, especially, eating disorders, anxiety disorders, personality disorders, and depressive disorders, as well as hypochondriac and somatoform disorders. We suppose that primary care physicians diagnosed all those other mental disorders instead of eating disorders, although one could argue that eating disorders and particularly anxiety and depressive disorders are often related (e.g., Johnson et al. 2002; Godart et al. 2002).

However, in summary it can be ascertained that eating disorders were often overlooked. Primary care physicians are responsible for diagnosing eating disorders as soon as possible. A Canadian study by Boule and McSherry (2002) showed that family doctors were more certain of themselves in the diagnosis than in the treatment of eating disorders; the interviewed family doctors often collaborated with psychiatrists and nutritionists when attending

patients with eating disorders. This study's results illustrate that the physicians do not feel very certain when diagnosing eating disorders.

If primary care physicians diagnosed eating disorders, they recommended psychotherapeutic treatment very often (74%) on claims forms. However, those recommendations had no consequences. As was shown elsewhere, a referral to a psychiatric or psychological specialist was done in only about 1% of all women with mental disorders (Hach et al. 2003). The increased fracture risk in women with ED might have contributed to their consulting radiologists more often (Vestergaard et al. 2002). The significantly higher consultation rates of internists in BN patients might show increased medical complications in those patients and their need for treatment. However, both specialists and primary care physicians did not sufficiently detect and treat eating disorders. Only a few medical treatments were attempted—in some cases only symptomatic treatment, such as medicine for low blood pressure.

## Conclusions

Eating disorders occur frequently in adolescent and young adult women. Family doctors and gynecologists are the physicians most often consulted by young women and, therefore, have a special responsibility for the diagnosis of eating disorders. The results of this study indicate deficits of German primary care physicians, mostly in the diagnosis of eating disorders. Screening methods and systematic assessment (e.g., using the EAT or EDI) might be helpful to improve the detection of eating disorders in primary care. Although the use of screening methods is controversial, the utility and evidence of such procedures (e.g., in cases of depression, one of the most common mental disorders in a family doctor's practice) have been sufficiently proven (Hickie et al. 2002). There is a strong need for primary care physicians to know and apply existing diagnostic and therapeutic guidelines (e.g., Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde (DGPPN) 2000).

**Acknowledgements** The research was supported by the grant DLR 01EG9410, Ministry of Science, Research and Education. We would like to thank the many people who helped with this study, especially Dr. Jutta Krappweis.

## References

- American Psychiatric Association (1994) Diagnostic and Statistical Manual of Mental Disorders, 4th edn. APA, Washington, DC
- Becker ES, Margraf J, Turke V, Soeder U, Neumer S (2001) Obesity and mental illness in a representative sample of young women. *Int J Obes Relat Metab Disord* 25:5–9
- Boule CJ, McSherry JA (2002) Patients with eating disorders. How well are family physicians managing them? *Can Fam Physician* 48:1807–1813
- Braun DL, Sundy R, Halmi KA (1994) Psychiatric comorbidity in patients with eating disorders. *Psychol Med* 24:859–864
- Brown TA, DiNardo PA, Barlow DH (1994) Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV). Graywind, Albany
- Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde (DGPPN) (2000) Praxisleitlinien in Psychiatrie und Psychotherapie, vol 4: Behandlungsleitlinie Essstörungen. Steinkopff, Darmstadt
- Devlin MJ, Walsh TB, Kral JG, Heymsfield SB, Pi-Sunjer FX, Dantzig S (1990) Metabolic abnormalities in bulimia nervosa. *Arch Gen Psychiatry* 47:144–148
- Dilling H, Mombour W, Schmidt MH (1991) Internationale Klassifikation für psychiatrische Störungen: ICD-10, Chap V (F). Hans Huber, Göttingen
- Fairburn CG, Harrison PJ (2003) Eating disorders. *Lancet* 361:407–416
- Favaro A, Santonastaso P (1997) Suicidality in eating disorders: clinical and psychological correlates. *Acta Psychiatr Scand* 95:508–514
- Favaro A, Ferrara S, Santonastaso P (2003) The spectrum of eating disorders in young women: a prevalence study in a general population sample. *Psychosom Med* 65:701–708
- Godart NT, Flament MF, Perdereau F, Jeammet P (2002) Comorbidity between eating disorders and anxiety disorders. *Int J Eat Disord* 32:253–270
- Hach I, Rentsch A, Ruhl U, Becker E, Türke V, Margraf J, Krappweis J, Kirch W (2003) Validität von Krankenscheindiagnosen psychischer Störungen (validity of diagnoses of mental disorders by primary care physicians). *Gesundheitswesen* 65:1–6
- Halmi KA (2002) Eating disorders in females: genetics, pathophysiology, and treatment. *J Pediatr Endocrinol Metab* 15:1379–1386
- Hayaki J, Friedman MA, Brownell KD (2002) Shame and severity of bulimic symptoms. *Eat Behav* 3:73–83
- Herzog DB, Greenwood DN, Dorer DJ, Flores AT, Ekeblad ER, Richards A, Blais MA, Keller MB (2000) Mortality in eating disorders: a descriptive study. *Int J Eat Disord* 28:20–26
- Hickie IB, Davenport TA, Ricci CS (2002) Screening for depression in general practice and related medical settings. *Med J Aust* 177:111–116
- Johnson JG, Spitzer RL, Williams JB (2001) Health problems, impairment and illnesses associated with bulimia nervosa and binge eating disorder among primary care and obstetric gynaecology patients. *Psychol Med* 31:1455–1466
- Johnson JG, Cohen P, Kasen S, Brook J (2002) Eating disorders during adolescence and the risk for physical or mental disorders during early adulthood. *Arch Gen Psychiatry* 59:545–552
- Kessler D, Bennenwith O, Lewis, G, Sharp D (2002) Detection of depression and anxiety in primary care: follow up study. *BMJ* 325:1016–1017
- Lewinsohn PM, Striegel-Moore RH, Seeley JR (2000) Epidemiology and natural course of eating disorders in young women from adolescence to young adulthood. *J Am Acad Child Adolesc Psychiatry* 39:1284–1292
- Margraf J, Schneider S, Ehlers A (1991) DIPS: Diagnostisches Interview bei psychischen Störungen. Springer, Berlin
- Patton GC, Selzer R, Coffey C, Carlin JB, Wolfe R. (1999) Onset of adolescent eating disorders: population based cohort study over 3 years. *BMJ* 318:765–768
- Robinson PH (2000) Review article: recognition and treatment of eating disorders in primary and secondary care. *Aliment Pharmacol Ther* 14:367–377
- Schneider S, Margraf J, Spörkel H., Franzen U (1992) Therapiebezogene Diagnostik: Reliabilität des Diagnostischen Interviews bei Psychischen Störungen (DIPS). *Diagnostica* 38:209–227
- Schulte-Markwort M, Marutt K, Riedesser P (2002) Crosswalk ICD-10—DSM IV. Klassifikation psychischer Störungen: eine Synopsis. Hans Huber, Berlin
- Schulze U, Mehler-Wex C, Remschmidt H, Herpertz-Dahlmann B, Warnke A (2002) Children in the drive for thinness. How early anorexia nervosa modifies development. *MMWR Morb Mortal Wkly Rep* 144:28–30

- Spitzer RL, Williams JB, Kroenke K, Linzer M, de Gruy FW 3rd, Hahn SR, Brody G, Johnson JG (1994) Utility of a new procedure for diagnosing mental disorders in primary care: the PRIME-MD 1000 Study. *JAMA* 272:1749–1756
- Steinhausen HC (2002) The outcome of anorexia nervosa in the 20th century. *Am J Psychiatry* 159:1284–1293
- Strumia R, Varotti E, Manzato E, Gualandi M (2001) Skin signs in anorexia nervosa. *Dermatology* 203:314–317
- Turnbull S, Ward A, Treasure J, Jick H, Derby L (1996) The demand for eating disorder care: an epidemiological study using the General Practice research data base. *Br J Psychiatry* 169:705–712
- Vestergaard P, Emborg C, Stoving RK, Hagen C, Mosekilde L, Brixen K (2002) Fractures in patients with anorexia nervosa, bulimia nervosa, and other eating disorders—a nationwide register study. *Int J Eat Disord* 32:301–308
- Wittchen HU (2001) Bedarfsgerechte Versorgung psychischer Störungen” Abschätzungen aufgrund epidemiologischer, bevölkerungsbezogener Daten. Max Plank Institut für Psychiatrie, Munich
- Wittchen HU, Nelson CB, Lachner G (1998) Prevalence of mental disorders and psychosocial impairments in adolescents and young adults. *Psychol Med* 28:109–126
- Wonderlich SA, Mitchell JE (1997) Eating disorders and comorbidity: empirical, conceptual, and clinical implications. *Psychopharmacol Bull* 33:381–390
- Zhu AJ, Walsh BT (2002) Pharmacological treatment of eating disorders. *Can J Psychiatry* 47:227–234