Soc Psychiat Epidemiol (2010) 45:1161–1166
DOI 10.1007/s00127-009-0159-5

ORIGINAL PAPER

Specific phobia predicts psychopathology in young women

Julia Trumpf · Jürgen Margraf · Noortje Vriends · Andrea H. Meyer · Eni S. Becker

Received: 17 February 2009 / Accepted: 15 October 2009 / Published online: 4 November 2009

Abstract
Background Although specific phobia is characterized by an early age at onset and by high rates of comorbidity, few studies have examined comorbid relationships prospectively.
Objectives The present study investigated the association between specific phobia and the risk of a broad range of psychopathology among young women in the community.
Method Data came from the Dresden Predictor Study in which 1,538 German women (18–25 years) completed a diagnostic interview at two time points.
Results Women with specific phobia had a twofold increase in odds of developing any anxiety disorder, generalized anxiety disorder, depression, and any somatoform disorder during 17 months, compared to women without specific phobia. Except for depression, these associations persisted after adjustment for all comorbid mental disorders.
Conclusions Specific phobia thus appears to be a risk factor for a variety of problems. The result further underpins the necessity for early intervention for specific phobia to prevent later mental health problems.

Keywords Specific phobia · Anxiety disorders · Risk factors · Epidemiology · Prospective longitudinal

J. Trumpf (✉) · J. Margraf · N. Vriends
Department of Clinical Psychology and Psychotherapy, Faculty of Psychology, University of Basel, Missionsstrasse 60/62, 4055 Basel, Switzerland
e-mail: julia.trumpf@unibas.ch

A. H. Meyer
Division of Applied Statistics in Life Sciences, Department of Clinical Psychology and Psychotherapy, Faculty of Psychology, University of Basel, Missionsstrasse 60/62, 4055 Basel, Switzerland

E. S. Becker
Department of Clinical Psychology, Behavioural Science Institute, Radboud University Nijmegen, P.O. Box 9104, 6500 HE Nijmegen, The Netherlands

Introduction

People with specific phobia suffer from one of the most common mental disorders. Women are two times more likely to be affected than men [1, 19, 27]. Numerous studies using clinical and community samples have documented considerable comorbidity between specific phobia and other psychopathology, in particular, other anxiety, depressive, and substance-related disorders [3, 6, 8, 10, 11, 13, 15, 21]. Another characteristic feature of specific phobia is its early onset during childhood and adolescence [3, 19, 27]. Moreover, retrospective age at onset reports have found that in people with specific phobia and comorbid disorders, specific phobia tends to develop first [13, 22, 25]. Thus, specific phobias apparently increase the chance to develop other mental disorders. However, since most previous studies used a cross-sectional retrospective design, it remains unclear whether specific phobia actually is a risk factor for the onset of other disorders [20].

Most prospective studies have focused on whether anxiety disorders in general are risk factors for the onset of depression [29]. Less attention has been given to separate anxiety disorders or the risk of mental disorders other than depression. Few studies have prospectively examined the risk of other disorders in participants with specific phobia using diagnostic interviews. In the Epidemiologic Catchment Area (ECA) study, adults with specific phobia were more likely than those without to develop major depression

[16]. In the Early Developmental Stages of Psychopathology (EDSP) study, this finding was replicated with a younger sample of 14–24 year olds [5]. Further, looking at the same sample, it was found that specific phobia did not increase the risk of alcohol use disorders [30].

A problem of previous studies is that they are restricted to the risk of depression and alcohol use disorders, nothing is known about other mental disorders. In addition, one study [16] investigated participants across a wide age range (18 years and older) even though the peak risk period for onset of mental disorders is limited to early adulthood [7]. Given the large number of women with specific phobia, investigating this group would be highly valuable.

The present study used a prospective design to explore whether young women with specific phobia had an increased risk of developing other mental disorders. Overcoming some of the limitations encountered in previous studies, the study focused on women during early adulthood covering a peak risk phase for mental disorders. Moreover, we examined for the first time the association between specific phobia and a broad range of disorders using standard diagnostic criteria and structured interviews. Data came from a prospective study in which a community sample of young women underwent a diagnostic interview regarding a variety of mental disorders at two time points.

Methods

Participants

Participants were 1,538 German women who participated in the Dresden Predictor Study (DPS; also referred to as the Dresden Mental Health Study), a prospective study of mental disorders. The study consists of a baseline investigation conducted from 1996 to 1997 and one follow-up conducted approximately 17 months ($M = 16.9$ months, SD = 6.0, range = 7–30 months) after baseline. This paper is restricted to those participants who completed the diagnostic interview of mental disorders at both waves of data collection. Detailed descriptions of the DPS design, sampling, and representativeness of the sample have been reported elsewhere [4, 28].

Participants were drawn randomly from the 1996 population registers of residents in Dresden. All participants had to meet the selection criteria of being female and being aged 18–25 years at the time of initial interview. A total of 5,203 women were located and deemed eligible for the study. Of these, 2,138 women (41.1%) did not respond. Reasons for non-response were refusal to take part (68.3%), lack of time (24.6%), and failure to appear at the interview (7.2%). Analyses of response bias suggested that women with more mental problems were less likely to participate in the study [28]. At baseline, 2,068 women completed the diagnostic interview and 998 filled out questionnaires only, resulting in a response rate of 58.9%. Of the 2,068 women who participated in the initial interview, 1,538 (74.4%) completed the interview at follow-up. Dropout was associated with having a romantic partner (OR = 1.60, 95% CI = 1.28–1.99), a lower educational level (OR = 0.81, 95% CI = 0.75–0.87), and being employed full-time (OR = 0.94, 95% CI = 0.89–0.99). Dropouts were more likely to be diagnosed with a current generalized anxiety disorder at baseline (OR = 2.25, 95% CI = 1.16–4.34). However, specific phobia and all other current mental disorder diagnoses at baseline did not predict attrition between baseline and follow-up.

At baseline, the mean age of women was 21 years old (SD = 1.9, range = 18–25 years). Few participants (2.3%) had finished pre-secondary schooling with the lowest educational level ("Hauptschule") and approximately 30% had achieved an intermediate level of school education ("Realschule" or "Polytechnische Oberschule"). Most participants (62.9%) had completed the highest educational level ("Abitur"), which qualified them for university entry. Almost half of participants were working; 16.9% worked part-time, 29.6% full-time. About 30% were classified as belonging to the lower socioeconomic status, most participants (63.8%) were classified as belonging to the middle socioeconomic status, and few participants as high (8.5%).

First and second diagnostic interviews

The interviewer invited each participant for an individual face-to-face interview. Participants' mental disorders were assessed using the "Diagnostisches Interview bei Psychischen Störungen—Forschungsversion" (F-DIPS; translation: Diagnostic Interview for Mental Disorders—Research Version) [23], a structured diagnostic interview of Axis I mental disorders according to the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV) [2], for lifetime and 7-day point prevalence. The F-DIPS is an earlier version of the DIPS [26] and is based on a German translation and extension of the Anxiety Disorders Interview Schedule (ADIS-IV-L) [12]. The following DSM-IV mental disorders can be diagnosed with the F-DIPS: all anxiety and affective disorders, mixed anxiety–depression, somatoform disorders (hypochondriasis, somatization disorder, conversion disorder, and pain disorder), substance use disorders, eating disorders, and some childhood disorders (attention-deficit/hyperactivity disorder, conduct disorder, oppositional defiant disorder, encopresis, enuresis, and separation anxiety disorder). For each diagnosis, the participants also reported the age at onset of their mental problems.

The mean duration of the first interview was 114 min (range = 30–330 min); the mean duration of the second interview was 76 min (range = 15–270 min). The second interview was shorter than the first because it only assessed each disorder for the interval between interviews. Moreover, the second interview did not include childhood disorders. All other procedures during first and second interviews were identical.

The reliability and validity of the F-DIPS were tested in a sample of 191 patients from a psychosomatic clinic [18]. The retest reliabilities for current diagnoses in five diagnostic categories ranged between 0.65 and 0.89 (kappa, κ) and 0.65 and 0.94 (Yule's Y, γ). For the diagnosis of specific phobia, the retest reliability was good ($\kappa = 0.56$, $\gamma = 0.73$). The validity of the F-DIPS was examined through a comparison with self-report questionnaires and diagnoses made by therapists. Overall, the study indicated that the F-DIPS proved to be a valid instrument for the diagnostic evaluation of mental disorders [18].

For the current set of DPS interviewers, interrater reliability was examined by asking a second interviewer to provide symptom ratings and diagnoses for audiotapes of 43 randomly selected interviews. The degree of agreement between the first and second interviewer was reflected by kappa values between 0.58 and 1.0 and Yule's Y between 0.64 and 1.0 for lifetime diagnoses in five diagnostic categories [24].

F-DIPS interviewers were psychologists, physicians, or psychology students in their last year of study. To ensure blinding, the interviewer who conducted the second interview was unaware of the participant's diagnoses in the initial interview. All interviewers underwent 1 week of intensive training. During training, supervisors explained the different disorders, emphasizing DSM-IV criteria and differential diagnoses. The interviewers practiced all F-DIPS sections in a pre-field training session and rated four videotaped interviews with patients. After training, each interviewer conducted two practice interviews before commencing fieldwork. All interviewers received biweekly supervision during fieldwork. Moreover, supervisors proofread every single completed interview protocol for formal consistency, appropriate recording, and coding. In cases where problems were detected, the interviewer was contacted and instructed for corrections.

Statistical analyses

Prospective associations between lifetime specific phobia at baseline and incidence of mental disorders at follow-up were estimated using logistic regressions with odds ratios (ORs) and 95% confidence intervals (CIs). Lifetime prevalence denotes the rate of the disorder and covers participants' lifetime period prior to initial assessment. Incidence refers to new cases during the 17-month period among participants who were unaffected at baseline. We analyzed three sets of models. First, unadjusted associations were calculated. Second, because the effect of specific phobia on the risk of subsequent psychopathology might be confounded by other comorbid mental disorders, we adjusted our analyses for disorders occurring prior to the onset of specific phobia. Control variables for prior mental disorders were coded as follows: the control variable was set to 1 if a woman had at least one specific phobia and the other disorder temporally preceded the specific phobia or if a woman was not diagnosed with specific phobia and the other disorder was present and preceded the median age at onset of specific phobia. In all other cases, the control variable was set to 0. There were no cases in which the age at onset was the same for specific phobia and the control disorder [17]. Third, in an additional set of logistic regressions, we adjusted the associations between specific phobia at baseline and each incident mental disorder for all comorbid mental disorders at baseline.

Results

Specific phobia at baseline

Using the diagnostic procedure described above, 189 of the 1,538 women (12.3%) were diagnosed as meeting DSM-IV criteria for lifetime specific phobia in the initial interview. Animal (41.8%), environmental (22.2%), and blood–injection–injury phobias (21.2%) were most common, followed by situational (18.0%) and physical phobias (14.8%). Phobias categorized as "others" occurred rarely (6.9%). Participants reported a median onset of phobic fear at 5.0 years of age (mean = 7.6 years).

Incidence of mental disorders at follow-up

The percentage and number of incident mental disorders during the 17-month period among women with and without specific phobia at baseline are shown in Table 1. Overall, all the percentages are higher in the group with specific phobia, indicating that women with specific phobia more often developed an incident disorder during the 17 months from first to second interview. Results from logistic regression analyses showed that women with specific phobia had, compared to those without, a significantly increased risk of developing a variety of problems. They were significantly more likely than those without to develop any other anxiety disorder. Looking at specific anxiety disorders, only generalized anxiety disorder was significantly related. Furthermore, major depression and

Table 1 Associations between specific phobia at baseline and incidence of mental disorders at follow-up

Mental disorder	*N* at risk[a]	Incidence at follow-up		Unadjusted odds ratio OR (95% CI)	Odds ratio adjusted for all mental disorders at baseline OR (95% CI)
		Women without specific phobia % (*n*)	Women with specific phobia % (*n*)		
Any other anxiety disorder	1,245	9.0 (100)	15.1 (19)	1.81* (1.07–3.07)	1.74* (1.02–2.99)
Panic/agoraphobia	1,458	2.7 (35)	4.6 (8)	1.72 (0.78–3.77)	1.33 (0.60–2.98)
Social phobia	1,354	5.2 (63)	7.7 (11)	1.52 (0.78–2.95)	1.52 (0.77–2.98)
Generalized anxiety disorder	1,501	2.1 (28)	6.6 (12)	3.28** (1.64–6.57)	2.67** (1.30–5.47)
Obsessive–compulsive disorder	1,518	0.8 (11)	2.2 (4)	2.64 (0.83–8.38)	2.19 (0.67–7.19)
Posttraumatic stress disorder	1,492	0.2 (3)	1.1 (2)	4.87 (0.81–29.35)	3.84 (0.60–24.73)
Any affective disorder	1,341	7.0 (83)	10.5 (16)	1.57 (0.89–2.76)	1.24 (0.69–2.22)
Major depression	1,375	6.1 (74)	11.4 (18)	1.99* (1.15–3.42)	1.56 (0.89–2.74)
Dysthymia	1,512	0.1 (1)	0 (0)	n.e.	n.e.
Bipolar I disorder	1,528	0.4 (6)	0 (0)	n.e.	n.e.
Bipolar II disorder	1,537	0.4 (5)	0 (0)	n.e.	n.e.
Any substance use disorder	1,509	1.3 (17)	1.6 (3)	1.29 (0.38–4.45)	0.91 (0.26–3.21)
Any eating disorder	1,477	1.0 (13)	1.7 (3)	1.67 (0.47–5.93)	1.27 (0.35–4.64)
Any somatoform disorder	1,494	1.8 (24)	5.0 (9)	2.83** (1.29–6.19)	2.64* (1.18–5.93)

OR odds ratio, *CI* confidence interval, *n.e.* not estimable because of empty cells

[a] For example, 1,245 participants without any other anxiety disorder at baseline were included in the prospective analysis

* $p < 0.05$, ** $p < 0.01$

somatoform disorders were linked to specific phobia (Table 1).

Is the risk of psychopathology due to comorbid disorders?

When analyses were rerun adjusting for disorders occurring prior to specific phobia, the patterns of significant results remained stable. Women with specific phobia still had a significantly increased risk of onset of any other anxiety disorder, generalized anxiety disorder, depression, and any somatoform disorder, compared to those without specific phobia (not shown in Table 1). Even after adjustment for all comorbid disorders at baseline, these associations remained relatively stable with only slightly smaller odds ratios, with the exception of depression, which was no longer statistically significant. Specific phobia predicted onset of any anxiety disorder, generalized disorder, and any somatoform disorder over 17 months, adjusting for comorbid psychopathology (Table 1).

Discussion

To our knowledge, this is the first study to examine the relationship between specific phobia and a broad spectrum of psychopathology using prospective data in young women during a period of peak risk for developing mental disorders for the first time. The present study extends earlier findings by providing evidence that specific phobia is a risk factor for a variety of mental disorders. The prospective analyses revealed that women with specific phobia had an increased risk of developing any other anxiety disorder, generalized anxiety disorder, major depression, and any somatoform disorder. Women with specific phobia remained at an increased risk even after adjusting for disorders occurring prior to specific phobia. After adjusting for all comorbid mental disorders at baseline, specific phobia no longer remained significantly associated with the onset of depression. Possible explanation for this finding include: (1) the sample size in the present study was too small for accurate prediction in multiple logistic regression or (2) disorders occurring subsequent to the onset of specific phobia (e.g., other anxiety disorders) may be the consequence of specific phobia and part of the mechanism placing an individual at risk for depression [17]. Interestingly, specific phobia was most strongly associated with first onset of any somatoform disorder and generalized anxiety disorder. Given the characteristic feature of the early onset of specific phobia [7, 19], it is important to note that our adjustments also include childhood disorders.

Our findings are partly consistent with previous prospective studies [5, 16] in which participants with specific phobia were at risk for depression. In these studies with larger samples, the adjusted ORs for the effect of specific phobia on onset of depression (ORs = 1.7 and 1.8,

respectively) are similar to the unadjusted OR in our study (OR = 1.99). Therefore, future studies are required in children and adolescent samples to determine the order of onset of specific fears and phobias and depressive symptomatology. The non-significant effect of specific phobia on the development of substance use disorders concurs with findings from another study [30], in which participants with specific phobia were not at risk for alcohol use disorders. Overall, these findings reinforce the need for more prospective studies to investigate how and why specific phobia elevates the risk for other mental disorders. Perhaps, one possibility might be that specific phobia and comorbid disorders share a similar underlying diathesis. A further possibility might be that specific phobia increases the risk for onset of other mental disorders, e.g., by inducing avoidance behavior and cognitive distortions that mediate the risk for acquiring further mental disorders.

When comparing the age at onset for specific phobia in the present study with previous epidemiological research, the present sample had a somewhat lower mean (7.6 years) and median (5.0 years), respectively [9]. There are at least three possible explanations for this finding. First, we studied a relatively young sample and thus participants may be less likely to have forgotten early and less impairing forms of specific phobia. Consistent with our finding, studies of younger epidemiological samples suggest a very early mean onset of specific phobia at the end of childhood [14]. Second, the age at onset in our sample was apparently lowered by the fact that a relatively large proportion of women claimed always to have suffered from their specific phobia (77 of 257 specific phobia diagnoses). Third, diagnostic assessment in our study was based on a structured diagnostic interview and the stem question of the specific phobia section in the F-DIPS interview investigated a broad spectrum of potentially phobic stimuli (18 probes). This made it probably easier to detect specific phobia.

The following limitations of our study should be noted. First, the sample size was relatively small and thus some non-significant effects could be due to reduced statistical power, especially with respect to the analyses of disorders such as obsessive–compulsive disorder, posttraumatic stress disorder, substance use, and eating disorders. Second, due to retrospective lifetime diagnoses at the initial interview, participants may have forgotten the presence and age at onset of early disorders. Third, our sample had a relatively high educational and socioeconomic level, and hence comparison with other women in this age group must be made with caution.

Despite these limitations, our study suggests that beyond cross-sectional comorbidity with other mental disorders, specific phobia carries a risk for the development of other disorders. Our findings are based on diagnostic interviews in a large community sample that were examined with prospective methods. Further studies are needed to investigate possible variables through which the effect of specific phobia on onset of other disorders is mediated or moderated, or both. In addition, studies could examine whether early prevention and treatment of people with specific phobia are able to reduce the risk of subsequent serious problems. The fact that specific phobia is one of the most common disorders, and has shown its potential as a risk factor in this study, makes such a possibility particularly worth investigating.

Acknowledgments This study was supported by grant DLR 01EG9410 from the German Ministry of Science, Research and Education. Jürgen Margraf and Julia Trumpf were supported by grant 51A240-104890 from the Swiss National Science Foundation. We would like to thank the many people who helped with the study.

References

1. Alonso J, Angermeyer MC, Bernert S, Bruffaerts R, Brugha TS, Bryson H et al (2004) Prevalence of mental disorders in Europe: results from the European Study of Epidemiology of Mental Disorders (ESEMeD) project. Acta Psychiatr Scand Suppl 109(420):21–27
2. American Psychiatric Association (1994) Diagnostic and statistical manual of mental disorders, vol 4th. APA, Washington, DC
3. Becker ES, Rinck M, Türke V, Krause P, Goodwin R, Neumer S-P et al (2007) Epidemiology of specific phobia subtypes: findings from the Dresden Mental Health Study. Eur Psychiatry 22:69–74
4. Becker ES, Türke V, Neumer S-P, Margraf J (2000) Incidence and prevalence rates of mental disorders in a community sample of young women: results of the Dresden study. In: Manz R, Kirch W (eds) Public health research and practice: report of the public health research association Saxony. Roderer, Germany, pp 259–291
5. Bittner A, Goodwin RD, Wittchen H-U, Beesdo K, Höfler M, Lieb R (2004) What characteristics of primary anxiety disorders predict subsequent major depressive disorder? J Clin Psychiatry 65:618–626
6. Brown TA, Campbell LA, Lehmann CL, Grisham JR, Mancill RB (2001) Current and lifetime comorbidity of the DSM-IV anxiety and mood disorders in a large clinical sample. J Abnorm Psychol 4:585–599
7. Burke KC, Burke JD, Regier DA, Rae DS (1990) Age at onset of selected mental disorders in five community populations. Arch Gen Psychiatry 47:51–518
8. Choy Y, Fyer AJ, Goodwin RD (2007) Specific phobia and comorbid depression: a closer look at the National Comorbidity Survey data. Compr Psychiatry 48:132–136
9. de Graaf R, Bijl RV, Spijker J, Beekman ATF, Vollebergh WAM (2003) Temporal sequencing of lifetime mood disorders in relation to comorbid anxiety and substance use disorders: findings from the Netherlands Mental Health Survey and Incidence Study. Soc Psychiatry Psychiatr Epidemiol 38:1–11

10. Depla MFIA, ten Have ML, van Balkom AJLM, de Graaf R (2008) Specific fears and phobias in the general population: results from the Netherlands Mental Health Survey and Incidence Study (NEMESIS). Soc Psychiatry Psychiatr Epidemiol 43:200–208
11. de Ruiter C, Rijken H, Garssen B, van Schaik A, Kraaimaat F (1989) Comorbidity among the anxiety disorders. J Anxiety Disord 3:57–68
12. Di Nardo PA, Brown TA, Barlow DH (1995) Anxiety Disorders Interview Schedule for DSM-IV: lifetime version (ADIS-IV-L). Graywind Publications, Albany
13. Essau CA, Conradt J, Petermann F (2000) Frequency, comorbidity, and psychosocial impairment of anxiety disorders in German adolescents. J Anxiety Disord 14:263–279
14. Giaconia RM, Reinherz HZ, Silverman AB, Pakiz B, Frost AK, Cohen E (1994) Ages of onset of psychiatric disorders in a community population of older adolescents. J Am Acad Child Adolesc Psychiatry 33:706–717
15. Goisman RM, Allsworth J, Rogers MP, Warshaw MG, Goldenberg I, Vasile RG et al (1998) Simple phobia as a comorbid anxiety disorder. Depress Anxiety 7:105–112
16. Goodwin RD (2002) Anxiety disorders and the onset of depression among adults in the community. Psychol Med 32:1121–1124
17. Höfler M, Brückl T, Lieb R, Wittchen H-U (2005) Calculating control variables with age at onset data to adjust for conditions prior to exposure. Soc Psychiatry Psychiatr Epidemiol 40:731–736
18. Keller A (2000) Die Klassifikation psychischer Störungen nach DSM-IV mit Hilfe eines strukturierten diagnostischen Interviews (F-DIPS). Unpublished dissertation, Ruprecht Karls University of Heidelberg
19. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE (2005) Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry 62:593–602
20. Kraemer HC, Kazdin AE, Offord DR, Kessler RC, Jensen PS, Kupfer DJ (1997) Coming to terms with the terms of risk. Arch Gen Psychiatry 54:337–343
21. Lewinsohn PM, Zinbarg R, Seeley JR, Lewinsohn M, Sack WH (1997) Lifetime comorbidity among anxiety disorders and between anxiety disorders and other mental disorders in adolescents. J Anxiety Disord 11:377–394
22. Magee WJ, Eaton WW, Wittchen H-U, McGonagle KA, Kessler RC (1996) Agoraphobia, simple phobia, and social phobia in the national comorbidity survey. Arch Gen Psychiatry 53:159–168
23. Margraf J, Schneider S, Soeder U, Becker ES (1996) F-DIPS: Diagnostisches Interview bei Psychischen Störungen (Forschungsversion). Unpublished manuscript, Dresden University of Technology
24. Satlow E (1996) Die Interrater-Reliabilität im Diagnostischen Interview bei Psychischen Störungen, Forschungsversion (F-DIPS) bei der Studie Gesundheit in Dresden. Unpublished diploma-thesis, Free University of Berlin
25. Schatzberg AF, Samson JA, Rothschild AJ, Bond TC, Regier DA (1998) McLean Hospital depression research facility: early-onset phobic disorders and adult-onset major depression. Br J Psychiatry 173(Suppl 34):29–34
26. Schneider S, Margraf J (2006) DIPS: Diagnostisches Interview bei psychischen Störungen. Springer, Berlin
27. Stinson FS, Dawson DA, Chou SP, Smith S, Goldstein RB, Ruan WJ et al (2007) The epidemiology of DSM-IV specific phobia in the USA: results from the National Epidemiological Survey on Alcohol and Related Conditions. Psychol Med 37:1047–1059
28. Trumpf J, Vriends N, Meyer AH, Becker ES, Neumer S-P, Margraf J (2009) The Dresden Predictor Study (DPS) of anxiety and depression: objectives, design, and methods. Soc Psychiatry Psychiatr Epidemiol [Epub ahead of print]
29. Wittchen H-U, Beesdo K, Bittner A, Goodwin RD (2003) Depressive episodes-evidence for a causal role of primary anxiety disorders? Eur Psychiatry 18:384–393
30. Zimmermann P, Wittchen H-U, Höfler M, Pfister H, Kessler RC, Lieb R (2003) Primary anxiety disorders and the development of subsequent alcohol use disorders: a 4-year community study of adolescents and young adults. Psychol Med 33:1211–1222