

## ORIGINAL PAPER

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# Suicidal ideation in a female population sample

## Relationship with depression, anxiety disorder and alcohol dependence/abuse

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**Abstract** *Background* The aim was to analyse the association between three psychiatric disorders (anxiety disorder, depression and alcohol dependence/abuse) and past year suicidal ideation in women. *Method* As part of the longitudinal population-based study “Women and Alcohol in Göteborg”, face-to-face interviews were administered to a stratified sample of 25–65 year old women ( $n = 313$ ). Past year and lifetime diagnoses of depression, anxiety disorder and alcohol dependence/abuse were made according to DSM-III-R. Past year suicidal feelings were rated according to Paykel et al. *Results* The weighted one-year prevalence of suicidal thoughts was 6.6%. Such thoughts were acknowledged by 24.2% of the women with a depressive disorder, 20% of the women with an anxiety disorder and 22.7% of those with alcohol dependence/abuse (ADA) during the past year. Depressive disorder and ADA were associated with suicidal thoughts in the univariate analysis. Such an association could not be shown for anxiety disorder. When all three disorders were entered into a logistic regression model, only depressive disorder remained associated with past year suicidal ideation. One third of the women who reported past year suicidal thoughts did not fulfil criteria for a DSM-III-R Axis I disorder during this time period. *Implications* Our results underline the need for assessment of suicidality even in women with subsyndromal states.

**Key words** suicidal thoughts · depression · anxiety · substance use disorder · women

### Background

Psychiatric disorder is an undisputed risk factor for suicidal ideation and attempts (Moscicki 1989). The role of anxiety disorders in general (Allgulander and Lavori 1991, Allgulander 1994) and panic disorder in particular has been in focus since Weissman et al. (1989) reported an association between panic disorder and suicidal ideation and attempts in the Epidemiologic Catchment Area (ECA) Study. Subsequent analyses of the ECA data (Petronis et al. 1990, Johnson et al. 1990, Horning & McNally 1995) and clinical studies (Friedman et al. 1992, Beck et al. 1991, Rudd et al. 1993, Cox et al. 1994, Warshaw et al. 2000) have produced divergent results. One reason for this might be that the level of suicidality experienced by a given individual tends to wax and wane over time. Recall bias is a nemesis in this type of research. This was clearly demonstrated in a population study in which no less than 40% of the subjects who acknowledged suicidal ideation at baseline denied ever having had suicidal ideation at follow-up four years later (Goldney et al. 1991). Population studies report relatively small differences between past year and lifetime prevalences of suicidal behaviours (Salander Renberg 1998), suggesting that past year figures may be more reliable.

In the current study, we hypothesise an association between three psychiatric disorders (depressive disorder, anxiety disorder, and alcohol dependence/abuse) and suicidal ideation and examine the risk conferred by these disorders in a population-based female sample. For reasons noted above, we limit the observation period for suicidal ideation to the past year. This study is part of a population-based study on female alcohol dependence and abuse, “Women and Alcohol in Göteborg” (Spak 1996).

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## Methods

### Study design

The study population included all women ( $n = 3130$ ) born in 1925, 1935, 1945, 1955, and 1965, registered for census purposes in District West on December 31, 1985. There were no exclusion criteria. District West (1985 population 99 328) is a suburban sector of Göteborg, which is Sweden's second largest city. In Phase I, all 3130 women in the study population were sent a screening questionnaire, a 13 item self-report instrument designed to detect alcohol problems (Screening, Women and Alcohol, Göteborg (SWAG); Spak and Hällström 1995). The screening questionnaire contained no questions on suicidality. The response rate for this questionnaire was 77.7 %.

In phase II, which was carried out during 1989–1990, 479 women were selected for a face-to-face interview. The sample was stratified according to the SWAG score. In order to maximise the number of women with alcohol dependence and abuse (ADA) in the interview sample, all ( $n = 139$ ) of those who received a score of 4 points or above on the initial screening instrument were invited to take part in the structured interview. A random 25 percent of those scoring 1–3 ( $n = 118$ ) and a random six percent of those who scored 0 points ( $n = 109$ ) were invited to participate. Finally, in order to reduce the effect of phase I attrition, a random 25 percent ( $n = 113$ ) of those who did not respond to the original screening questionnaire were also sent an invitation. Fractions were chosen in order to obtain groups similar in size to that of the high scoring group. After the initial mailed invitation, non-responders were sent two written reminders, and if necessary telephoned. Door knocking was employed when subjects could not be reached otherwise. The response rate for phase II was 88.3 % for those who had taken part in phase I and 67.3 % for those who had not responded in phase I. Three hundred and sixteen women took part in the full, face-to-face interview, 33 declined such an interview but answered a postal questionnaire and the remaining 50 accepted a short telephone interview. Only those 313 women who responded to the suicide questions in the face-to-face interview are included in the present study.

### Interviews

The structured interviews were carried out by three clinicians: one male psychiatrist and two female clinical psychologists. All were trained in the DSM-III-R (American Psychiatric Association 1987) and clinical examinations were performed until sufficient inter-rater reliability was achieved. Most of the interviews took place in the subjects' homes, but some subjects chose to come to the university hospital. The structured interview covered socio-demographic characteristics, childhood conditions, family relations, work situation, physical and mental health, alcohol consumption, alcohol-related problems, sexual abuse, and sexual habits and problems (Spak 1996).

Suicidal ideation was assessed according to Paykel et al. (1974) using the five following questions: 1) Have you ever felt that life was not worth living? ("life weariness"), 2) Have you ever wished that you were dead – for instance, that you could go to sleep and not wake up? ("death wishes"), 3) Have you ever thought of taking your life, even if you would not really do it? (suicidal thoughts"), 4) Have you ever reached the point that you seriously considered taking your life, and perhaps made plans how you would go about doing it? ("suicidal plans"), 5) Have you ever made an attempt to take your life? ("suicide attempt"). For the purpose of this study, a woman was considered to have suicidal thoughts if she gave a positive response to either question three or question four.

### Diagnostic procedures

Psychiatric diagnoses, past year and lifetime, were assigned according to DSM-III-R, Axis I. One of the authors (F.S.) was consultant in all diagnostic procedures throughout the study. Major depression, dysthymia, cyclothymia, bipolar syndrome, depression mixed form and depressive disorder NOS were included in the depressive disorder cat-

egory. The anxiety disorder category comprised panic disorder, agoraphobia, social phobia, simple phobia, obsessive compulsive disorder, post-traumatic stress disorder, generalised anxiety syndrome and anxiety disorder NOS. The structured diagnostic instrument CIDI-SAM (Robins et al. 1986), designed to detect alcohol dependence and abuse, was also included in the protocol. For cases in which the interview diagnoses and CIDI-SAM diagnoses differed, the available information was weighted together to form a final diagnosis, which was used in all calculations.

### Statistical methods

As the material was oversampled with individuals who had indicated possible alcohol problems on the original screening questionnaire, the prevalence rates presented here are calculated on weighted values based on sampling fractions, correcting for the different response rates in the various groups. In the regression analysis, odds ratios and confidence intervals were calculated with the SUDAAN software (Research Triangle Institute, 1997) which adjusts for the weighting scheme as well as for stratification.

### Ethics

The study was approved by the Ethics Committee for Medical Research at Göteborg University.

## Results

The weighted past year prevalence rate for life-weariness was 12.2 % (95 % CI 7.5–16.0), for death wishes 9.2 % (95 % CI 4.7–13.8), for suicidal thoughts 6.6 % (95 % CI 2.9–10.2), for suicidal plans 1.6 % (95 % CI –0.2–3.5) and for suicidal attempts 1 % (95 % CI –0.73–2.7 %). Weighted past year and lifetime prevalence rates for the DSM-III-R disorders of depression, anxiety and ADA are shown in Table 1. Only 9 women fulfilled criteria for more than one of the three disorders during the past year.

As shown in Table 2, almost one quarter of the women who fulfilled criteria for a depressive disorder during the past year experienced suicidal thoughts during this time period. The odds for suicidal thoughts was elevated in women with depression as compared to women without this disorder. Suicidal thoughts were significantly more often associated with past year depressive disorder in women born in 1965 ( $p = 0.01$ ) than in the older age bands. One fifth of the women who fulfilled criteria for an anxiety disorder during the past year had suicidal thoughts during this time period. None

**Table 1** Prevalence rates of mental disorder (DSM-III-R). Population-based sample of women in Göteborg (weighted values)

Disorder	Rate/100	
	One year	Lifetime
Depressive disorder	11.9	23.9
Anxiety disorder	9.3	14.1
ADA <sup>a</sup>	1.8	3.7
None of the above	78.0	65.2

<sup>a</sup> Alcohol dependence and abuse

**Table 2** One year prevalence of suicidal ideation in women with past year mental disorder in a stratified population based sample (n = 313)

DSM-III-R past year disorder <sup>a</sup>	Suicidal ideation n (%)	Odds ratio <sup>b</sup> (95 % C. I.)
Depressive disorder (n = 33)	8 (24.2)	8.2 (2.2–30.5)
Anxiety disorder (n = 35)	7 (20.0)	2.0 (0.6–6.7)
ADA <sup>c</sup> (n = 22)	5 (22.7)	4.6 (1.1–19.0)
Any above disorder (n = 78)	16 (20.5)	8.2 (2.4–28.4)

<sup>a</sup> A subject may have more than one disorder; <sup>b</sup> adjusted for stratification. Subjects with a specified disorder are compared with all others; <sup>c</sup> alcohol dependence and abuse

of the women with suicidal thoughts suffered from panic disorder. We could not show an association between anxiety disorder and suicidal thoughts in the total sample. As was the case with depression noted above, suicidal thoughts were more often associated with a past year anxiety disorder in women born in 1965 ( $p < 0.05$ ) than in the other age groups.

Twenty-three per cent of the women with a past year diagnosis of ADA acknowledged past year suicidal thoughts. The odds for suicidal thoughts was significantly higher for women with a past year diagnosis of ADA than for those without this disorder. Ten of the twenty-six women who acknowledged past year suicidal thoughts did not fulfil criteria for depressive disorder, anxiety disorder or ADA during this time period. However, 6 of the 10 women had suffered from one of these disorders at an earlier point in time. As seen in Table 3, the odds for past year suicidal ideation was significantly elevated for women with a lifetime diagnosis of depressive disorder and for those with a lifetime diagnosis of ADA. A lifetime diagnosis of anxiety disorder was not associated with past year suicidal thoughts.

## Regression models

Logistic regression analyses were performed to determine the contribution of past year depression, anxiety disorder and ADA to the occurrence of past year suicidal thoughts. As SUDAAN does not offer a stepwise logistic model, the logistic regressions were calculated in

**Table 3** One year prevalence of suicidal ideation in women with life-time mental disorder in a stratified population based sample (n = 313)

DSM-III-R lifetime disorder <sup>a</sup>	Suicidal ideation n (%)	Odds ratio <sup>b</sup> (95 % C. I.)
Depressive disorder (n = 93)	16 (17.2)	11.1 (3.9–31.9)
Anxiety disorder (n = 57)	10 (17.5)	2.0 (0.7–6.0)
ADA <sup>c</sup> (n = 48)	5 (10.4)	1.9 (0.5–7.3)
Any of the above (n = 145)	22 (15.2)	14.1 (4.2–47.3)

<sup>a</sup> A subject may have more than one disorder; <sup>b</sup> adjusted for stratification. Subjects with a specified disorder are compared with all others; <sup>c</sup> alcohol dependence and abuse

three steps. The final results show OR and CI calculated entering only age and depression in the analysis, as neither anxiety nor ADA were significant in the first model. Past year depressive disorder was associated with an eight-fold increase in risk of suicidal ideation (odds ratio 8.6, 95 % C.I. 2.3–32.6). A lifetime diagnosis of depression predicted past year suicidal thoughts and the odds ratio (11.0; 95 % C.I. 3.7–33.0) was even higher than that for past year depression. Neither a lifetime diagnosis of anxiety disorder nor a lifetime ADA diagnosis could be shown to be significant predictors of past year suicidal thoughts.

## Discussion

The past-year prevalence rates of life-weariness, death wishes, suicidal thoughts and plans were somewhat higher than those noted in Paykel's original study (1974). One reason for this might be that the interviewers in the current study were trained clinicians, and this might facilitate the disclosure of suicidal feelings. All the subjects in the current study were women, but this should have only a marginal effect on results (Weissman et al. 1999). The figures in the current study were somewhat lower than those cited recently for men and women in northern Sweden (Salander-Renberg 1998). The latter study employed the Paykel et al. questions in an anonymous postal questionnaire, which could be expected to yield a higher frequency of affirmative responses than a face-to-face interview.

Focusing specifically on question 3 ("suicidal thoughts"), our weighted figure for an affirmative response (6.6%) can be compared to those noted in the original study (2.3%, Paykel et al. 1974) and the ECA study (2.6% Moscicki et al. 1988). In the latter study, however, the question was worded differently ("Did you ever feel so low you thought of committing suicide?"). The past-year prevalence rate of suicide attempts in the current study (1%) is in line with several studies (Moscicki 1989, Weissman et al. 1993, Bronisch and Wittchen 1994). It is unclear whether our disparate results concerning the less intensive feelings of life-weariness, death wishes and suicidal thoughts reflect actual cohort differences. While rates of attempted suicide appear rather consistent in many countries, a wide variation in the rates of suicidal ideation has been demonstrated (Weissman et al. 1999). A consensus definition of suicidal ideation and standardised methodology, analogous to that developed for parasuicide in the WHO multicenter study (Schmitke et al. 1996) would be of great value for future studies.

One fourth of the women with a depressive disorder and one fifth of the women with anxiety disorder reported past-year suicidal ideation. In the recent Munich Follow-up Study (Bronisch and Wittchen 1994), 69% of those with major depression and 36% of those with phobias acknowledged such thoughts. The latter study assessed *lifetime* ideation and employed narrower diag-

nostic categories, rendering direct comparison with the current study difficult. The proportion of persons with ADA who reported suicidal thoughts was similar in both studies, despite methodological dissimilarities.

The number of persons with panic disorder in the current study ( $n = 5$ ) was too small to examine the association between this specific disorder and suicidal ideation. We note, however, that none of the women with anxiety disorder and suicidal thoughts suffered from panic disorder. A link between non-panic anxiety disorders and suicidal behaviour has been suggested from clinical (Cox et al. 1994) and record-linkage (Allgulander 1994, Harris & Barraclough 1997) studies. Yet anxiety disorders are seldom reported among psychological autopsy diagnoses (Beskow 1979, Runeson 1989, Åsgård 1990). In our study neither past year nor lifetime anxiety disorder predicted suicidal ideation, but it is possible that a larger study would have the power to detect such an association.

We could show an association between a past-year diagnosis of ADA and past-year suicidal ideation, but this association did not hold up in the logistic regression model. This finding is somewhat surprising since alcohol dependence and abuse is an established risk factor for both suicide attempts (Petronis et al. 1990) and completed suicide (Murphy and Wetzel 1990, Lester 1992, Henriksson et al. 1993). The disparity may in part be explained by the low number of cases of ADA in combination with the relatively low chance that these subjects will have had suicidal ideation in the year preceding the interview. Another contributing factor may be that these cases are derived from a general population sample and some cases of low clinical relevance thus may have been included (Caetano 1991). An alternative explanation might be that the ADA-suicide connection is more indirect in nature. Persons with ADA have an increased risk for comorbid psychopathology, which in turn increases the risk for suicidality (Cornelius et al. 1995, Suominen et al. 1996, Bronisch and Wittchen 1994). Only 9 of the subjects in the current study met criteria for more than one of the three disorders, rendering an analysis of the association between comorbid disorders and suicidality unfeasible. The relatively low rate of comorbidity in the current study probably reflects the fact that the sample is population based. Also, the subjects in the current study were drawn from a district with relatively good socioeconomic conditions, which may decrease the risk of psychiatric comorbidity (Brown et al. 1996).

A third of the women with suicidal ideation did not fulfil criteria for a past year depressive disorder, anxiety disorder or ADA. However, over half of these women had a *previous* history of such a disorder. While we cannot draw conclusions about causality due to the cross-sectional study design of our study, our findings suggest that the relationship between psychiatric disorder and suicidality is not always temporally contiguous in nature. Some women may retain suicidal ideation after other psychiatric symptoms have subsided. Altern-

tively, they may develop such thoughts in the prodromal phase of a subsequent period of illness. An underlying temperamental vulnerability may predispose for both suicidality and mental illness. Another possibility is that the propensity to react with suicidality in times of stress, a "suicidal diathesis" may be independent of other psychopathology (Mann et al. 1999).

The small sample size is a main limitation of this study. We were unable to examine the role of specific diagnoses such as panic disorder. Several other methodological issues warrant attention. The response rate in the two phases is not high but is acceptable. A random sample of the non-responders from phase I were included in phase II which increases the representativeness of the sample (Spak and Hällström 1995). The prevalence rate of alcohol dependence and abuse was not significantly higher in the non-responder group, suggesting that the study group is fairly representative of the uptake area, at least with regard to alcohol-related disorders.

The primary aim of this epidemiological study was to identify women with alcohol problems, and this may have affected the response rate in two ways. Some women with hidden alcohol problems might prefer to remain unidentified and therefore decline involvement. However, our data do not confirm this hypothesis (Spak and Hällström 1995, Spak 1996). Alternatively, healthy, busy women might tend to refuse participation, finding the study questions irrelevant. The latter hypothesis has received some support, as women who scored 0 points on the initial screening instrument declined the face-to-face interview more frequently than others. Many of these women indicated by telephone that they were too busy to take part in the study. The participation rate was lower ( $p < 0.05$ ) in the younger ( $< 45$  years of age) women. This may have resulted in a slight underestimation of suicidal ideation since the older women reported ideation less frequently than their younger counterparts (results not shown).

Our results cannot be directly generalised to the entire city of Göteborg. The inhabitants in District West are younger, healthier and wealthier than residents in other parts of the city. Rates for both morbidity and for suicidal thoughts are expected to be lower in the study area than in the city at large. The rates shown in the current study might be more representative for the country as a whole, as the sociodemographic characteristics of the sample area are more similar to those of the Swedish population.

Over one third of the women who acknowledged suicidal thoughts during the past year did not fulfil criteria for depressive disorder, anxiety disorder or ADA during this time period. It is reasonable to assume that some mildly afflicted persons in the community may indeed experience suicidal ideation of clinical relevance. A recent report stressed the disability and distress that may be associated with subsyndromal states (Judd et al. 1996). Even persons with mild depression may experience suicidal ideation (Nierenberg et al. 1996). We stress

the need for a careful assessment of suicidality in patients presenting with subthreshold disorders, and in the follow-up of patients who have been “successfully” treated for mental illness. Longitudinal studies focusing on the relationship between psychiatric pathology and suicidal behaviour over time are called for.

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## References

- Allgulander C (1994) Suicide and mortality patterns in anxiety neurosis and depressive neurosis. *Arch Gen Psychiatry* 51:708–712
- Allgulander C, Lavori PW (1991) Excess mortality among 3302 patients with “pure” anxiety neurosis. *Arch Gen Psychiatry* 48:599–602
- American Psychiatric Association (1987) *Diagnostic and Statistical Manual of Mental Disorders*, third edition, revised. Washington, DC: American Psychiatric Association
- Åsgård U (1990) A psychiatric study of suicide among urban Swedish women. *Acta Psychiatr Scand* 82:115–124
- Beck AT, Steer RA, Sanderson WC, Skeie TM (1991) Panic disorder and suicidal ideation and behaviour: discrepant findings in psychiatric outpatients. *Am J Psychiatry* 148:1195–1199
- Beskow J (1979) Suicide and mental disorder in Swedish men. *Acta Psychiatr Scand* 277 (Suppl):1–138
- Bronisch T, Wittchen H-U (1994) Suicidal ideation and suicide attempts: comorbidity with depression, anxiety disorders, and substance abuse disorder. *Eur Arch Psychiatry Clin Neurosci* 244:93–98
- Brown GW, Harris TO, Eales MJ (1996) Social factors and comorbidity of depressive and anxiety disorders. *Br J Psychiatry* 168 (Suppl 30):50–57
- Caetano R (1991) Correlates of DSM-III-R alcohol dependence in treatment and general populations. *Drug Alcohol Depend* 28:225–239
- Cornelius JR, Salloum IM, Mezzich J, Cornelius MD, Fabrega H Jr, Ehler JG, Ulrich RF, Thase ME, Mann JJ (1995) Disproportionate suicidality in patients with comorbid major depression and alcoholism. *Am J Psychiatry* 152:358–364
- Cox BJ, Dorenfeld DM, Swinson RP, Norton GR (1994) Suicidal ideation and suicide attempts in panic disorder and social phobia. *Am J Psychiatry* 151:882–887
- Friedman S, Jones JC, Chernen L, Barlow DH (1992) Suicidal ideation and suicide attempts among patients with panic disorder: A survey of two outpatient clinics. *Am J Psychiatry* 149:680–685
- Goldney RD, Smith S, Winefield AH, Tiggeman M, Winefield HR (1991) Suicidal ideation: Its enduring nature and associated morbidity. *Acta Psychiatr Scand* 83:115–120
- Harris EC, Barraclough B (1997) Suicide as an outcome for mental disorders. A meta-analysis. *Br J Psychiatry* 170:205–228
- Henriksson MM, Aro HM, Marttunen MJ, Heikkinen ME, Isometsä ET, Kuoppasalmi KI, Lönnqvist JK (1993) Mental disorders and comorbidity in suicide. *Am J Psychiatry* 150 935–940
- Hornig CD, McNally RJ (1995) Panic disorder and suicide attempt. A reanalysis of data from the Epidemiological Catchment Area study. *Br J Psychiatry* 164:76–79
- Johnson J, Weissman MM, Klerman GL (1990) Panic disorder, comorbidity, and suicide attempts. *Arch Gen Psychiatry* 47:805–808
- Judd LL, Paulus MP, Wells KB, Rapaport MH (1996) Socioeconomic burden of subsyndromal depressive symptoms and major depression in a sample of the general population. *Am J Psychiatry* 153:1411–1417
- Lester D (1992) Alcoholism and drug abuse. In: Maris RW, Berman AL, Maltzberger JT, Yufit RI (eds) *Assessment and Prediction of Suicide*. Guilford Press, New York, pp 321–336
- Mann JJ, Waternaux C, Haas GL, Malone KM (1999) Toward a clinical model of suicidal behaviour in psychiatric patients. *Am J Psychiatry* 156:181–189
- Moscicki EK (1989) Epidemiologic surveys as tools for studying suicidal behaviour: A review. *Suicide Life-Threat Behav* 19:131–146
- Moscicki EK, O’Carroll P, Locke BZ, Rae DS, Roy AG, Regier DA (1988) Suicidal ideation and attempts: The Epidemiologic Catchment Area. In: USDHHS, Report of the Secretary’s Task Force on Youth Suicide: Vol 4. Strategies for the prevention of youth suicide. Washington, DGUS Government Printing Office
- Murphy GE, Wetzel RD (1990) The lifetime risk of suicide in alcoholism. *Arch Gen Psychiatry* 47:383–392
- Nierenberg AA, Ghaemi SN, Clancy-Colecchi K, Rosenbaum JF, Fava M (1996) Cynicism, hostility, and suicidal ideation in depressed outpatients. *J Nerv Ment Dis* 184:10:607–610
- Paykel ES, Myers JK, Lindenthal JJ, Tanner J (1974) Suicide feelings in the general population – a prevalence study. *Br J Psychiatry* 124:460–469
- Petronis KR, Samuels JF, Moscicki EK, Anthony JC (1990) An epidemiologic investigation of potential risk factors for suicide attempts. *Soc Psychiatry Psychiatr Epidemiol* 25:193–199
- Research Triangle Institute (1997) SUDAAN Release 7.5. NC, USA
- Robins LN, Cottler LB, Babor TF (1986) The WHO/ADAMHA CIDI-SAM interview. (Revised 1987)
- Rudd MD, Dahm PF, Rajab MH (1993) Diagnostic comorbidity in persons with suicidal ideation and behaviour. *Am J Psychiatry* 150:928–934
- Runeson B (1989) Mental disorder in youth suicide. *DSM-III-R Axes I and II Acta Psychiatr Scand* 79:490–497
- Salander Renberg E (2001) Self-reported life-weariness, death-wishes, suicidal ideation, suicidal plans and suicide attempts in general population surveys in the north of Sweden 1986 and 1996. *Soc Psychiatry and Psychiatr Epidemiol* 36:429–436
- Schmitke A, Bille-Brahe U, DeLeo D, Kerkhof A, Bjerke T, Crepet P, Haring C, Hawton K, Lönnqvist J, Michel K, Pommereau X, Querejeta I, Phillippe I, Salander-Renberg E, Temesváry B, Wasserman D, Fricke S, Weinacker B, Sampaio-Faria JG (1996) Attempted suicide in Europe: rates, trends and sociodemographic characteristics of suicide attempters during the period 1989–1992. Results of the WHO/EURO Multicentre Study on Parasuicide. *Acta Psychiatr Scand* 93:327–338
- Spak F (1996) To what extent is female alcohol dependence and abuse known in the health care system? The use of multi-source information in a Swedish population survey. *Acta Psychiatr Scand* 93:87–91
- Spak F, Hällström T (1995) Prevalence of female alcohol dependence and abuse in Sweden. *Addiction* 90:1077–1088
- Suominen K, Henriksson M, Suokas J, Isometsä E, Ostamo A, Lönnqvist J (1996) Mental disorders and comorbidity in attempted suicide. *Acta Psychiatr Scand* 94:234–240
- Warshaw MG, Dolan RT, Keller MB (2000) Suicidal behaviour in patients with current or past panic disorder: five years of prospective data from the Harvard/Brown Anxiety Research Program. *Am J Psychiatry* 157:1876–1878
- Weissman MM, Bland RC, Canino GJ, Greenwald S, Hwu H-G, Joyce PR, Karam EG, Lee C-K, Lellouch J, Lepine J-P, Newman SC, Rubio-Stipec M, Wells JE, Wickramaratne PJ, Wittchen H-U, Yeh E-K (1999) Prevalence of suicide ideation and suicide attempts in nine countries. *Psychol Med* 29:9–17
- Weissman MM, Klerman GL, Markowitz JS, Ouellette R (1989) Suicidal ideation and suicide attempts in panic disorder and attacks. *N Engl J Med* 321:1209–1214