

# Age and Remission of Psychiatric Disorders

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**Objective:** To examine the relationship between remission of psychiatric disorders and age.

**Methods:** We interviewed 3258 randomly selected adult residents of Edmonton using the Diagnostic Interview Schedule (DIS), which yielded DIS/DSM-III diagnoses. Remission was defined as being free of symptoms of the index lifetime disorder in the year preceding the interview, this being the difference between the lifetime and one-year prevalence. For each age group, the proportion of cases with and without symptoms in the preceding year was calculated. Numbers and proportions of cases were estimated after adjusting to the census population and weighting for household size. Only the more common disorders were examined; any comorbidities were ignored.

**Results:** Drug abuse or dependence, antisocial personality disorder (in both sexes), and alcohol abuse or dependence (in men) all showed remission rates that increased with age. Panic disorder and obsessive-compulsive disorder (OCD) showed a decreased likelihood of remission with increasing age. Major depression and phobias showed little tendency to remission with age. Considering all disorders together, the one-year remission rate for all ages combined was only 33.2%, with a tendency for lower remission rates to be found in those aged 55 to 64.

**Conclusions:** As may be expected, antisocial personality, drug abuse or dependence, and alcohol abuse or dependence tend to show increased remission rates with increasing age. In OCD and panic disorder, the low rates of remission found in all age groups indicate that these disorders produce significant long-term morbidity. For depression, which had an overall remission rate of less than 50%, the stable low rate of remission probably indicates not only the difficulties of treatment but also the low rates at which cases get treated.

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**Key Words:** remission, age, psychiatric disorder

The concepts associated with the outcome of psychiatric disorders are complex. Frank and others (1) listed definitions for the following terms (in reference to depression): episode, response and partial remission, full remission, recovery, relapse, and recurrence. Full remission is said to have occurred when the person no longer meets the criteria for the disorder; recovery is an extended period of time in full remission. Partial remission is when the individual no longer meets criteria for the disorder but has more than minimal symptoms.

A review of articles in 9 journals over a 2-year period showed that these terms are used quite inconsistently (2). Chronicity is somewhat different. Angst, Kupfer, and Rosenbaum (3), in the Zurich study, used the following criteria to define chronicity in depression: minimum duration of depressive episode of 2 years, no recovery over at least 5 years, and Global Assessment Scale (GAS) score less than 61. Recovery was defined by a GAS score of 61 or greater and an absence of recurrences over a minimum of 5 years.

In the Zurich study, more than 70% of both unipolar and bipolar cases failed to meet the criteria for recovery, and 12% to 14% met the criteria for chronicity. Late onset more than doubled the risk of chronicity, but it had no effect on the risk for suicide. Angst and others (3) consider their results to be somewhat similar to those of 2 other long-term follow-up investigations (4,5), with 70% to 85% of cases of depression having an unfavourable outcome and only about 20% to 25% having a very good outcome.

In a review of the studies of outcome of depression in psychiatric settings, 12% to 15% of cases followed over the long term had persistent depression, and 20% to 40% had a

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“sustained recovery,” with recurrence rates varying from 26% at one year to 76% by 10 or more years (6). Keller, Shapiro, and Lavori (7), using life-table methods, found the cumulative probability of recurrence by 40 weeks for those recovering from an index episode of depression to be 38%.

This finding contrasts somewhat with the 10-year follow-up in the WHO multicentre collaborative study of depression (8), where “best clinical course” (defined as one or 2 short episodes of depression with complete remission between episodes) was found in 5% of “endogenous” but in only 29% of “psychogenic” cases. Nevertheless, 18% had a poor clinical outcome, 24% suffered severe social impairment for over half the follow-up period, and 21% showed no full remission in 10 years. Wesner and Winokur (9), examining remission in older versus younger unipolar patients, found remission in the patients over 55 years old to be 51% to 57%, a significantly lower rate than in the younger cases. In the Otago Women’s Health Survey 30-month follow-up of cases of nonpsychotic psychiatric disorder, 44% of those found to have a psychiatric disorder on the initial survey were still cases at follow-up. Women in midlife were less likely to experience remission (10).

Panic disorder may fare less well than depression. Wittchen and Essau note that “panic disorder has been found to have a chronic course with rare complete remission” (11, p 47).

A recent long-term follow-up (2 to 7 years) of 54 children and adolescents treated for OCD with clomipramine found that 23 (43%) still met diagnostic criteria for OCD and that only 3 (6%) were in true remission (12).

The Epidemiologic Catchment Area (ECA) study provides a considerable amount of data on remission. In that study, people were defined as being in remission if they met the lifetime criteria for a disorder but did not have the disorder in the preceding year. Thus remission is defined in entirely symptomatic terms, with no reference to social or other functioning. The one-year remission rates (for all ages and both sexes) are 30.3% for phobias and 41.7% for panic (13), 31% for OCD (14), 52.6% for affective disorders (15), 54% for antisocial personality (16), and 51% for alcohol abuse or dependence (17). The “cases” in the ECA study were found on interviews of large random samples of adults in 5 centres in the United States and may or may not have been treated.

From these data, it is quite obvious that the outcome for major psychiatric disorders, whether based on treated case follow-up or on community survey data and whether outcome or remission is considered on a multidimensional basis or on purely symptomatic measures, is less than desirable and may well be much less satisfactory than most treating psychiatrists and their patients have been led to expect.

Particularly with reference to major depression, both early reports of a high proportion of patients being restored to normal between episodes and the optimistic results of a

short-term trial of antidepressants are not matched in the studies just cited. “Clinical trials overestimate the likelihood of full recovery on a single antidepressant. The usual endpoint is response to treatment, as defined by a reduction of 50% or more in a depression rating scale. Using this measure, response rates of 60–70% are typically reported” (3, p 11). The same authors report that when the endpoint is a Hamilton Depression Rating Scale score of 7 or less, sustained for more than 3 weeks, then the remission rate drops to 45%. They also note that for over half of the patients, the time to remission exceeded 6 weeks.

The purpose of this paper is to examine the symptom remission rates by age in those with lifetime psychiatric disorders, based on a community sample. Our methods for calculating these rates are the same as those used in the ECA study.

## Methods

The results presented below are based on 3258 interviews conducted in the city of Edmonton by trained lay interviewers between 1983 and 1986. The eligible population (household residents aged 18 and over) was 398 000.

Subjects were selected using a 2-stage sampling method. In the first stage, households were systematically sampled from a computerized list of residential addresses supplied by the city. At the second stage, one household member was chosen for interview using successively 6 versions of a respondent selection grid (18). There was no substitution used if the respondent refused or a household address was inaccessible (vacant, secure, demolished). To be eligible, a respondent had to be a usual resident at the address and 18 years or older. The overall response rate was 71.6%.

The interview instrument was the DIS, version III (19), a completely structured interview that records onset of symptoms and contains probes designed to assess whether symptoms were due to psychiatric disorder or a physical illness. The diagnoses are computer-generated using the Washington University Program, and no clinical judgement is applied. Diagnoses are made according to DSM-III inclusion criteria and may be used with or without the exclusion criteria. For the purpose of this report, exclusion criteria are not used. Since times are recorded for onset of symptoms, diagnoses (and prevalences) may be generated for various time periods, for example, ever in the person’s lifetime, within the last year, and so on. Lifetime prevalence rates include all those who met full diagnostic criteria at any time prior to the interview. The one-year prevalence includes those persons who met the lifetime prevalence criteria and who had symptoms in the year preceding the interview. A case in which full diagnostic criteria were first met in the year preceding the interview would be included in both the lifetime prevalence and one-year prevalence rates and could not, therefore, have had a symptom remission of one year’s duration.

**Table 1. Lifetime prevalence percent (SE), weighted data**

Disorder	18 to 24 n = 578	25 to 34 n = 1014	35 to 44 n = 582	45 to 54 n = 363	55 to 64 n = 363	65 and over n = 358	All ages N = 3258
Alcohol abuse or dependence, N = 538							
Male	30.5 (3.0)	34.8 (2.4)	28.1 (3.2)	29.0 (4.1)	24.0 (3.7)	14.4 (3.6)	29.3 (1.3)
Female	10.6 (1.8)	7.1 (1.1)	6.8 (1.3)	4.2 (1.2)	3.2 (1.3)	2.4 (1.3)	6.7 (0.6)
Total	20.7 (1.8)	21.8 (1.5)	17.5 (1.8)	16.8 (2.2)	13.1 (2.0)	7.4 (1.7)	18.0 (0.8)
Drug abuse or dependence, N = 198							
Male	17.0 (2.5)	16.3 (1.8)	7.1 (1.8)	2.2 (1.3)	1.7 (1.2)	0.0	10.6 (0.9)
Female	5.4 (1.3)	6.0 (1.1)	1.3 (0.5)	0.8 (0.5)	0.0	0.0	3.2 (0.5)
Total	11.3 (1.4)	11.4 (1.1)	4.2 (1.0)	1.5 (0.7)	0.8 (0.6)	0.0	6.9 (0.5)
Major depressive episode, N = 344							
Male	3.3 (1.1)	9.2 (1.4)	3.3 (1.2)	7.2 (2.2)	8.5 (2.3)	1.8 (1.1)	5.9 (0.6)
Female	8.7 (1.6)	14.1 (1.5)	13.8 (1.8)	17.0 (2.7)	6.8 (1.9)	5.7 (1.6)	11.4 (0.8)
Total	6.0 (1.0)	11.5 (1.0)	8.5 (1.1)	12.0 (1.8)	7.6 (1.5)	4.1 (1.1)	8.6 (0.5)
Phobia, N = 307							
Male	6.6 (1.7)	4.4 (1.1)	7.4 (1.9)	8.2 (2.3)	6.4 (2.0)	4.9 (2.5)	6.1 (0.7)
Female	9.6 (1.8)	16.0 (1.7)	12.0 (1.8)	14.9 (2.5)	6.8 (1.8)	7.3 (2.0)	11.7 (0.8)
Total	8.1 (1.2)	9.8 (1.0)	9.7 (1.3)	11.5 (1.7)	6.6 (1.4)	6.3 (1.5)	8.9 (0.5)
Panic, N = 47							
Male	0.5 (0.5)	1.3 (0.5)	1.3 (0.8)	0.7 (0.5)	0.7 (0.7)	0.0	0.8 (0.2)
Female	0.6 (0.6)	3.0 (0.8)	1.7 (0.6)	1.9 (1.0)	1.8 (1.1)	0.5 (0.5)	1.7 (0.3)
Total	0.5 (0.4)	2.1 (0.5)	1.5 (0.5)	1.3 (0.6)	1.3 (0.7)	0.3 (0.3)	1.2 (0.2)
OCD, N = 103							
Male	3.3 (1.3)	2.2 (0.7)	3.3 (1.2)	4.3 (1.9)	1.4 (1.1)	2.2 (1.6)	2.8 (0.5)
Female	2.4 (0.8)	5.1 (1.0)	2.9 (0.9)	2.5 (1.1)	1.4 (0.8)	2.7 (1.4)	3.1 (0.4)
Total	2.8 (0.8)	3.6 (0.6)	3.1 (0.7)	3.4 (1.1)	1.4 (0.6)	2.5 (1.0)	3.0 (0.3)
Antisocial personality disorder, N = 104							
Male	8.7 (1.8)	8.4 (1.4)	5.9 (1.7)	3.6 (1.4)	5.8 (2.2)	0.0	6.6 (0.7)
Female	0.9 (0.5)	1.3 (0.5)	0.3 (0.3)	0.8 (0.5)	0.0	0.5 (0.5)	0.8 (0.2)
Total	4.8 (1.0)	5.1 (0.8)	3.1 (0.9)	2.2 (0.8)	2.7 (1.0)	0.3 (0.3)	3.7 (0.4)
Any disorder, N = 1098							
Male	41.5 (3.3)	46.1 (2.5)	42.3 (3.6)	40.1 (4.5)	33.7 (4.1)	20.2 (4.0)	40.3 (1.5)
Female	27.0 (2.6)	33.0 (2.1)	27.7 (2.4)	29.8 (3.3)	16.7 (2.7)	11.4 (2.3)	26.2 (1.1)
Total	34.3 (2.1)	40.0 (1.6)	35.1 (2.2)	35.1 (2.8)	24.7 (2.5)	15.1 (2.2)	33.2 (0.9)

N for each disorder is the number of lifetime cases; n for age groups is the sample size in that age group.

Survey weights were constructed with adjustments for household size and with poststratification to the census age and sex distribution for Edmonton.

In this report, lifetime and one-year diagnoses and prevalences are used. Weighted prevalence rates are shown in Tables 1 and 2 and provide the data for calculation of remission rates. Prevalence rates, means, and standard errors (SE) were calculated by SUDAAN, a program designed for the analysis of complex survey data. The lifetime and one-year prevalence rates by age and sex have not been previously reported in such detail.

In the data presented in Table 3, the term "remission rate" is used. This refers only to symptomatic remission and is calculated in a manner identical to that used in the ECA reports cited. The remission rate (lifetime prevalence minus one-year prevalence, divided by lifetime prevalence) is ex-

pressed as a percentage. All of our data have been recalculated for this report, and this recalculation of weights is responsible for some minor differences from data previously published (20) where the methodology is presented in more detail. Where correlations are given, they are Pearson correlations. Only those disorders with a substantial number of cases are considered.

## Results

### General

While most of the results that follow are based on lifetime and one-year remission rates by age, Figure 1 shows the overall remission rate for each disorder for all ages and both sexes at both 6-month and one-year follow-up. For all disorders except alcohol and drug abuse or dependence, the one-year remission rate is less than 50%. Also, for all disorders

Table 2. One-year prevalence percent (SE), weighted data

Disorder	18 to 24 n = 578	25 to 34 n = 1014	35 to 44 n = 582	45 to 54 n = 363	55 to 64 n = 363	65 and over n = 358	All ages N = 3258
Alcohol abuse or dependence, N = 538							
Male	18.5 (2.5)	15.7 (1.9)	9.7 (2.1)	12.2 (2.7)	9.5 (2.7)	3.6 (1.8)	13.5 (1.0)
Female	4.5 (1.2)	1.7 (0.5)	2.2 (0.8)	1.5 (0.8)	0.9 (0.6)	1.4 (1.0)	2.4 (0.4)
Total	11.6 (1.4)	9.2 (1.0)	6.0 (1.1)	6.9 (1.5)	5.0 (1.3)	2.3 (0.9)	7.9 (0.6)
Drug abuse or dependence, N = 198							
Male	10.0 (2.0)	4.5 (1.0)	2.0 (0.9)	0.7 (0.7)	0.0	0.0	4.3 (0.6)
Female	1.8 (0.9)	1.5 (0.6)	0.0	0.0	0.0	0.0	0.9 (0.3)
Total	5.9 (1.1)	3.1 (0.6)	1.0 (0.5)	0.4 (0.4)	0.0	0.0	2.6 (0.3)
Major depressive episode, N = 344							
Male	1.5 (0.7)	5.4 (1.1)	2.3 (1.0)	3.2 (1.3)	6.1 (2.1)	0.9 (0.6)	3.4 (0.5)
Female	5.8 (1.4)	7.7 (1.2)	5.0 (1.1)	7.3 (1.9)	5.5 (1.7)	1.9 (1.1)	5.9 (0.6)
Total	3.6 (0.8)	6.5 (0.8)	3.6 (0.7)	5.2 (1.2)	5.8 (1.3)	1.5 (0.7)	4.6 (0.4)
Phobia, N = 307							
Male	3.8 (1.3)	3.5 (1.0)	5.6 (1.7)	5.4 (2.0)	4.4 (1.7)	1.8 (1.8)	4.1 (0.6)
Female	6.4 (1.4)	12.0 (1.5)	7.2 (1.4)	10.7 (2.2)	5.0 (1.6)	6.0 (1.8)	8.3 (0.7)
Total	5.1 (1.0)	7.5 (0.9)	6.4 (1.1)	8.0 (1.5)	4.7 (1.2)	4.2 (1.3)	6.2 (0.5)
Panic, N = 47							
Male	0.0	0.7 (0.4)	0.8 (0.6)	0.7 (0.5)	0.7 (0.7)	0.0	0.5 (0.2)
Female	0.6 (0.6)	1.9 (0.7)	0.6 (0.3)	0.4 (0.4)	1.8 (1.1)	0.5 (0.5)	1.0 (0.3)
Total	0.3 (0.3)	1.3 (0.4)	0.7 (0.3)	0.6 (0.3)	1.3 (0.7)	0.3 (0.3)	0.8 (0.2)
OCD, N = 103							
Male	1.0 (0.6)	1.6 (0.6)	3.1 (1.2)	2.9 (1.3)	1.4 (1.1)	0.9 (0.9)	1.7 (0.4)
Female	1.8 (0.7)	2.5 (0.7)	1.9 (0.7)	1.5 (0.9)	0.7 (0.5)	2.2 (1.3)	1.9 (0.3)
Total	1.4 (0.5)	2.0 (0.5)	2.5 (0.7)	2.2 (0.8)	1.0 (0.6)	1.6 (0.8)	1.8 (0.2)
Antisocial personality disorder, N = 104							
Male	7.2 (1.7)	6.3 (1.2)	2.6 (1.1)	2.5 (1.3)	0.7 (0.7)	0.0	4.4 (0.6)
Female	0.9 (0.5)	0.5 (0.3)	0.0	0.0	0.0	0.0	0.4 (0.2)
Total	4.1 (0.9)	3.5 (0.6)	1.3 (0.6)	1.3 (0.7)	0.3 (0.3)	0.0	2.4 (0.3)
Any disorder, N = 1098							
Male	26.9 (2.9)	26.3 (2.2)	21.0 (3.0)	21.1 (3.5)	22.8 (3.7)	8.5 (3.0)	23.2 (1.3)
Female	17.1 (2.2)	22.7 (1.9)	16.4 (2.0)	20.1 (2.9)	13.5 (2.5)	9.8 (2.2)	17.6 (1.0)
Total	22.0 (1.8)	24.6 (1.5)	18.7 (1.8)	20.6 (2.3)	17.9 (2.2)	9.3 (1.8)	20.4 (0.8)

N for each disorder is the number of lifetime cases; n for age groups is the sample size in that age group.

except panic, the 6-month remission rate is higher than the one-year rate, which is a necessary result of the definition of remission rate.

Figure 2 shows the one-year remission rates for all disorders by age group for each sex. There are obvious differences between men and women, with men tending to have higher but women lower remission rates with increasing age. Note that both sexes show a marked decline in remission rates in the late middle age group.

#### *Alcohol Abuse or Dependence*

The one-year remission rate for men varies from a low of 40% in young men to a high of 75% in those over age 65 (see Table 3). For women, the picture is different. Young women have a 58% one-year remission, but those over age 65 have only a 42% rate. Clearly, while male alcoholics show increas-

ing remission rates with aging, the opposite is true for women (see Table 3).

#### *Drug Abuse or Dependence*

In our study, all women who abused drugs achieved remission by age 35, whereas for men this occurred 20 years later, by age 55. Men "plateau" between the ages of 25 and 45, demonstrating little change in the remission rates over that time. Obviously, for both sexes, there is a positive relationship between remission rates and age (see Table 3).

#### *Major Depression*

Table 3 shows the remission rates of major depression for men and women. Young women show a recovery rate of 33%, which increases to 64% in those aged 35 to 44, declines until ages 55 to 64 (when it is only 19%), and increases again in the elderly to 67%. Men initially have a higher rate of remis-

Table 3. One-year remission rates (%), weighted data

Disorder	18 to 24 n = 578	25 to 34 n = 1014	35 to 44 n = 582	45 to 54 n = 363	55 to 64 n = 363	65 and over n = 358	All ages n = 3258
Alcohol abuse or dependence, N = 538							
Male	39.3	54.9	65.5	57.9	60.4	75.0	53.8
Female	57.5	76.1	67.6	64.3	71.9	41.7	64.7
Total	44.0	57.8	65.7	58.9	61.8	68.9	56.1
Drug abuse or dependence, N = 198							
Male	41.3	72.1	71.4	66.7	100.0	—	59.6
Female	66.7	74.2	100.0	100.0	—	—	73.2
Total	47.4	72.6	75.6	75.2	100.0	—	62.3
Major depressive episode, N = 344							
Male	54.5	41.3	30.3	55.6	27.4	50.0	43.0
Female	33.3	45.4	63.8	57.1	19.1	66.7	48.1
Total	40.0	43.5	57.6	56.7	23.7	63.4	46.5
Phobia, N = 307							
Male	42.5	21.1	24.1	34.8	31.6	63.6	33.7
Female	32.8	24.7	39.5	28.2	26.7	18.5	28.8
Total	36.8	23.8	33.6	30.6	28.9	33.3	30.3
Panic, N = 47							
Male	100.0	45.4	40.0	0.0	0.0	—	43.9
Female	0.0	35.5	66.7	80.0	0.0	0.0	38.0
Total	45.5	38.7	55.0	57.7	0.0	0.0	41.7
OCD, N = 103							
Male	70.0	26.4	7.7	33.3	0.0	60.0	38.4
Female	25.0	51.0	33.3	38.5	50.0	20.0	39.1
Total	51.2	42.9	19.6	35.2	26.3	35.0	40.0
Antisocial personality disorder, N = 104							
Male	17.0	25.9	56.5	30.0	88.2	—	32.4
Female	0.0	64.3	100.0	100.0	—	100.0	54.6
Total	15.4	30.8	58.5	42.0	88.2	100.0	35.1
Any disorder, N = 1098							
Male	35.2	42.9	50.6	47.3	32.3	57.8	42.4
Female	36.7	31.3	40.7	32.7	19.2	14.3	32.7
Total	35.8	38.4	46.7	41.2	27.7	38.7	38.6

N for each disorder is the number of lifetime cases; n for age groups is the sample size in that age group.  
(—) = no lifetime cases in age group.

sion, but this is not sustained between ages 25 and 44. Like the rate for women, the remission rate for men declines to its lowest point (27%) in the 55- to 64-year-old age group, improving again (to 50%) in the elderly.

### Phobias

The one-year remission rates are shown in Table 3. While women show fairly constant remission rates, declining in the elderly, men show the highest remission rates in the old followed by the young. Men are more likely to show remission with increasing age; women are less likely to do so.

### OCD

If remission rates of OCD over time were plotted on a graph, the pattern for men would be a U-shaped curve, with those at the age extremes having the highest remission rates;

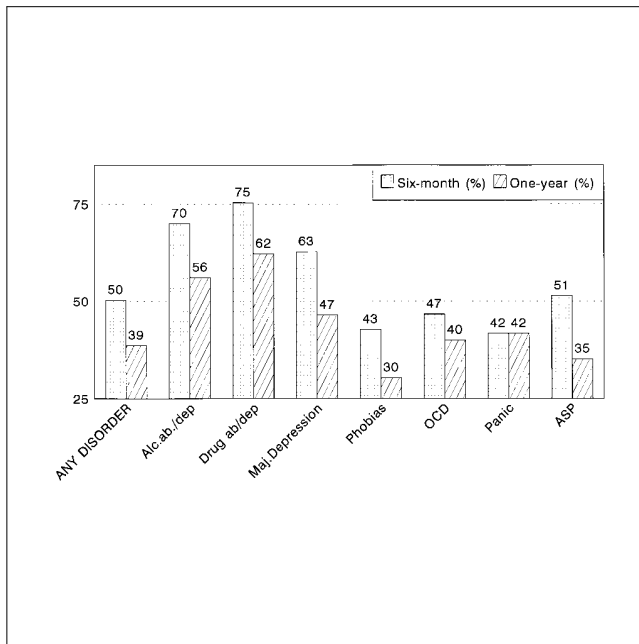
for women, the opposite pattern would emerge. The overall trend is that remission is slightly less likely with increasing age.

### Panic Disorder

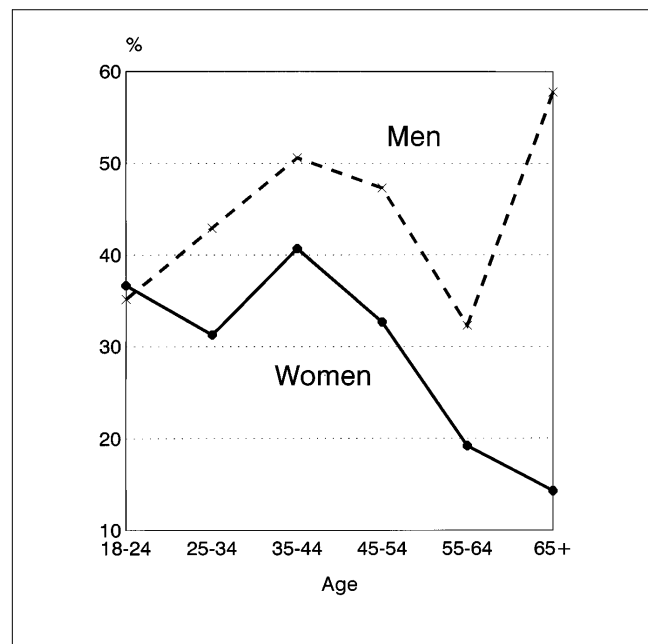
Table 3 shows that remission is unlikely after age 55.

### Antisocial Personality Disorder

Remission of antisocial personality disorder occurred in 100% of the study participants; in women, remission was achieved by age 35, in men by age 65. Thus the disorder (which has a much higher prevalence in men) appears to persist to a later age in men, but for both sexes there is a very high correlation ( $r = 0.94$ ) between age and remission.



**Figure 1.** One-year and 6-month remission rates by diagnosis for both sexes and all ages (weighted data).



**Figure 2.** One-year remission rates by age for all disorders and each sex (weighted data).

*Overview*

Figures 3 and 4 plot the one-year remission rates of each sex for all the disorders considered here (except panic disorder, of which there were only 47 cases). Drug use and antisocial personality in both men and women and alcohol abuse or dependence in men are more likely to remit with increasing age.

Panic and OCD seem likely to show progressively lower remission rates with increasing age, and major depression and phobias show no clear trends.

These observations seem reasonably consistent with clinical observation and experience.

**Discussion**

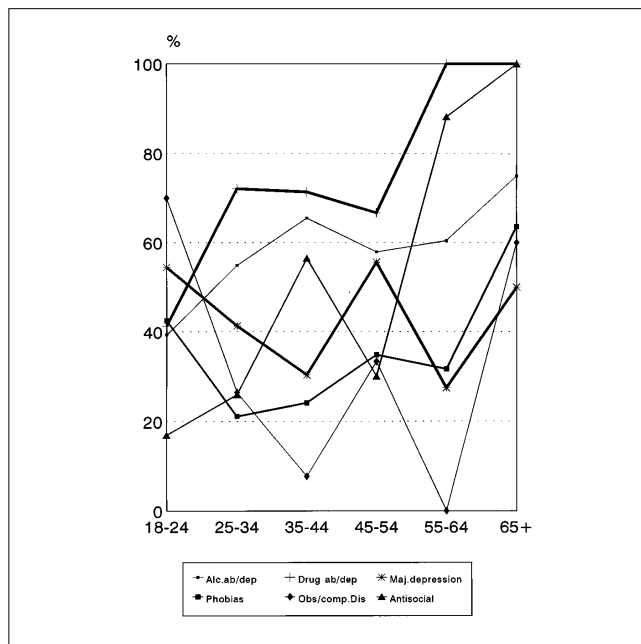
Lifetime prevalence rates may be expected to increase with each successive age group, as progressively more of the risk period is passed through. This is the case for some disorders, but not for others, a finding also reported from the ECA research. Possible explanations may be that certain birth cohorts or time periods produced an excess of some disorders, or that recall may deteriorate with time (but in that case all disorders should be showing the same changes), or that for some disorders, older persons may be less likely to attribute symptoms to a psychiatric disorder.

One-year remission rates must be the same or lower than the 6-month rates (see Figure 1), since this is the duration of the symptom-free period, and the longer the symptom-free requirement is, the lower the rate will be.

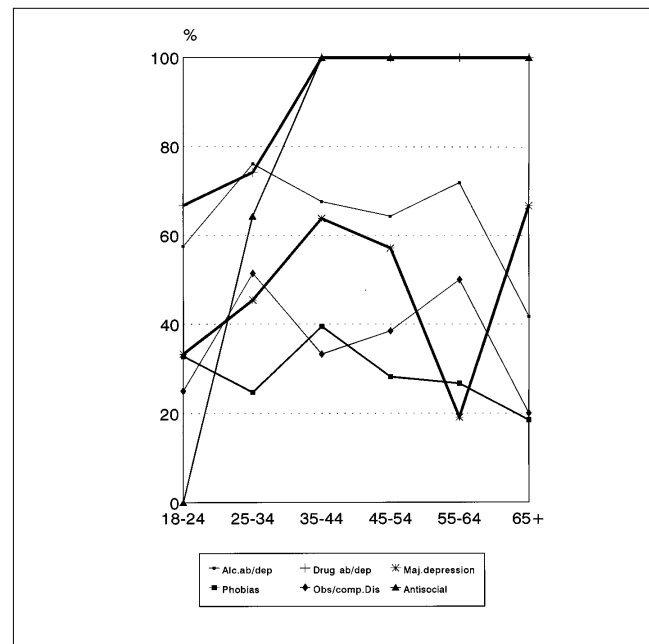
The one-year remission rates reported are disappointingly low (for all disorders together, only 38.6%). Three disorders—antisocial personality disorder, drug abuse or dependence, and alcohol abuse or dependence—are clearly shown to have an increasing likelihood of remission as the person becomes older. Panic disorder and, to a lesser extent, OCD show a tendency to a decreasing likelihood of remission as the person ages. For depression, the overall tendency is to show a one-year remission rate of below 50% without a distinct age trend. There is, however, a considerable drop in the remission rate for both men and women in the late middle age group (55 to 64 years) to 24%, a finding noted by others (9).

These results are not very encouraging. Those disorders for which psychiatry is often thought to have little specific treatment to offer—antisocial personality and alcohol and drug abuse disorders—clearly show an increased tendency to remission with aging. Those which are usually considered rather more treatable, especially by pharmacological means, such as major depression, phobias, OCD, and panic disorder, either show little change in remission rates with aging or lower remission rates with increasing age.

These results, particularly for depression, are not consistent with those reported in most randomized controlled trials of antidepressant medications. Such trials are of short duration, however, and certainly do not require a year of freedom from symptoms. Most regard success as a given percentage reduction in a standard rating scale. Long-term follow-up studies of depressed patients show high relapse rates when patients discontinue antidepressants, results more consistent



**Figure 3.** One-year remission rates of various psychiatric disorders by age for men.



**Figure 4.** One-year remission rates of various psychiatric disorders by age for women.

with those reported here (21). Thus it seems that careful follow-up and long-term maintenance may be required in many cases, with particular caution exercised in the treatment of those aged 55 to 64 years, for whom the remission rate is lowest.

The findings presented from Edmonton do not seem to be aberrations. The ECA results overall are very similar. Since the methodology was similar, we may have some confidence in the reliability of the results. There are, however, a number of methodological issues. The study was cross-sectional, not prospective. Symptoms were as reported by the study subjects and hence required recall that may have been of variable reliability and subject to differential bias against attribution of symptoms to psychiatric disorders, particularly in men and older subjects. Those without any recent symptoms (that is, patients in remission) may be more likely to forget to report a lifetime history, leading to an underestimate of the remission rates in our data. In addition, the DIS has been criticized as an instrument because it yields lower rates of diagnosis of depression, especially in the elderly, than those found with a later interview development, the Composite International Diagnostic Interview (CIDI) (22).

Both the Edmonton and ECA studies were based on community samples from which "cases," who may or may not have been treated, were derived: one could expect, therefore, that the sample would include a full spectrum of severity from mildest to most severe. One would also expect such a sample to have better outcomes than a clinical sample, which is likely to have a bias toward chronicity and severity. Nevertheless,

a community sample also includes untreated cases, who may show little improvement.

The outcome definition used in our work in Edmonton and in the ECA study is based on self-reported symptoms and thus is not multidimensional, there being no measures of social or occupational functioning.

It is possible that in those disorders which show comparatively good remission rates in later years (antisocial disorders and drug and alcohol abuse) there has been a high differential mortality, in effect removing the cases with poor outcomes. Other disorders, such as depression and panic, are also associated with increased mortality, but they do not show the same outcome patterns. Thus high differential mortality seems unlikely to be a substantial explanation.

The remission rates as presented do not reflect the base rates of the disorders. The lifetime prevalence of both alcohol abuse or dependence and drug use disorders is much higher in the younger than in the older age groups, and this may reflect changing social patterns. Whether current drug users will show the same high remission rates when they are older as those presently in the older age groups remains to be seen.

#### Clinical Implications

- Antisocial personality disorder and drug and alcohol abuse/dependence remit with age.
- Other psychiatric disorders have low sustained remission rates.
- The remission rate for depression is less than 50% and is especially poor between the ages of 55 and 64.

### Limitations

- This is a population study, not a clinical case study.
- The definition of remission is limited to symptoms only.
- A community survey may overestimate remission because of the inclusion of less severe cases.

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### Résumé

**Objectif :** Examiner la relation entre la rémission des troubles psychiatriques et l'âge.

**Méthodes :** Nous avons interviewé 3 258 Edmontoniens adultes au moyen du Diagnostic Interview Schedule (DIS), ce qui a donné lieu à des diagnostics en fonction du DIS ou du DSM-III. On a défini la rémission comme l'absence de symptômes du trouble de référence à vie pendant l'année précédant l'entrevue, c'est-à-dire la différence entre la prévalence à vie et la prévalence pendant une année. Pour chaque groupe d'âge, on a calculé la proportion de cas où des symptômes étaient présents ou non pendant l'année précédente. Après un rajustement selon la population recensée et une pondération selon la taille des ménages, on a estimé les nombres et les proportions de cas. Seuls les troubles les plus fréquents ont fait l'objet d'un examen : on a fait abstraction des comorbidités.

**Résultats :** L'abus ou la dépendance aux drogues, la personnalité antisociale (chez les hommes et les femmes) et l'abus d'alcool ou la dépendance alcoolique (chez les hommes) correspondaient tous à des taux de rémission qui augmentaient en fonction de l'âge. Le trouble panique et le trouble obsessionnel-compulsif (TOC) correspondaient à une probabilité réduite de rémission en fonction du vieillissement. La dépression majeure et les phobies ne manifestaient presque aucune tendance à la rémission en fonction de l'âge. En tenant compte de tous les troubles simultanément, le taux de rémission pour une année, tous âges confondus, n'était que de 33,2 %, une tendance à des taux de rémission moins élevés étant observée chez les sujets de 55 à 64 ans.

**Conclusions :** Comme on peut s'y attendre, la personnalité antisociale, l'abus ou la dépendance aux drogues et l'abus d'alcool ou la dépendance alcoolique ont tendance à correspondre à des taux de rémission accrus en fonction du vieillissement. En ce qui a trait au TOC et au trouble panique, les faibles taux de rémission observés dans tous les groupes d'âge révèlent que ces troubles provoquent une morbidité à long terme significative. En ce qui concerne la dépression, dont le taux de rémission global était inférieur à 50 %, la stabilité du faible taux de rémission témoigne sans doute, non seulement des difficultés du traitement, mais aussi des faibles taux de traitement des cas.