

Research Article

FREQUENCY AND PATTERNS OF MENTAL HEALTH SERVICES UTILIZATION AMONG ADOLESCENTS WITH ANXIETY AND DEPRESSIVE DISORDERS

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The main aim of this study was to examine the frequency and patterns of mental health services utilization among 12- to 17-year-old adolescents with anxiety and depressive disorders. Another aim was to examine the factors associated with the use of mental health services. The study population comprised 1,035 adolescents randomly recruited from 36 schools. Anxiety and depressive disorders were coded based on DSM-IV criteria using the computerized Munich version of the Composite International Diagnostic Interview. Only 18.2% of the adolescents who met DSM-IV criteria for anxiety disorders, and 23% of those with depressive disorders, used mental health services. Among adolescents with anxiety disorders, mental health services utilization was associated with past suicide attempt, older age, the presence of comorbid disorders, as well as parental anxiety and depression. The only factor that predicts the use of mental health service among adolescents with depressive disorder was a history of suicide attempt. The implication of the results in terms of tailoring services for children and adolescents with anxiety and depressive disorders are discussed. Depression and Anxiety 22:130–137, 2005. © 2005 Wiley-Liss, Inc.

Key words: *anxiety disorders; depressive disorders; mental health services; impairment; adolescents*

INTRODUCTION

Information about the use of mental health services among adolescents with anxiety and depressive disorders is important for a number of reasons: First, anxiety and depressive disorders are among the most common psychiatric disorders in adolescents, with as many as 20% of the adolescents in the general population reported as having had these disorders sometimes in their lives [e.g., Cohen et al., 1993; Essau et al., 2000; Lewinsohn et al., 1993, 1997; McGee et al., 1990]. Second, anxiety and depressive disorders generally co-occur with other disorders such as substance use disorders [Cohen et al., 1993; Essau et al., 2000; Kashani and Orvaschel, 1990; Keller et al., 1992; Lewinsohn et al., 1997; McGee et al., 1990]. Third, adolescents who have anxiety and depression are highly impaired in various life domains, such as in school, at home, and in social activities [Ginsburg et al., 1998; Kashani and Orvaschel, 1990]. Fourth, anxiety and depressive disorders tend to

follow a chronic course, with a low remission rate [Harrington et al., 1990; Kovacs, 1996; Last et al., 1997; Pine et al., 1998]. Finally, the presence of anxiety and depressive disorders early in life tends to increase a risk of developing other disorders later in life.

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In contrast to the amount of studies on the epidemiology, comorbidity, and course of anxiety and depressive disorders, only a few studies have examined the use of mental health services among adolescents with these disorders. The few existing studies have reported much variation in the use of mental health services for anxiety and depressive disorders, which may reflect methodological differences or real cultural differences among samples, or differences in health care systems in different countries. For example, in one American study [Whitaker et al., 1990], about half of the adolescents with an anxiety disorder have made some type of consultation for emotional problems from a general health provider and mental health professional. Most of these visits were made by those with generalized anxiety disorder (60%) and obsessive-compulsive disorder (25%), and less frequently by those with panic disorder (14%). The rates of mental health service utilization reported in other studies were much lower than those reported by Whitaker and colleagues. In another American study [Keller et al., 1992], only 24% of the children with anxiety received treatment for these anxiety disorders. Of those who sought treatment, 13% received individual counseling, 5% received family counseling, and 5% received psychological evaluation (without treatment). In a Canadian study [Bowen et al., 1990], almost 16% of the subjects had used mental health or social services, and another 10.3% perceived themselves as having had emotional or behavioral problems for which professional help is or was needed. In a study in New Zealand [Fergusson et al., 1993], 9% of the children with anxiety or mood disorder had used some forms of health services for their conditions. The use of health services was significantly affected by the presence of comorbid disorders, with service utilization rates increasing significantly with the increased number of comorbid disorders.

The rates for mental health services utilization for adolescent depression also differed across studies, with rates ranging from 15% to 65% [Cuffe et al., 1995; Goodman et al., 1997; Offord et al., 1987]. In a study by Lewinsohn et al. [1998], 60% of the adolescents who met the diagnosis of a major depression had received any mental health treatment. The most commonly used treatment was individual outpatient psychotherapy (60.1%). Inpatient treatment was rare, and was generally given to those whose depression co-occurred with substance use disorders. Mental health services utilization was significantly associated with the presence of comorbid mental disorders, a history of suicide attempt, academic problems, a nonintact family, female gender, severity of depression, and the number of previous depressive episodes. Nine percent received pharmacotherapy, mostly antidepressant (4.2%) and anti-anxiety (3.7%) medication.

Because most of these studies have been conducted in the United States [Keller et al., 1992; Whitaker et al., 1990], Canada [Bowen et al., 1990], and New Zealand

[Fergusson et al., 1993], they cannot be regarded as representative of services utilization among adolescents with anxiety and depressive disorders in other countries due to reasons discussed earlier (e.g., methodological differences, real cultural differences, and differences in health care systems). In Germany, for example, the history of the modern German health care system can be traced back to Bismarck and his initiative to provide social security independent of socioeconomic status. The statutory health insurance occupies a central position in the health care system in the Federal Republic of Germany. At present, about 88% of the population is covered by the statutory health insurance [European Observatory on Health Care Systems, 2000]. About 9% are covered by private health insurance, 2% by free governmental health care (e.g., police officers, soldiers), and only 0.1% of the population is not insured. Individuals' contributions to the health insurance are dependent on their income, and are shared on an equal basis by the insured and their employers. Included in the health care benefits package are prevention, screening, and treatment of diseases (medical, psychiatric, dental, psychotherapy), as well as transportation to the hospitals or outpatient clinics. As a result, comprehensive health care for the population is guaranteed. Another important feature of the German health care system, unlike many health care systems around the world, is that it is not based on a gatekeeper system; that is, the patients have the right to select and to go directly to any health professional they wish to receive help or treatment. A referral from a general practitioner as a prerequisite for a visit to a specialist (including a clinical psychologist or psychiatrist) is not needed. All medical matters, and matters related to psychotherapy are under the jurisdiction of the medical lobby (*Kassenärztliche Vereinigung*), which acts as a mediator between the Federal Ministry of Health and the health insurance companies, as well as between the insured persons and the health insurance companies. In the current reimbursement scheme, only services related to psychodynamic therapy/psychoanalysis (since 1970) and cognitive-behavioral or behavioral therapy (since 1981) can be reimbursed from the health insurance companies.

If more effective service systems are to be developed, it is important to have information regarding where adolescents with anxiety and depression receive mental health services. Furthermore, we need to know the extent to which those in greatest need of these services actually receive treatment. Therefore, the main aims of this study were to address the following questions: (1) How frequently did adolescents with anxiety and depressive disorders seek mental health services? (2) Of those who sought help, what type of treatment was received? (3) What factors were related to mental health utilization? (4) Was there any association between mental health services and the stability of anxiety and depressive disorders?

METHODS

SAMPLE

Participants were adolescents, ages 12 to 17 years, who were randomly selected from 36 high schools in the province of Bremen, Germany. The study is a longitudinal, large-scale, community-based study of the epidemiology of psychiatric disorders among adolescents [Essau et al., 1998, 1999a,b]. The specific aims of the study are to estimate the frequency, risks, course, and outcome of psychiatric disorders, to determine age of onset and severity, and to examine the comorbidity patterns of disorders and associated psychosocial impairment, as well as service utilization patterns.

Permission to conduct the study in the schools was granted by the Ministry of Education, the Ministry of "Confidentiality" (in German: *Landesbeauftragter für den Datenschutz*), and the ethics committees in each participating school. Schools were selected to ensure nationally representative estimates for each grade, and classes were selected from the target grade using simple random sampling. All students in a selected class were asked to participate, with active parental and student written consent.

Data collection for the first wave of the study took place between May 1996 and July 1997. Details about the study's design, sample, and characteristic have been described elsewhere [Essau et al., 2000, 2001]. Altogether 2,300 students in the 36 schools were approached to participate in the study; the number of students approached in each individual school varied due to organization (e.g., tight schedule, lack of room to conduct the interview) and political issues (e.g., lack of interest or support from teachers) in some schools. A total of 1,444 adolescents agreed to participate; however, data of 1,035 students were used in this analysis. Data of 197 adolescents were excluded because they did not fulfill the age criteria (they were younger than 12 years or older than 17 years; $N = 87$), or had too many missing or problematic data points ($N = 110$). In addition, 79 students wanted to participate but were unable to do so due to being sick or on holiday, or were not allowed by their teachers to participate due to tight academic schedules in their class; another 133 students were unable to obtain a signed consent form from their parent or guidance counselor. Thus, the response rate for the present study was 62.8%.

Of the 1,035 adolescents with a complete data set, 421 were males and 614 were females. The average age was 14.3 years ($SD = 1.7$). Almost all of the adolescents were living at home with at least one of their parents. About an average of 15 months after the first interview (T1), attempts were made to contact (via telephone and mail) all the 1,035 adolescents to participate in the follow-up investigation, of whom 760 could be reached. A total of 240 adolescents could not be contacted either by telephone (up to 10 attempts) or by mail (e.g., unknown new address), and 35 adoles-

TABLE 1. Lifetime frequency of anxiety and depressive disorders in adolescents

	Total ($N = 1,035$) N (%)	Cases that received mental health services N (%)
Anxiety disorders (any)	192 (18.6)	35 (18.2)
Panic disorder	5 (0.5)	1 (20.0)
Agoraphobia	42 (4.1)	11 (26.2)
Social phobia	17 (1.6)	4 (23.5)
Specific phobia	36 (3.5)	5 (13.9)
Obsessive-compulsive disorder	13 (1.3)	4 (30.8)
Generalized anxiety disorder	4 (0.4)	1 (25.0)
Posttraumatic stress disorder	17 (1.6)	8 (47.1)
Phobia NOS	123 (11.9)	16 (0.22)
Depressive disorders	185 (17.9)	42 (23.0)
Anxiety and depressive disorders		
Pure anxiety disorders	94 (9.1)	10 (10.6)
Pure depressive disorders	77 (7.4)	14 (18.2)
Anxiety and depressive disorders	34 (3.3)	9 (26.5)

cents were not in Bremen during the whole of the follow-up period: Six were on an exchange program overseas and 29 had moved to other German cities. One hundred thirty-eight students refused to take part, mostly due to lack of time. Among those who agreed to participate ($N = 622$) in the T2 interview, 566 actually were interviewed. No interview could be made for 61 adolescents due to organizational problems, such as being sick or on holiday. Data of 43 adolescents had to be excluded due to "problematic" or missing data. Therefore, data of 523 adolescents formed the database for the T2 interview. Of these adolescents, 195 were males and 328 were females, with a mean age of 15.2 years ($SD = 1.7$). The attrition and nonattrition groups did not differ significantly on age and gender, as well as on parental marital and socioeconomic status.

MEASURES

Computer-Assisted Personal Interview (CAPI) of the Munich version of the Composite International Diagnostic Interview (CIDI). Anxiety (agoraphobia, social phobia, specific phobia, panic disorder, generalized anxiety disorder, posttraumatic stress disorder, and obsessive-compulsive disorder), depressive, and other psychiatric disorders (substance use and somatoform disorders) were coded based on DSM-IV criteria [American Psychiatric Association, 1994] using the CAPI [Wittchen and Pfister, 1997] of the Munich version of the CIDI. The CAPI, a modified version of the CIDI, is a fully structured diagnostic interview developed as a collaborative project between the World Health Organization and the U.S. Alcohol, Drug Abuse, and Mental Health Administration.

The CAPI also contains questions related to parental psychopathology (i.e., the presence of psychiatric

syndromes in students' parents). Reports of parental psychopathology were obtained from the adolescents.

Both the reliability and validity of the CIDI diagnoses have been examined in numerous studies in different centers throughout the world as part of the World Health Organization field trials of the CIDI. Findings of these field trials have shown the CIDI to have good cultural appropriateness, excellent interrater reliability, and good test-retest reliability [Wittchen et al., 1991]. The test-retest reliability of the CAPI has also been examined in a sample of 60 community adolescents and young adults [Wittchen and Pfister, 1997]. With the exception of generalized anxiety disorder ($\kappa = .45$), the κ values of the other anxiety disorders were all above .72. The test-retest reliability for age of onset and time-related questions was also high, with intraclass correlation values of .79 or above. The validity of the CAPI has been examined in young adults recruited from a psychiatric hospital. The concordance between clinicians and interview for DSM-IV diagnoses was generally good across disorders. The κ value for any anxiety disorders was .79, for posttraumatic stress disorder, .91, for social phobia, .80, and for panic disorder, .63.

Use of mental health services was assessed using the mental health services utilization section (section Q) of the CAPI. The subjects were asked whether or not they had ever sought professional help due to emotional/psychiatric problems or problems related to alcohol/drugs. This question was followed by a list of different types of services in which mental health services were sought: (1) inpatient setting (e.g., psychiatric clinic, neurological clinic, psychotherapeutic clinic, psychosomatic clinic, clinic for alcohol and drug dependence); (2) outpatient setting (e.g., psychosomatic or psychotherapeutic outpatient services, psychiatric outpatient services, different types of counseling services, clinical psychologist, social psychiatric services); (3) general practitioners (only related to the treatment of emotional difficulties) and school psychologist; and (4) other institutions (e.g., self-help groups, telephone services).

Estimates of service use rates were based on data from the baseline assessment.

Symptom Checklist-90—Revised (SCL-90-R). The SCL-90-R is a 90-item self-report questionnaire used to assess psychological distress [Derogatis, 1977]. Each item is rated on a 5-point scale (*not at all* to *extremely*) to indicate the severity of the symptom over the past week. The inventory assesses nine clusters or primary symptom dimensions: somatization, obsessive-compulsive behavior, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Although the SCL-90-R was originally developed for adults, it has been used in adolescents and has proved to have good to excellent psychometric properties [McGough and Curry, 1992]. Both the reliability and validity of the German version of the SCL-90-R, when used in adolescents, have been

reported in an earlier publication [Essau et al., 2001]. The internal consistency for all the SCL-90-R subscales was relatively high, with Cronbach's α 's between .64 and .84. Furthermore, adolescents who met the diagnosis of several disorders (e.g., anxiety, depressive, somatoform, and substance use disorders) had higher scores on the SCL-90-R than those without any of these psychiatric disorders [Essau et al., 2001].

RESULTS

FREQUENCY AND PATTERNS OF MENTAL HEALTH SERVICES USE AMONG ADOLESCENTS WITH ANXIETY AND DEPRESSIVE DISORDERS

Among those with any anxiety disorders ($N = 192$), only 35 (18.2%) received any mental health treatment (Table 1). Within the anxiety disorders, adolescents with posttraumatic stress disorder (47.1%) had the highest rate of mental health services utilization, followed by those with obsessive-compulsive disorder (30.8%) and generalized anxiety disorder (25%). Phobia not otherwise specified (phobia NOS), which is a residual category, had the lowest rate of utilization. Most treatment was carried out in outpatient settings (88.3%), with almost half of the adolescents seeking help from school psychologists. Treatment received at an inpatient setting was rare: Only 5.9% of the adolescents sought treatment in inpatient setting. About 5.9% received help from "other social services," such as telephone counseling (e.g., tele-care) and self-help group.

Logistic regression was performed to examine factors associated with the use of mental health services among adolescents with anxiety and depressive disorders. Among adolescents with anxiety disorders, mental health services utilization was associated with past suicide attempt, parental anxiety, parental depression, older age, and the presence of comorbid disorders, but not with gender and parental alcohol problems (Table 2). The association between the use of mental health services and comorbid disorders was interesting; that is, the frequency of any mental health services increased with the number of comorbid disorders. Ten (10.6%) of the pure anxiety cases reported having sought mental health services, compared to 16 (22.9%) of those with one comorbid disorders, and to nine (32.1%) of those with at least two comorbid disorders. However, when males and females were analyzed separately, the presence of comorbid disorders was significantly associated with the use of mental health services in anxious males ($\chi^2 = 6.60$, $P = .037$), whereas no such association was found among females ($\chi^2 = 3.65$, $P = .16$).

Among adolescents with any depressive disorders ($N = 185$), 23% had received mental health services

^aComorbid disorders include the following: anxiety and depressive disorders, somatoform disorders, and substance use disorders.

TABLE 3. Psychological distress and mental health services use

SCL-90-R subscales	Without mental health services Mean(SD)	With mental health services Mean(SD)
Global severity index		
Anxiety cases	0.67 (0.3)	0.95 (0.4)**
Depressed cases	0.78 (0.5)	1.04 (0.6)**
Somatization		
Anxiety cases	8.18 (6.7)	10.00 (6.1)
Depressed cases	9.36 (6.3)	10.71 (7.6)
Obsessive-compulsive behavior		
Anxiety cases	7.42 (5.7)	10.34 (6.6)*
Depressed cases	8.34 (5.6)	10.36 (6.4)
Interpersonal sensitivity		
Anxiety cases	6.95 (5.5)	10.79 (5.9)**
Depressed cases	7.73 (5.6)	11.69 (7.9)**
Depression		
Anxiety cases	8.65 (7.5)	14.52 (8.6)***
Depressed cases	11.08 (8.1)	16.30 (9.6)**
Anxiety		
Anxiety cases	6.82 (5.9)	7.93 (0.9)
Depressed cases	7.46 (5.4)	10.03 (7.9)*
Hostility		
Anxiety cases	4.96 (4.4)	7.38 (5.5)*
Depressed cases	6.07 (4.5)	7.26 (5.2)
Phobic anxiety		
Anxiety cases	2.54 (3.0)	3.41 (3.2)
Depressed cases	2.08 (2.5)	3.15 (3.9)
Paranoid ideation		
Anxiety cases	4.46 (3.5)	7.45 (4.4)**
Depressed cases	4.96 (4.0)	6.74 (4.0)*
Psychoticism		
Anxiety cases	4.46 (5.1)	7.48 (5.5)*
Depressed cases	5.67 (5.4)	8.79 (6.09)*

Note. SD, standard deviation.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Impact of Mental Health Services on the Course of Anxiety and Depression. Table 4 shows the impact of mental health services utilization on the course of anxiety and depression. Among adolescents with anxiety and depression at both T1 and T2, a large majority did not receive any mental health services; that is, only 15.8% of the chronic anxiety cases (i.e., T1 and T2) received treatment; 84.3% of the chronic anxiety cases had never received mental health services. Among adolescents with depression, 36.4% of those who used mental health services met the diagnosis of depressive disorders at both T1 and T2. There were 36 and 23 new cases of anxiety and depression, respectively. Most of these cases had not received any mental health services.

DISCUSSION

The main aim of this study has been to examine the frequency and patterns of mental health services

utilization among adolescents with anxiety and depressive disorders. Before discussing our findings, some limitations should be discussed: First, our measure of treatment utilization is entirely based on adolescents' self-reports. Reports from other informants, such as parents and teachers, would have been desirable. However, according to some authors [e.g., Verhulst et al., 1989], adolescents' self-reports tend to be valid and reliable. Second, reports of parental psychopathology were obtained from the adolescents themselves, which could be influenced by the quality of the adolescents' relationship with their parents, and/or by the cognitive biases that may be associated with anxiety and depression in adolescents. Because parents were not directly asked about the presence of psychopathology, we have no way of testing the reliability of this information. Third, only about half of the baseline samples could be reinvestigated, which influences the data on the cause of anxiety and depression. Fourth, the number of subjects for the analyses on factors associated with service use is relatively small. Finally, some major barriers (e.g., attitudes, location of institutions offering mental health services) to receiving treatment were not assessed. These limitations should be taken into account when interpreting our findings.

A total of 18.2% of the adolescents who met the lifetime diagnosis of anxiety disorders and 23% of those with depression reported having used any mental health services. This utilization rate is lower than has been reported in some studies [Lewinsohn et al., 1998; Whitaker et al., 1990] but seems comparable to others [Bowen et al., 1990; Keller et al., 1992]. For example, in the Lewinsohn et al. study [1998], 60.7% of the adolescents with major depression had received treatment. This difference may reflect not only methodological differences but also real cultural differences among the samples, and differences in the health care systems for these various countries. The low rate of mental health utilization found in our study was surprising because of the comprehensive coverage and the non-gatekeeper system in the German health system. Unfortunately, no questions were asked about the reasons related to low rate of mental health services utilization in this study. However, it could be that stigmatization may have accounted for the low use of mental health services.

In our study, most treatment was carried out in outpatient settings, with almost half of the adolescents seeking help from school psychologists. Similar to the findings reported by Lewinsohn et al. [1998], inpatient treatment was relatively rare in our study. The Methods of the Epidemiology of Child and Adolescent Mental Disorders [MECA study; Leaf et al., 1996] has similarly reported a high number of youth with serious emotional and behavioral problems in schools. This finding has two important implications: First, there is a need to have a close collaboration with school-based professionals such as teachers and school psychologists. Second, since only a small proportion of adolescents with any anxiety and depressive disorders received

TABLE 4. Impact of mental health services utilization and the course of anxiety and depression

	No anxiety disorders N (%)	Anxiety at T1 N (%)	Anxiety at T2 (new cases) N (%)	Anxiety at T1 and T2 N (%)		No depressive disorders N (%)	Depression at T1 N (%)	Depression at T2 (new cases) N (%)	Depression at T1 and T2 N (%)
Anxiety					Depression				
Without mental health services	346 (90.6)	71 (83.5)	28 (77.8)	16 (84.2)	Without mental health services	379 (92.4)	51 (76.1)	17 (73.9)	14 (63.6)
With mental health services	36 (9.4)	14 (16.5)	8 (22.2)	3 (15.8)	With mental health services	31 (7.6)	16 (23.9)	6 (26.1)	8 (36.4)

professional help for their disorders, it is important to provide a prevention program that could reach the largest number of children before they reach the age at which the peak risk occurs for developing these disorders. It is through a well-developed preventive strategy that the stress experienced by children and their families, as well as the negative long-term consequences of anxiety and depressive disorders, can be prevented. As shown in recent studies by Barrett and her colleagues [Barrett and Turner, 2001; Barrett et al., 2003; Lowry-Webster et al., 2001], the use of a preventive program based on cognitive-behavioral principles can successfully prevent the development of anxiety and depression in children.

The only factor significantly associated with treatment among adolescents with depressive disorder was a history of suicide attempt. Unlike the Lewinsohn et al. [1998] study, gender and the presence of comorbid disorders failed to correlate significantly with the use of mental health services in our study. The reason for this was unclear, perhaps due to methodological differences; that is, our samples were much younger than those in their study; the subjects in our study were ages 12–17 years, and in their study, subjects were ages 19 to 24. As for the comorbid disorders, it is not clear which disorders were included under “nonaffective disorders” in the Lewinsohn et al. study. In our study, comorbid disorders included somatoform, substance use, and anxiety disorders.

Treatment seemed to influence the stability of anxiety and depression. Among adolescents with anxiety and depression at both T1 and T2, a high majority did not receive any mental health services. In the Lewinsohn et al. study [1998], adolescents who received treatment were not less likely to experience a new depressive episode at young adulthood. Their findings showed that among formerly depressed males (but not among females) previous treatment was associated with greater relapse.

Among adolescents with anxiety disorders, mental health services utilization was associated with past suicide attempt, parental anxiety, parental depression, and the presence of comorbid disorders. The finding that parental anxiety and depression significantly predicted the use of services suggested that in addition

to their own problems (e.g., having had suicide attempt, high level of distress, and comorbid disorders), referred adolescents lived in families with stress as a result of their parents' psychopathology. It also suggested that parents' psychopathology may have lowered the threshold for reporting the child's problem behavior [Verhulst and van der Ende, 1997]. Our finding may also suggest that these parents are not equipped to manage problems in their children. Thus, in working with children and adolescents with anxiety and depressive disorders, it is important to tailor services provision by taking family characteristics (e.g., parental psychopathology) into account.

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