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LIFETIME PREVALENCE OF PSYCHIATRIC DISORDERS IN SOUTH AFRICA

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Abstract

BACKGROUND—Data on the lifetime prevalence of psychiatric disorders in South Africa are of interest, not only for the purposes of developing evidence-based mental health policy, but also in view of South Africa's particular historical and demographic circumstances.

METHODS—A nationally representative household survey was conducted between 2002 and 2004 using the World Health Organization Composite International Diagnostic Interview (CIDI) to generate diagnoses. The dataset analysed included 4351 adult South Africans of all racial groups.

RESULTS—Lifetime prevalence of DSM-IV/CIDI disorders was determined for anxiety disorders (15.8%), mood disorders (9.8%), substance use disorders (13.4%), and any disorder (30.3%). Lifetime prevalence of substance abuse, but not other disorders, differed significantly across racial groups. Median age of onset was earlier for substance use disorders (21) than for anxiety disorders (32) or mood disorders (37).

CONCLUSION—In comparison to data from other countries, South Africa has a particularly high lifetime prevalence of substance use disorders. These disorders have an early age of onset, providing an important target for the planning of local mental health services.

To date, no nationally representative data have been available on the prevalence of psychiatric disorders in South Africa. Such data are clearly important for rigorous local mental health service planning. Furthermore, given the particular circumstances of South Africa's colonial and apartheid past, and its recent emergence as a democracy, such data are also relevant to understanding more global issues and processes including social disparities in health and mechanisms of vulnerability and resilience to psychopathology.

The lack of epidemiological data on psychiatric disorders in South Africa is consistent with a relative lack of data from elsewhere in the continent. 12-month prevalence of any psychiatric disorder in the Yoruba-speaking part of Nigeria was recently reported as 4.7%, one of the lowest in 14 countries participating in the World Mental Health Surveys (Demyttenaere, Bruffaerts, Posada-Villa, *et al*, 2004). The precise reasons underlying the low estimated prevalence are unclear, but underreporting to lay interviewers, or the social capital held by African societies, may be relevant factors.

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There are several reasons to believe that the prevalence of psychiatric disorder in South Africa would be relatively high. Stressors such as racial discrimination and political violence have been perennial in the past, and high rates of gender inequality and criminal violence are reportedly a feature in the present (Dunkle, Jewkes, Brown, *et al*, 2004; Hirschowitz and Orkin, 1997). Poverty remains a significant problem, and is likely to contribute to vulnerability to common psychiatric disorders in developing countries (Patel and Kleinman, 2003).

On the other hand, features of South African society may predict a more complex picture. The country's socioeconomic history has resulted in different racial populations having distinct socioeconomic profiles, with whites advantaged, and blacks disadvantaged. Socioeconomic privilege might protect against stressors and reduce prevalence of psychiatric disorder. Alternatively, factors reducing prevalence of psychiatric disorder in Nigeria might also operate in some sectors of society. As a result, prevalence of psychiatric disorders in South Africa might be posited to lie between that reported in the developed world (Kessler, Berglund, Demler, *et al*, 2005; Wittchen and Jacobi, 2005) and in Nigeria.

METHODS

Subject Sample

The SASH was a national probability sample of adult South Africans living in both households and hostel quarters, with data obtained between January 2002 and June 2004. (Williams, Herman, Kessler, *et al*, 2004). Hostel quarters were included to maximize coverage of young working age males. The sample did not include individuals in institutions or in the military. Individuals of all race and ethnic backgrounds were included in the study. The sample was selected using a three-stage probability sample design. The first stage involved selecting a stratified probability sample of primary sampling areas equivalent to counties in the US or the UK based on the 2001 South African Census of Enumeration Areas (EAs). The EAs were sampled with probabilities proportionate to population size. The second stage involved selecting an equal-probability sample of housing units within each EA. The third stage involved selecting one random adult respondent from each sample housing unit. Interviewers selected a single adult respondent at random using the Kish procedure for objective respondent selection (Kish, 1949). If the household or the selected respondent refused to be interviewed for SASH, a random replacement was drawn form the enumerative listing for the EA. A total sample of 5089 households was selected for SASH. Field interviews were obtained with 4433 (87.1%) of the designated respondents. Based on quality control criteria, 4351 of the field interviews were retained for use in the analysis. There were no differences in response rates across racial groups.

Diagnostic Interview

The diagnostic interview used in the SASH was the World Health Organization (WHO) Composite International Diagnostic Interview Version 3.0 (CIDI 3.0; (Kessler and Ustun, 2004), a fully-structured lay-administered interview that generates diagnoses according to the criteria of both the ICD-10 and DSM-IV diagnostic systems. In view of time constraints, however, the interview excluded a number of disorders (eg specific phobia, impulse control disorders other than intermittent explosive disorder). DSM-IV criteria are used in the current report. Interviewers were trained in the administration of the CIDI in centralized group sessions lasting one week. The interviews were conducted face-to-face in six different languages: English, Afrikaans, Zulu, Xhosa, Northern Sotho, and Tswana. The protocol was reviewed by the ethics committee of the Medical University of South Africa, and all subjects gave informed consent. Interviews lasted an average of three and a half hours, with some requiring more than one visit to complete.

Statistical Analysis

The person-level SASH data were weighted to adjust for differential probabilities of selection within households, differential non-response, and for residual discrepancies between the sample and the population on a profile of Census demographic and geographic variables. These weights are used in all data analyses. Data analysis was carried out using SAS and SAS-callable SUDAAN software to adjust estimates of statistical significance for the weighting and clustering of the data. Statistical methods include standard estimates of prevalence, multivariate analyses of socio-demographic predictors of lifetime risk, and the actuarial method to generate survival distributions from retrospective disorder age-of-onset (AOO) reports. Discrete-time hazard models (Allison, 1982) were used to examine the joint effects of person-year (each year in the life of each respondent up to their age at interview), gender, race, and age at interview (18–34, 35–49,50–64 and 65+) in predicting first onset of each disorder. Non-proportionalities in hazards were evaluated by considering the possibility that the predictive effects of sex and age at interview differ across life course stages defined by person-year. Statistical significance was evaluated using .05-level two-sided tests that adjusted for the weighting and clustering of the data.

RESULTS

Lifetime Prevalence

The most prevalent lifetime DSM-IV/CIDI disorders (Table 1) were alcohol abuse (11.4%), major depression (9.8%), and agoraphobia (9.8%). The most prevalent class of disorders was estimated to be anxiety disorders (15.8%), followed by substance use disorders (13.3%) and mood disorders (9.8%). The lifetime prevalence estimate of any disorder was 30.3%, with 11.2% of respondents having two and 3.5% having three or more disorders. Disorders with very low prevalence (eg dysthymia, intermittent explosive disorder) are not tabulated.

Lifetime prevalence estimates vary significantly with age at interview for several disorders, including panic disorder (highest in the cohorts of respondents who were in midlife at the time of interview), generalized anxiety disorder (increasing prevalence in successively earlier cohorts), and drug dependence (decreasing prevalence in successively earlier cohorts) (Table 1). However, the prevalence of any anxiety disorder and of alcohol abuse are remarkably consistent across cohorts.

Mood and anxiety disorders were significantly associated with female gender, while substance use disorders were significantly associated with male gender (Table 2). There was a significant positive association between age range 35–49 and mood disorders, and significant negative associations between being Black and having intermittent explosive disorder, and between Indian ethnicity and substance use disorder (Table 2). Only a few other socio-demographic associations were significantly associated with mental disorders, including an association between being divorced/separated/widowed, and having any disorder or mood disorder (Table 2).

Age of Onset (AOO) Distributions

The AOO distributions were standardized to facilitate ease of interpretation (Table 3). Median AOO (ie, 50^{th} percentile on the AOO distribution) was earlier for substance use disorders (24) than for anxiety (32) or mood (37) disorders. AOO varied widely within particular disorders, with the inter-quartile ranges (IQR; the number of years between the 25^{th} and 75^{th} percentiles of the AOO distributions) ranging from 11 years (20–31) for substance use disorders to 30 years for depression (23–53) and 41 years (26–57) for anxiety disorders.

In the case of substance use disorders, both alcohol and drug abuse had early ages of onset and narrow IQRs. There was considerably more variation, in comparison, in the case of anxiety disorders, where social phobia and agoraphobia had an early median AOO and comparatively narrow IQR, panic and PTSD fell in the middle in terms of AOO and width of IQR, and GAD had a comparatively late AOO and the widest IQR.

Cohort Effects

Dummy variables defining cohorts with ages at interview in the range 18–29 (born 1973–86), 30–44 (born 1961–1972), 45–59 (born 1949–60), and 60+ (born before 1948) were used to predict lifetime disorders using discrete-time survival analysis. The odds-ratios (ORs) were statistically significant in several comparisons, with a positive association between recency of cohort and magnitude of OR (Table 4). This was particularly the case for major depression, where the largest cohort effects were obtained. However, non-significant ORs and small cohort effects were apparent in the case of GAD and PTSD, as well as in substance abuse cohorts other than the most recent one.

These models were then refined to determine whether cohort effects differ by life course stage. Little evidence of such variation was found for substance use disorders (data not shown). In contrast, more inter-cohort variation in risk of first onset was found in the middle years of life for anxiety disorders and in later age for mood disorders.

Socio-demographic variables significantly related to onset of psychiatric disorders were consistent with those noted above (data not shown). Thus, women had a significantly higher risk than men of anxiety and mood disorders onset while men had a significantly higher risk of substance use disorders onset, and there were no significant associations with race. Furthermore, in an analysis that examined inter-cohort differences in demographic effects, no interactions with cohort were found for gender, race, and education (data not shown), indicating that these effects have been stable over the generations included in the SASH survey.

DISCUSSION

The data reported here document a high lifetime prevalence of psychiatric disorders in South Africa, with 30% of respondents reporting a lifetime history of at least one of the DSM-IV/CIDI disorders considered in the survey. This is not as high an estimate as in the USA, where approximately half the population meets lifetime criteria for one or more DSM-IV/CIDI disorders (Demyttenaere, Bruffaerts, Posada-Villa, *et al*, 2004). However, it is considerably higher than the estimate found in a recent survey of Yoruba-speaking Nigeria (Gureje, Lasebikan, Kola, *et al*, 2006) and higher than in the majority of other countries that have participated in the first wave of the WHO World Mental Health Survey Initiative (Demyttenaere, Bruffaerts, Posada-Villa, *et al*, 2004).

Examining the association of socio-demographic variables with psychiatric disorders provides an initial approach to understanding contributors to these prevalence rates. The associations of psychiatric disorder with gender (female gender associated with mood and anxiety disorders, male gender associated with substance use disorders) are consistent with those found in many other countries, whether industrialized or developing. Other findings may, however, point to the importance of local factors; the lack of an association between very low income and substance use disorders suggests the possibility that at least some disposable income is required for the purchase of alcohol (the most commonly abused substance in South Africa) and other substances.

It is notable, however, that there were few differences in lifetime prevalence, or age of onset of psychiatric disorders, by race. There was a lower lifetime prevalence of substance use

disorders in Indians; this community includes a large proportion of Muslims, and proscription of alcohol use may play a role in explaining these data. Although there are clear links between race and access to health care in South Africa (Lalloo, Myburgh, Smith, *et al*, 2004), other aspects of the relationship between race and psychiatric disorder may be more complex. Not the least important phenomenon to take into account may be the heterogeneity of the construct of race; although apartheid clearly disadvantaged blacks and advantaged whites, many local factors contributed to variance between individuals within these groups.

Examining prevalence estimates across cohorts and age of onset provides another approach to exploring the meaning of the prevalence rates found here. Prevalence estimates varied across cohorts for major depression, as in other surveys (WHO International Consortium in Psychiatric Epidemiology, 2000; Kessler, Berglund, Demler, *et al*, 2005). However, this phenomenon was not seen in GAD and PTSD, perhaps suggesting the importance of exposure to stress and trauma as risk factors for psychiatric disorders over many years in the local context. Particularly striking was the high prevalence (13.3%) and early age of onset (21 years) of substance use disorders. This pattern is much more pronounced in recent than earlier cohorts, suggesting that it is a relatively new problem in South Africa. The increasing prevalence of substance use disorders in successive cohorts has been found in many other countries (WHO International Consortium in Psychiatric Epidemiology, 2000), but the increase generally was found to begin in earlier cohorts than seen here. South Africa was to some extent cut off from worldwide trends of many sorts during the apartheid years, and a rise in substance use disorders may have occurred later on, during democratization.

There are important limitations that should be noted, all of which are likely to make the lifetime prevalence estimates here conservative (Kessler, Berglund, Demler, *et al*, 2005). People with psychiatric disorders have been shown in other countries to be less likely than others to participate in mental health surveys (Kessler, Wittchen, Abelson, *et al*, 1998). There is a bias against reporting embarrassing behaviors and there are age-related underestimations of illness duration and failures to report past disorders. In addition, in view of time constraints, the interview did not inquire about several prevalent conditions.

Another important limitation of the survey is the lack of clinical validation of the CIDI in the South African study. While results were reassuring in CIDI clinical validation studies carried out in conjunction with the WMH surveys in the USA (Kessler, Berglund, Demler, 2005) and Europe (Haro, Arbabzadeh-Bouchez, Brugha, *et al*, 2006), the cultural heterogeneity of the South African subjects might have impacted adversely on the diagnostic accuracy of the instrument. The high lifetime prevalence of agoraphobia without panic here, and the variability in age of onset of major depression and GAD, for example, may warrant caution. Perhaps some of those captured within the category of agoraphobia suffer from the avoidant symptoms of PTSD, from specific phobia (which was not included in the South African study, and which is usually the most prevalent anxiety disorder, and the one with earliest onset), or from realistic fears of going outside. Overestimates of agoraphobia have similarly occurred in previous epidemiological work (Horwath, Lish, Johnson, *et al*, 1993; Wittchen, Zhao, Abelson, *et al*, 1996).

Nevertheless, the high lifetime prevalence estimates for psychiatric disorders found here are broadly consistent with previous work in South Africa. A community prevalence study of psychiatric morbidity in a rural coloured village found a prevalence of psychiatric morbidity of 27.1%, with the majority of cases diagnosed with depressive or anxiety disorder (Rumble, Swartz, Parry, *et al*, 1996). A prevalence study in a township primary health care clinic found that depression (37%), PTSD (20%), and somatization disorder (18%) were the most common diagnoses (Carey, Stein, and Zungu-Dirwayi, 2003).

Such data have been criticized by those who argue that distress in the developing world should not be conflated with the presence of psychiatric disorders, and who question the applicability of the DSM classification system to non-Western countries (Kirmayer, 1991). There is growing acceptance, however, that psychiatric disorders, as classified by DSM-IV and diagnosed by instruments such as the CIDI, are accompanied by significant social and occupational impairment. Furthermore, research on pathogenesis and intervention has demonstrated that such disorders are associated with psychobiological dysfunction and that efficacious and cost-effective treatments are available, even in a developing world context (Stein and Gureje, 2004; Chisholm, Sanderson, Ayuso-Mateos, *et al*, 2004). This is not to minimize the potentially important effects of cultural context on the experience and expression of psychiatric disorders.

The high estimated lifetime prevalence and relatively early onset of psychiatric disorders noted here, taken together with data in the literature on associated impairment and cost-efficacy of treatment, and with the growing acceptance that those with mental illness have a right to treatment, has important policy implications. Rigorous data on the proportion of the health budget spent on mental health services in the South African setting are not readily available, but there is consensus that a gross lack of parity exists, with significant under-funding of mental health services and research (Seedat, Emsley, and Stein, 2004). We hope that the data reported here take a first step in documenting a level of need for care that is sufficiently compelling to provide impetus for changes in mental health policy in South Africa, with an appropriate increase in funding for mental health services.

CLINICAL IMPLICATIONS AND LIMITATIONS

CLINICAL IMPLICATIONS

The first life prevalence estimates of psychiatric disorders in a nationally representative survey of an African country indicate that these are highly prevalent, and underline the need for better services.

Given the particularly high prevalence of substance use disorders, with early age of onset and increase prevalence in more recent cohorts, targeted interventions aimed at prevention and treating these disorders in youth are needed.

LIMITATIONS

People with psychiatric disorders have been shown in other countries to be less likely than others to participate in mental health surveys, and the interview did not inquire about several prevalent psychiatric conditions.

Although the survey instrument has been clinically validated in other countries, and although it was carefully translated for use in South Africa, its validity has not yet been determined in this context.

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Table 1

Lifetime Prevalence of DSM-IV/WMH-CIDI Disorders

			AGE GROUP						
		Total	18–34	35–39	50–64	65+			
Disorder	**N**	**% (s.e)**	**% (s.e)**	**% (s.e.)**	**% (s.e.)**	**% (s.e.)**	**ChiSq**	**df**	**p Value**
A. Anxiety Disorders									
1. Panic Disorder	57	1.2 (0.2)	0.6 (0.2)	1.9 (0.4)	1.9 (0.7)	1.3 (0.9)	10.3	3	0.022
2. Generalized Anxiety Disorder	124	2.7 (0.3)	1.2 (0.2)	3.7 (0.4)	4.1 (1.0)	7.2 (2.5)	40.5	3	0.000
3. Social Phobia	116	2.8 (0.4)	2.7 (0.5)	3.5 (0.7)	2.5 (0.9)	1.3 (0.8)	3.7	3	0.305
4. Agoraphobia w/o Panic	435	9.8 (0.6)	10.5 (1.0)	10.0 (1.0)	8.1 (1.4)	7.2 (1.7)	4.7	3	0.204
5. PTSD	91	2.3 (0.3)	1.8 (0.3)	2.4 (0.6)	2.7 (0.7)	4.4 (2.9)	1.5	3	0.689
6. Any Anxiety Disorder	695	15.8 (0.8)	14.7 (1.1)	17.6 (1.1)	15.9 (2.0)	17.0 (3.3)	3.6	3	0.320
B. Mood Disorders									
1. MDD w/Hierarchy	439	9.8 (0.7)	8.9 (0.8)	11.9 (1.3)	10.0 (1.3)	6.5 (1.6)	8.2	3	0.052
C. Substance Disorders									
1. Alcohol Abuse	435	11.4 (0.8)	11.1 (1.1)	12.8 (1.5)	10.0 (1.8)	10.3 (3.3)	2.2	3	0.543
2. Alcohol Dependence	95	2.6 (0.4)	2.3 (0.5)	3.5 (0.8)	1.9 (0.9)	2.5 (1.4)	2.3	3	0.513
3. Drug Abuse w/o Dependence	139	3.9 (0.4)	4.6 (0.6)	4.2 (0.8)	2.0 (0.7)	1.6 (0.9)	12.2	3	0.011
4. Drug Dep. w/Abuse	19	0.6 (0.2)	0.8 (0.3)	0.5 (0.3)	0.2 (0.2)	0.0 (0.0)	11.9	3.	0.012
5. Any Substance Use	505	13.3 (0.9)	13.5 (1.2)	14.7 (1.6)	11.0 (1.9)	11.0 (3.3)	3.5	3	0.334
D. All Disorders									
1. Any Disorder	1290	30.3 (1.1)	29.4 (1.4)	33.6 (2.0)	28.3 (2.6)	27.9 (3.4)	6.1	3	0.119
2. 2+ Disorders	456	11.2 (0.8)	10.4 (1.0)	12.8 (1.2)	11.2 (1.7)	9.6 (3.0)	3.1	3	0.384
3. 3+ Disorders	139	3.5 (0.5)	3.2 (0.6)	4.8 (0.8)	2.5 (0.9)	2.8 (2.1)	5.1	3	0.176

Table 2

Socio-demographic Correlates of Lifetime DSM-IV Psychiatric Disorders

Risk Factor	Any OR(95% CI)	Mood OR(95% CI)	Anxiety OR(95% CI)	IED OR(95% CI)	Substance OR(95% CI)
Sex					
Male	1.00	1.00	1.00	1.00	1.00
Female	0.92(0.8–1.1)	1.78(1.3–2.4)*	1.79(1.5–2.2)*	0.70(0.5–1.0)	0.27(0.2–0.3)*
ChiSq/(Prob)	0.74/(.39)	15.3/(.00)	30.4/(.00)	4.18/(.04)	98.2/(.00)
Age					
18–34	1.09(0.7–1.6)	1.40(0.8–2.5)	0.83(0.5–1.4)	2.75(0.9–8.9)	1.26(0.6–2.7)
35–49	1.34(1.0–1.9)	1.95(1.1–3.6)*	1.04(0.6–1.7)	3.61(1.0– 13)	1.40(0.7–2.7)
50–64	1.02(0.7–1.5)	1.59(0.9–2.9)	0.91(0.6–1.5)	2.23(0.5–9.1)	0.99(0.5–1.9)
65+	1.00	1.00	1.00	1.00	1.00
ChiSq/(Prob)	8.02/(.05)	8.93/(.03)	4.01/(.26)	5.51/(.14)	3.22/(.36)
Race					
Black	1.09(0.6–2.0)	1.12(0.4–2.8)	1.48(0.7–3.0)	0.33(0.1–0.8)*	0.83(0.5–1.4)
Coloured	1.38(0.8–2.5)	1.21(0.5–3.0)	1.39(0.6–3.0)	0.51(0.2–1.4)	1.33(0.8–2.2)
Indian	0.91(0.5–1.8)	1.61(0.5–5.2)	0.96(0.4–2.4)	0.49(0.2–1.4)	0.33(0.1–0.9)*
White	1.00	1.00	1.00	1.00	1.00
ChiSq/(Prob)	5.76/(.12)	0.96/(.81)	2.93/(.40)	7.49/(.06)	12.9/(.00)
Income					
Low	0.80(0.6–1.0)	0.94(0.7–1.4)	0.91(0.7–1.2)	0.45(0.3–0.8)*	0.73(0.5–1.0)
Low Avg.	0.69(0.6–0.9)*	0.92(0.6–1.3)	0.78(0.6–1.1)	0.43(0.2–1.0)	0.63(0.5–0.9)*
High Avg.	0.90(0.7–1.2)	0.60(0.3–1.1)	1.17(0.8–1.8)	0.49(0.1–1.9)	0.92(0.6–1.4)
High	1.00	1.00	1.00	1.00	1.00
ChiSq/(Prob)	11.0/(.01)	4.00/(.26)	3.95/(.27)	8.97/(.03)	9.49/(.02)
Marital Status					
Married	1.00	1.00	1.00	1.00	1.00
Sep/Div/Wid	1.49(1.1–2.0)*	2.20(1.6–3.1)*	1.41(1.0–2.1)	0.85(0.4–1.9)	1.20(0.8–1.8)
Never Married	1.02(0.8–1.2)	0.94(0.7–1.2)	0.99(0.8–1.2)	1.06(0.6–1.8)	1.16(0.9–1.5)
ChiSq/(Prob)	7.05/(.03)	23.2/(.00)	3.58/(.17)	0.45/(.80)	1.92/(.38)
Education					
None	0.88(0.6–1.3)	0.93(0.5–1.8)	1.18(0.7–2.0)	0.94(0.3–3.1)	0.64(0.4–1.0)

Risk Factor	Any OR(95% CI)	Mood OR(95% CI)	Anxiety OR(95% CI)	IED OR(95% CI)	Substance OR(95% CI)
Primary	1.07(0.8–1.5)	2.01(1.2–3.3)*	1.08(0.7–1.6)	0.49(0.2–1.2)	0.70(0.5–0.9)*
Secondary	0.97(0.8–1.2)	1.25(0.8–1.9)	1.11(0.8–1.6)	0.97(0.4–2.6)	0.83(0.6–1.1)
University	1.00	1.00	1.00	1.00	1.00
ChiSq/(Prob)	1.79/(.62)	14.6/(.00)	0.45/(.93)	5.30/(.15)	6.69/(.08)

*p=.05

Table 3

Age at Selected Percentiles on the Standardized Age of Onset Distributions of WMH-CIDI Disorders with Projected Lifetime Risk at Age 75

	AGE OF ONSET PERCENTILE					PROJECTED RISK AGE 75	
Disorder	**10**	**25**	**50**	**75**	**90**		**SE**
A. Anxiety							
1. Panic Disorder	14	26	46	57	57	2.6	0.8
2. GAD with Hierarchy	22	37	72	72	73	13.0	4.5
3. Social Phobia	13	14	19	31	41	3.4	0.5
4. Agoraphobia w/o Panic	11	13	18	35	51	12.7	0.8
5. PTSD	20	27	36	50	54	4.6	0.8
6. Any Anxiety	13	16	32	57	72	30.1	4.4
B. Mood							
1. MDD w/Hierarchy	16	23	37	53	67	20.0	2.4
C. Substance							
1. Alcohol Abuse with/without Dep.	19	21	26	31	41	15.3	1.1
2. Alcohol Abuse w/Dep.	19	23	31	46	51	4.4	0.7
3. Drug Abuse with/without Dep.	16	19	21	30	41	4.9	0.5
4. Drug Dep. w/Abuse	+	+	+	+	+	+	+
5. Any Substance	18	20	24	31	41	17.5	1.2
D. All Disorders	13	18	26	44	69	47.5	3.7

+ ≤30 cases; too small to estimate

Table 4

Cohort as a Predictor of Lifetime Risk of DSM-IV Disorders

	Birth Cohort						
	18–34	35–49	50–64	65+			
Disorder	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	ChiSq	df	p Value
Panic Disorder	3.0 (0.4–20.2)	5.0 (0.8–30.2)	2.2 (0.4–13.5)	1.0 (1.0–1.0)	7.6	3	0.054
Gad w/Hierarchy	0.8 (0.2–3.1)	1.2 (0.4–4.0)	1.0 (0.3–3.1)	1.0 (1.0–1.0)	2.8	3	0.420
Social Phobia	3.2 (0.7–14.8)	3.1 (0.6–15.2)	2.0 (0.6–7.3)	1.0 (1.0–1.0)	2.4	3	0.487
Agoraphobia w/o Panic	2.5* (1.4–4.5)	1.9* (1.1–3.4)	1.3 (0.6–2.5)	1.0 (1.0–1.0)	19.1	3	0.000
PTSD	2.2 (0.4–11.0)	1.0 (0.3–3.4)	0.7 (0.2–2.6)	1.0 (1.0–1.0)	12.4	3	0.006
Any Anxiety	2.3* (1.3–4.0)	1.8* (1.1–3.1)	1.3 (0.8–2.1)	1.0 (1.0–1.0)	16.5	3	0.001
MDD w/Hierarchy	9.6* (5.5–16.7)	5.5* (3.1–9.9)	2.5* (1.4–4.4)	1.0 (1.0–1.0)	95.6	3	0.000
Any Mood	9.6* (5.5–16.7)	5.5* (3.1–9.9)	2.5* (1.4–4.4)	1.0 (1.0–1.0)	95.6	3	0.000
Alcohol Abuse with/without Dep.	2.4* (1.1–5.1)	1.4 (0.7–2.7)	1.0 (0.5–1.9)	1.0 (1.0–1.0)	21.6	3	0.000
Alcohol Dep. w/Abuse	3.7* (1.2–11.9)	2.3 (0.7–7.1)	0.9 (0.2–3.7)	1.0 (1.0–1.0)	13.1	3	0.004
Drug Abuse with/without Dep.	5.4* (1.5–19.0)	3.1 (0.9–10.2)	1.3 (0.3–5.3)	1.0 (1.0–1.0)	18.4	3	0.000
Drug Dep. w/Abuse	+	+	+	+.	+	+	+
Any Substance	2.6* (1.3–5.4)	1.5 (0.8–2.9)	1.0 (0.6–1.9)	1.0 (1.0–1.0)	29.1	3	0.000
Any Disorder	3.0* (2.1–4.2)	2.0* (1.5–2.7)	1.3 (0.9–1.8)	1.0 (1.0–1.0)	76.4	3	0.000

+ ≤30 cases, too small to estimate;

* p=.05; Based on discrete-time survival models with person-year as the unit of analysis; controls are time intervals