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Is two weeks the optimum duration criterion for major depression?

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Introduction: A clinically useful diagnostic classification should identify most patients who are treated. To our surprise, DSM-IV criteria for major depressive episodes (MDE) detected fewer than 50% of a community sample (the Zurich study) who had received treatment for depression.[1] Treated subjects often experience episodes lasting under 2 weeks, or with fewer symptoms than required for a DSM diagnosis.

Methods: Our paper focuses on the validity and clinical relevance of the length of depressive syndromes, defined by the presence of 5 or more of 9 diagnostic symptoms (DSM-IV).

Results: We found depressive syndromes lasting under 2 weeks to be highly prevalent, and those lasting 4+ days to have equal validity (family history, age of onset, course) and treatment rates to episodes of 2-4 weeks.

Conclusions: The 2-week criterion for MDE would appear questionable. Our results need confirmation by larger epidemiological studies.

Keywords: Major depressive episodes, Diagnostic criteria, Minimum duration, Validity

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¿Son dos semanas, el criterio de la duración óptima de la depresión mayor?

Introdución: Una clasificación diagnóstica de utilidad clínica debe identificar la mayoría de los pacientes que son tratados. Para nuestra sorpresa, los criterios del DSM-IV para el trastorno depresivo mayor (TDM) detectaron menos de 50% de una muestra de la comunidad (el estudio de Zurich) que habían recibido tratamiento para depresión. Los sujetos tratados experimentan a menudo episodios que duran menos de 2 semanas, o presentan menos síntomas de los requeridos para un diagnóstico de TDM.

Método: Nuestro documento se centra en la validez y la relevancia clínica de la duración de los síndromes depresivos, que se define por la presencia de 5 o más de los 9 síntomas de diagnóstico (DSM-IV).

Resultados: Encontramos síndromes depresivos que duran menos de 2 semanas que eran altamente prevalentes y algunos que duran 4 + días tienen la misma validez (antecedentes familiares, la edad de inicio, curso) y las tasas de tratamiento de los episodios de 2-4 semanas.

Conclusiones: El criterio de 2 semanas para TDM parece cuestionable. Nuestros resultados necesitan ser confirmados por estudios epidemiológicos más amplios.

Palabras clave: Episodio depresivo mayor, Criterios diagnósticos, Duración mínima, Validez

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INTRODUCTION

Episode duration is often a basic criterion of psychiatric diagnoses. There are doubts whether the current definitions are valid and clinically meaningful in this respect, in the sense that they characterise as many treated patients in the community as possible. The scale of this problem is illustrated by the definition of generalised anxiety disorder (GAD). The minimum episode length for a diagnosis of GAD has fluctuated over the years in the DSM system: it was 1 month in DSM-III, 3 months in DSM-III-R, 6 months in DSM-IV and is back to 3 months in DSM-5.

For depression the situation is clear: we use an uncontested minimum duration of 2 weeks for the definition of a major depressive episode in both DSM and ICD, although this definition, too, covers just under half of the patients treated for any kind of depression.[1] Our earlier analysis demonstrated that (a) subjective suffering/distress and (b) work impairment are the factors most closely associated with treatment seeking for many syndromes.

This paper tests the 2 weeks' duration criterion for depression on the basis of epidemiological data on various episode durations by means of important variables reflecting validity and clinical relevance. We focus on the clinical relevance of shorter episodes of depression, for instance 4+ days compared to 2 weeks. We will also present some data on treatment seeking.

METHODS

Sampling and procedure

The Zurich Study comprised a cohort of 4547 subjects (m=2201; f=2346) representative of the canton of Zurich in Switzerland. Participants were screened with the Symptom Checklist 90-R[2] in 1978, when the men were 19 and the women 20 years old. Male and female participants were sampled using different approaches. For the men, this was based on the army screening test which all Swiss males undergo at the age of 19. Conscripts within a given catchment area thus comprise its complete male age group. With the consent of the military authorities, but independently of their procedure, we randomly screened all male conscripts in the canton of Zurich in this age group. The refusal rate was 0.3%. For the women, sampling was based on the complete electoral register of the canton of Zurich. 50% of the female participants were randomly selected and received questionnaires by mail; 75% responded.

In order to increase the probability of the development of psychiatric syndromes, a stratified subsample of 591 subjects (292 males, 299 females) was then selected for interview, with two-thirds consisting of high scorers (defined by the 85th percentile or more on the global severity index (GSI) of the SCL-90-R, the other third being a random sample of probands with scores below the 85th percentile. Such a two-phase procedure, consisting of initial screening and subsequent interview with a stratified subsample, is fairly common in epidemiological research.[3]

Interviews were conducted with the "Structured Psychopathological Interview and Rating of the Social Consequences of Psychological Disturbances for Epidemiology" (SPIKE),[4] administered by specially trained clinical psychologists and psychiatrists. This semi-structured interview, specifically developed for epidemiological surveys in psychiatric research, assesses data on socio-demography, somatic syndromes, psychopathology, substance use, medication, health services, impairment, and social activity. Its reliability and validity have been reported previously.[5]

Altogether seven interview waves have been conducted: in 1979, 1981, 1986, 1988, 1993, 1999, and 2008 (see Figure 1). An analysis conducted in 1999 showed that the initial allocation to the two groups, above and below the 85th percentile of the GSI, did not change over time, although dropouts tended to be among the extremely high or low scorers on the GSI.[6] We repeated the attrition analyses for the last interview in 2008, and found, in addition, that the participants who left the study did not differ significantly from those who remained with regard to socio-economic status and education level at outset of the study. Nor was there a difference in their initial psychopathologic impairment according to the nine SCL-90-R subscales. However, there was a moderate sex bias: more males dropped out (OR=1.82; 95%-CI=1.31-2.53).

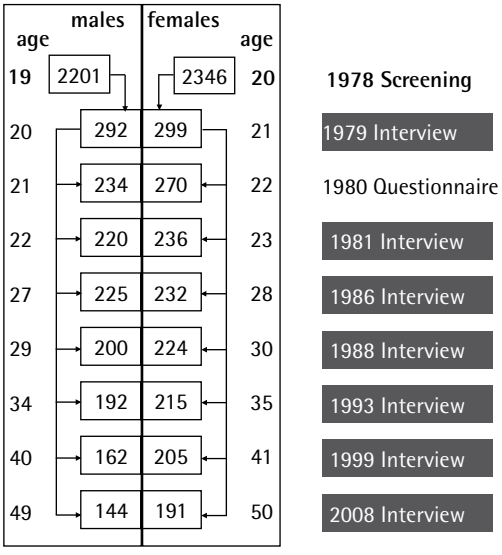


Figure 1 | *Design of the Zurich Study*

Definition and assessment of depressive syndromes

For the purposes of our analysis, the syndrome of depression was defined by the presence of any depressive episode (regardless of duration) with 5 or more of 9 diagnostic symptoms according to DSM-IV and ICD-10. Consequences (distress, impairment) were not included in the definition.

The data collected across the seven interviews varied in parallel with the revisions of the DSM. Thus, for depression, the number of depressive symptoms (including suicidality) assessed was 9 in 1979, 12 in 1981, 28 in 1986, 33 in 1988, 33 in 1993, 34 in 1999, and 39 in 2008; the assessment was routinely followed by a final open question about other symptoms.

For the definition of depressive syndromes we added, in 1979 and 1981, the data from the self-assessment symptom checklist (SCL-90-R), which contains 13 items of depression present over the last four weeks.[2]

In all 7 interviews, data were collected on treatment seeking and work impairment over the previous twelve months. Distress was regularly assessed using visual analogue scales from 0 to 100; in addition, in the last 4 interviews the degree of work impairment was assessed in the same way.

The duration of depressive episodes was classified by length: 3 months, 1 month, 2 weeks, 4 or more days, and 1-3 days. In order to increase the statistical power of the present analyses, the diagnostic variable used does not take into account the episode duration at each point of measurement, but instead is defined cumulatively, i.e. it is the highest score over the period of a subject's participation. Thus, for a participant in only two assessment waves, we considered the longer of the two reported durations. All episodes occurred during the year prior to the interviews.

The interview did not assess the lifetime occurrence of episodes but the treatment of depression over lifetime. Those subjects who had been treated for depression over lifetime but had had no manifestations of depressive episodes in any of the seven interview years constituted a special group.

Treatment was defined as treatment by professionals (MDs or psychologists).

For the assessment of course we considered the annual occurrence both of depressive symptoms and of treatment for depression for all 30 years of observation and computed the intra-individual percentage of years in which subjects were symptomatic or treated.

Participants' personality traits were assessed by the Freiburg Personality Inventory,[7] the General Behaviour Inventory,[8] and an interview question whether they had been more anxious than their peers at school age. Coping (mastery, self-esteem) was assessed by the instrument developed by Pearlin and Schooler.[9]

Statistics

First we conducted a series of cross-sectional analyses. Non-parametric methods (χ^2-tests for categorical and Kruskal-Wallis tests for continuous variables) were applied for overall group comparisons and a series of generalised linear models (GLMs) for specific associations of 4+ days' vs. 2 weeks' duration. In all GLMs, the duration of the depression syndrome was entered as the dependent variable and various clinical characteristics as predictor variables. A robust estimator was applied to reduce effects of outliers and influential observations.

For longitudinal analyses of associations between treatment use and clinical characteristics we computed a series of generalised estimating equations (GEEs). These analyses were introduced to fit regression models that account for within-subject correlation, an inherent element of longitudinal studies that rely on repeated measures. GEEs allow one to specify the working correlation matrix and to fit the distribution and the link-function. Owing to the dichotomous dependent variables, a binomial distribution with logit link-function best fitted our data. The within-subject covariance structure was specified with the "unstructured" correlation type to avoid having any constraints on the covariance structure. Again a robust estimator was used and intercept and slope were included in the analysis.

Finally, a series of receiver operating characteristic (ROC) analyses were conducted to examine which continuous predictor variable best discriminated between treatment use and non-use. Non-parametric analyses were carried out with SAS version 9 for Windows. All other analyses were conducted with SPSS version 20 for Macintosh.

RESULTS

Frequencies and prevalence rates of depressive syndromes

A depressive syndrome defined by the presence of 5+/9 criterial symptoms of depression was diagnosed at the seven interviews, each of which covered the previous twelve months; in this first step distress and impairment were not taken into account.

A depressive syndrome with a duration of 1-3 days was found in 399 of the total sample of 591 subjects; the

Table 1 Depressive syndromes by duration: associations with categorical variables

	Group 1: 3 months	Group 2: 1 month	Group 3: 2 weeks	Group 4: 4 + days	Group 5: 1-3 days	Group 6: LT trtmt depression	Group 7: others	Significance	
N	94	72	42	56	135	25	167	*p* (1-7)	*p* (1-4)
	%	%	%	%	%	%	%		
Sex									
- Males	35.1	38.9	38.1	51.8	50.4	44	64.1		
- Females	64.9	61.1	61.9	48.2	49.6	56	35.9	0.0001	0.24
Prevalence (weighted)									
- Males	5.0	10.2	4.5	7.9	20.6	4.1	47.8		
- Females	14.0	15.8	5.9	6.7	22.3	4.2	31.1		
- M+F	9.6	13.1	5.2	7.3	21.4	4.1	39.3		
Treatment prevalence weighted									
- Depression treatment lifetime	6.7	8.6	3.8	3.4	7.5	4.1	0		
- Depression treatment 1979-2008	6.4	7.3	2.4	2.2	3.8	1.1	0		
Anxiety treatment 1979-2008	2.7	3.8	2.6	2.6	2.7	0.6	0.6		
Anxiety/panic treatment 1979-2008	2.9	3.9	2.7	2.6	3.3	1.0	0.6		
Family history									
- Depression	60.6	66.7	66.7	69.6	48.2	28.0	21.0	0.0001	0.69
- Anxiety	29.0	38.0	43.6	38.9	27.1	26.1	16.4	0.005	0.36
- Anxiety/panic	29.8	37.5	42.9	39.3	27.4	28.0	11.4	0.0001	0.43
- Suicidality	23.4	18.1	23.8	23.2	14.1	4.0	9.0	0.008	0.83
Treatment 1979-2008									
- Depression	68.1	50.0	50.0	48.2	28.2	36.0	0	0.0001	0.04
- Anxiety/panic	46.8	38.9	42.9	44.6	24.4	20.0	3.6	0.0001	0.78
Treatment lifetime									
- Depression	75.5	66.7	64.3	66.1	44.4	100	0	0.0001	0.44
- Mania/hypomania	11.7	2.8	2.4	3.6	2.2	0	0	0.0001	0.05
- Anxiety	57.5	47.2	47.6	57.1	34.1	56.0	5.4	0.0001	0.46
- Anxiety/panic	63.8	51.4	50.0	57.1	35.6	56.0	5.4	0.0001	0.32
Suicidality lifetime									
- suicide attempts	35.1	19.4	26.2	7.1	10.4	8.0	0.6		
- firm suicide plans	41.5	43.1	33.3	57.1	34.1	28.0	16.8		
- suicidal ideation	12.8	16.7	19.1	12.5	14.8	4.0	2.4		
- none	10.6	20.8	21.4	23.2	40.7	60.0	80.2	0.0001	0.02
Socio-demographic variables									
- living alone	29.8	26.4	16.7	21.4	20.7	12.0	16.2	0.14	0.37
- always single	34.0	41.7	26.2	44.6	28.9	24.0	51.5	0.0005	0.21
- working full time	46.1	51.6	57.1	59.3	61.3	45.8	81.2	0.0001	0.46
- housewife	8.5	11.1	11.9	8.9	9.6	4.0	6.6	0.83	0.90

Table 1 Continuation

	Group 1: 3 months	Group 2: 1 month	Group 3: 2 weeks	Group 4: 4 + days	Group 5: 1-3 days	Group 6: LT trtmt depression	Group 7: others	Significance	
Marital status									
- single	34.0	41.7	23.8	44.6	28.9	24.0	51.5		
- married	36.2	41.7	50.0	33.9	48.9	56.0	38.3		
- sep./divcd/widowed	29.8	16.7	26.2	21.4	22.2	20.0	10.2	0.0008	0.35
School education									
- basic	38.7	23.5	27.5	25.0	35.3	32.0	44.9		
- secondary	35.5	47.1	35.0	34.6	33.8	40.0	34.0		
- upper secondary	25.8	29.4	37.5	40.4	30.8	28.0	21.2	0.09	0.21
Temperament									
- Anxious	29.8	14.3	10.6	8.6	28.0	9.7	10.8	0.0001	0.02
- Cyclothymic	38.5	32.1	25.8	28.6	26.0	16.1	16.9	0.0001	0.37
- Depressed (PDD.GBI2x)	18.6	12.9	11.4	26.0	14.8	4.7	1.2	0.002	0.23

weighted cumulative prevalence rate was 56.6%. A depressive syndrome lasting at least 4 days was found in 264 subjects (prevalence 35.2%). The two groups of specific interest (groups 3 and 4 in Table 1) were large enough for analysis (durations of 4+days N=56 and 2 weeks N=42).

As expected, depressive syndromes were more common among women; the female preponderance grew conspicuously as the episode duration increased: while there was no clear gender difference in the prevalence rates of the shorter depressive syndromes of 1-3 days (F 22.3% vs. M 20.6%) or of 4-13 days (F 6.7% vs. M 7.9%), there were more women in the 2-week (F 5.9% vs. M 4.5%) and 1-month groups (F 15.8% vs. M 10.2%); depressive syndromes lasting 3 months were almost three times more common among women than among men (F 14% vs. M 5%).

Across the 30 years of the study the weighted lifetime prevalence of treatment was 34.1%: for depressive syndromes lasting 2 or more weeks, 19.1%; for syndromes shorter than 2 weeks, 10.9%; a further 4.1% subjects did not report any depression during the interview years but had been treated at least once over their lifetime.

Restricted to the period covered by the interviews (1979-2008) the treatment prevalence was 22.3%.

Diagnostic validity of the length of depression

The focus of this paper is the optimum length of a depressive episode in terms of validators and treatment. Table 1 presents the categorical data and table 2 the continuous variables. We computed the significances across all sub-groups but concentrate here on the differences between the first *four groups: depression lasting 3 months, 1 month, 2 weeks and 4+ days.* Group 5, a large group of 153 subjects with episodes lasting 1-3 days, is not relevant in this context since we do not focus on recurrence (recurrent brief depression).

Our four analysis groups did not differ significantly from each other with regard to a positive family history (FH+) of depression, suicidality, anxiety or anxiety/panic. But they all differed clearly from the 173 subjects with no depression.

As stated earlier, the data on treatment (yes/no) was computed in two ways 1) treatment during the 12 months prior to the interviews, and 2) lifetime treatment. The four groups did not differ in treatment rates for depression or anxiety/panic in either computing method. More especially, the treatment rates for depression of the subjects with depressive syndromes lasting 4+ days (48.2%) did not differ statistically from those with episodes of 2 weeks' duration (50.0%). Nor did those two groups differ statistically regarding the percentage of years in treatment over the period of 30 years

Suicidality over lifetime differed significantly among the four groups. Suicide attempt rates were highest among subjects with 3-month depressive syndromes (35.1%) and lowest in those with depressive syndromes lasting 4+ days (7.1%). Similar significant differences between the groups were found for an anxious temperament, but not for a cyclothymic temperament or a depressive personality type/ temperament.

Table 2 Depressive syndromes by duration: associations with continuous variables

	Group 1: 3 months		Group 2: 1 month		Group 3: 2 weeks		Group 4: 4 + days		Group 5: 1-3 days		Group 6: LT trtmt depression		Group 7: others		Significance	
N	94		72		42		56		135		25		167		p (1-7)	p (1-4)
	m	DS	m	DS	m	DS	m	DS	m	DS	m	DS	m	DS		
Age at onset																
- Depression	15.8	7.2	14.8	4.7	15.2	5.5	15.1	5.2	16.4	5.9	20.3	9.4	17.7	6.5	0.003	1.0
- Anxiety	18.5	10.5	18.6	11.2	14.9	7.7	16.1	9.2	17.7	9.1	20.8	11.0	17.4	9.4	0.37	0.25
- Anxiety/panic	17.3	10.1	18.1	11.0	13.1	6.5	15.1	8.4	17.7	9.6	20.0	9.9	16.8	9.2	0.15	0.15
- Mania/hypomania	20.9	9.0	23.0	10.8	22.0	9.5	22.3	9.8	22.6	9.4	21.3	14.8	20.1	8.9	0.95	0.96
Course 1978-2008																
- % years symptomatic	53.8	25.6	48.9	26.0	59.3	26.0	56.3	22.3	46.9	26.8	25.3	21.0	22.5	26.4	0.0000	0.18
- % years treated	16.0	19.7	8.8	11.4	12.2	19.9	10.6	15.0	4.4	8.1	8.7	9.1	0	0	0.0000	0.07
Distress (0-100)																
- Depression 1*	87.2	11.7	84.0	15.9	76.3	21.5	75.5	22.7	71.3	25.0					0.0000	0.005
- Anxiety/panic	68.3	34.7	71.2	32.1	66.0	35.3	64.3	32.6	58.9	35.4					0.08	0.52
Work impairment (0-100)																
- Depression 2*	54.7	28.3	41.0	30.1	51.4	21.2	36.3	28.2	31.0	24.6					0.0000	0.001
- Anxiety/Panic	42.5	35.2	30.7	34.2	44.4	27.4	34.9	29.1	25.0	30.1					0.004	0.12
FPI																
- Aggression	19.3	7.4	18.0	7.1	17.7	7.5	19.1	6.7	18.1	7.7	15.9	7.8	14.6	6.1	0.002	0.43
- Extraversion	17.5	7.5	18.1	8.0	19.3	7.9	15.4	7.8	18.2	7.8	20.1	7.5	20.8	7.5	0.02	0.15
- Neuroticism	19.8	7.0	16.9	7.0	17.0	5.3	19.2	8.4	16.7	7.0	13.6	4.2	11.8	4.3	0.0000	0.05

1* distress by depression, t-test group 3 vs. 4: p<.60
2* work impairment by depression: group 3 vs. 4: Wilcoxon two-sided, p<.02

Of great clinical importance are subjective suffering/distress and work impairment, which we measured on a scale from 0-100 (Table 2). Subjects with 3-month or 1-month depression scored higher (means of 87 and 85) than those with 2-week or 4+-day depression; but the last two groups still scored relatively high, with equal means around 76 on the scale from 0-100. The degree of work impairment varied significantly but unsystematically between means of 40 to 55. Similar unsystematic variations were found for neuroticism, coping, self-esteem and the severity of the symptoms self-assessed by the SCL-90-R between 1978 and 2008. No significant differences were found among the four episode duration groups (1-4) as regards the age at onset of depression and anxiety or the personality traits of extraversion and aggression.

Two-week compared to four-day depression

The discrimination between depressive syndromes lasting 4+ days and those lasting 2 weeks using generalised linear models is reported in Table 3. A duration of 4+-days served as the reference. In the bivariate analyses none of the variables included discriminated significantly between the 4+ days' and 2 weeks' durations, although the odds ratios for the frequency of symptoms were substantial. In a larger sample those associations might have reached statistical significance. In view of the small sample, no multivariate analysis was carried out.

Variables associated with treatment seeking

Clinically speaking, a good case definition should cover as many treated patients as possible. The distinction of 2 weeks' vs. 4 days' depression resulted in a sensitivity of 0.62 vs. 0.76 and a specificity of 0.78 vs. 0.71 for treatment seeking.

We also used GEEs to examine longitudinally nine further variables as predictors of treatment seeking for depression.

The bivariate associations are reported in Table 4. All variables included were statistically significant. Strong associations were found for the number of criterial depressive symptoms, suffering/distress, and suicidality. The

Table 3 4+ days vs. 2-weeks' depression, results of a series of generalised linear models (GLMs)

Predictor		OR (95% CI)	Wald $\chi 2$ (df)	Sig
Frequency of depressive episodes over the last twelve months	1-3 per year	3.18 (0.77; 13.23)	2.534 (1)	0.111
	4-11 per year	2.18 (0.88; 5.42)	2.831 (1)	0.092
	Min. 1x per month	1.15 (0.58; 2.27)	0.163 (1)	0.687
	Min. weekly	Reference		
N of days depressed over the past year	1 SD increase	0.85 (0.60; 1.21)	0.850 (1)	0.357
N of depressive symptoms	1 SD increase	0.95 (0.46; 1.93)	0.023 (1)	0.880
Suffering (0-100)	1 SD increase	1.07 (0.67; 1.72)	0.083 (1)	0.773
Age at onset	1 SD increase	0.81 (0.55; 1.20)	1.075 (1)	0.300
Sex	Female	1.24 (0.67; 2.30)	0.471 (1)	0.493
	Male	Reference		
Suicidality	None	0.78 (0.36; 1.70)	0.385 (1)	0.535
	Vague	1.09 (0.55; 2.16)	0.064 (1)	0.800
	Severe	Reference		
Work impairment	No	1.49 (0.50; 4.50)	0.507 (1)	0.476
	Yes	Reference		

multivariate analysis confirmed that these variables were important, although in an attenuated form (see Table 5).

Distress and work impairment associated with treatment seeking

Finally, using ROC analyses, we investigated which item, work impairment or general distress (both measured on a scale from 0-100), discriminated better between treatment seeking and not.

We conducted separate models for the 4 days' minimum and 2 weeks' minimum episode durations. In ROC the area under the curve (AUC) provides the total discriminatory power of a given variable. AUC=1.00 would imply perfect discrimination and AUC=0.50 pure chance and thus no discriminative power at all.

The results were as follows. For general distress in ≥4 days' depressive episodes: AUC=0.669; for general distress in ≥2 weeks' depressive episodes: AUC=0.665; for work impairment in ≥4 days' depressive episodes: AUC=0.627; and finally, for ≥2 weeks' depressive episodes: AUC=0.643.

In the comparison of ≥4 days' and 2 weeks' depression, distress was equal but work impairment was significantly higher in the latter group. Comparing treated vs. non-treated subjects general distress was a slightly better discriminator than work impairment. The ROC curve of general distress in ≥4 days' depressive episodes with at least 5 symptoms is shown in Figure 2.

DISCUSSION

To our knowledge this is the first epidemiological study to analyse the duration of depressive episodes as a diagnostic criterion, in terms of validity, clinical consequences and relevance (treatment seeking, distress/suffering and work impairment). This paper follows on from an earlier analysis in a community sample of the association between certain psychiatric syndromes and treatment seeking, which showed that DSM-IV diagnostic concepts covered fewer than 50% of treated patients.[1] In view of the social and clinical relevance of treatment seeking, our aim is to contribute to improving diagnostic coverage on the basis of replicated representative data from countries where treatment is available for all.

Before comparing the most interesting of the two groups (depressive episodes lasting 2 weeks, and 4 days), we will consider all four duration subgroups (3 months, 1 month, 2 weeks, 4 days). 68% of the 3-month group was treated, and about 50% in the other three. As mentioned earlier, the large group of 1-3 days' depression was not taken into account for further analyses; its much lower treatment rate (28%) introduces the criterion of recurrence, and recurrent brief depression is not the subject of this paper.

The validity testing of the *four groups* showed no difference regarding the age at onset of depression, percentage of years of being symptomatic for depression, family history of depression, lifetime treatment for depression, cyclothymic or depressive temperament, or personality traits (extraversion, aggression). Unsurprisingly, however, the four groups did differ in regard to treatment rates during the years covered by the seven interviews, suicidality, some personality traits (i.e. anxious temperament and neuroticism); the highest scores were routinely found in the subjects with 3-month depression (group 1).

Most important, we found that the *two groups* of greatest interest (episode durations of 2 weeks vs. 4 days)

Table 4 Results of a series of generalised estimating equations (GEEs): bivariate associations of treatment-seeking among patients with depression

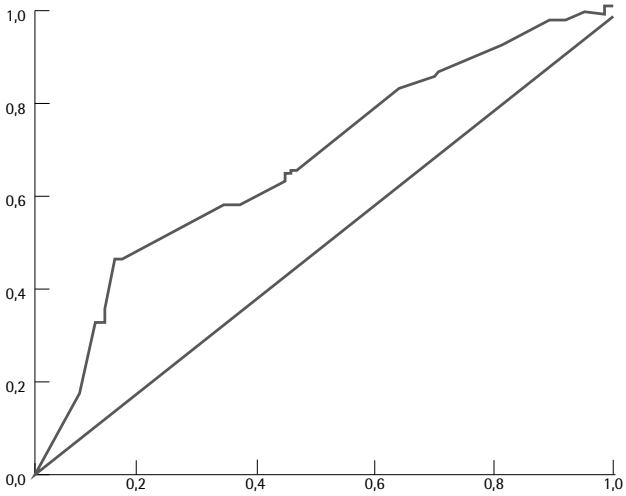
Predictor		OR (95% CI)	Wald $\chi 2$ (df)	Sig
Frequency of depressive episodes over the past twelve months	1-3 per year	0.58 (0.39; 0.86)	7.371 (1)	0.007
	4-11 per year	0.32 (0.20; 0.53)	19.506 (1)	0.000
	Min. 1x per month	0.63 (0.40; 1.00)	3.775 (1)	0.052
	Min. weekly	Reference		
N of days depressed over the past year	1 SD increase	1.63 (1.36; 1.97)	26.584 (1)	0.000
N of depressive symptoms	1 SD increase	3.81 (3.21; 4.51)	239.065 (1)	0.000
Maximum duration of depressive episodes	1-3 days	0.20 (0.13; 0.30)	51.674 (1)	0.000
	4 days	0.41 (0.25; 0.68)	12.174 (1)	0.000
	2 weeks	0.33 (0.18; 0.61)	12.475 (1)	0.000
	1 month	0.55 (0.34; 0.89)	6.897 (1)	0.015
	3 months or more	Reference		
Suffering (0-100)	1 SD increase	2.07 (1.75; 2.45)	70.638 (1)	0.000
Age at onset	1 SD increase	0.75 (0.61; 0.91)	8.669 (1)	0.003
Sex	Female	2.03 (1.48; 2.80)	18.822 (1)	0.000
	Male	Reference		
Suicidality	None	0.13 (0.09; 0.19)	118.870 (1)	0.000
	Vague	0.66 (0.45; 0.97)	4.512(1)	0.034
	Severe	Reference		
Work impairment	No	0.40 (0.28; 0.55)	29.171 (1)	0.000
	Yes	Reference		

Table 5 Results of a GEE: Multivariate associations of treatment seeking in depressed subjects

Predictor		OR (95% CI)	Wald $\chi 2$ (df)	Sig
Frequency of symptoms	1-3 per year	0,68 (0,45; 1,02)	3,531 (1)	0,060
	4-11 per year	0,66 (0,40; 1,08)	2,753 (1)	0,097
	Min. 1x per month	0,98 (0,62; 1,57)	0,006 (1)	0,940
	Min. weekly	Reference		
N of symptoms	1 SD increase	1,85 (1,39; 2,46)	17,696 (1)	0,000
Maximum duration	1-3 days	0,38 (0,23; 0,61)	16,060 (1)	0,000
	Min. 4 days	0,57 (0,34; 0,98)	4,225 (1)	0,040
	Min. 2 weeks	0,38 (0,18; 0,79)	6,772 (1)	0,009
	Min. 1 month	0,83 (0,49; 1,40)	0,503 (1)	0,478
	Min. 3 month	Reference		
Suffering (0-100)	1 SD increase	1,45 (1,20; 1,76)	14,713 (1)	0,000
Age at onset	1 SD increase	0,93 (0,78; 1,12)	0,524 (1)	0,469
Sex	Female	1,51 (1,08; 2,13)	5,690 (1)	0,017
	Male	Reference		
Suicidality	None	0,60 (0,40; 0,92)	5,542 (1)	0,019
	Vague	0,76 (0,51; 1,13)	1,855 (1)	0,173
	Severe	Reference		
Work impairment	No	0,57 (0,41; 0,80)	10,417 (1)	0,001
	Yes	Reference		

did not differ in regard to family history, age at onset and course (percentage of years with depressive symptoms). The two groups also showed almost identical treatment rates (50% vs. 48.2%), an identical proportion of years treated (medians 3.2) and comparable subjective distress/suffering (means of 76.3 vs. 75.5). Work impairment as a consequence of severity was clearly lower in the 4-day duration group (mean 44.4 vs. 34.9), as was the suicide attempt rate (26.2% vs. 7.1%).

Surprisingly also, the more sensitive GLM analyses comparing the two critical groups showed no significant



ROC curve for general distress (0-100) as discriminator between treatment use and non-use in depressive syndrome DeSY (groups 1-4). The area above the diagonal represents the discriminatory power beyond pure chance

Figure 2 | *ROC Curve*

differences in sex, age at onset, total number of days depressed over the past twelve months, number of diagnostic symptoms, distress (scale 0-100) or presence of work impairment (yes/no). Only the past-year frequency of depressive episodes showed a substantial effect, but due to small case number the associations were statistically not significant. Overall the results of the 4-day definition show a comparable validity to the 2-weeks definition, but for the definition of major depressive episodes distress and impairment would have to be included as in DSM-IV and ICD-10.

Application of the traditional 2-week diagnostic criterion for depression identified only some of the subjects treated for depression during the interview years (treatment prevalence rate 19.1%). This rate would be enhanced by broadening the duration criterion, e.g. by including depression lasting 4 or more days and even more by the inclusion of recurrent brief depression; this would identify a further 11% of treated subjects with 5+ diagnostic symptoms of depression, and increase the coverage by 50%.

Our study found a lifetime prevalence rate for treated depression of 34.1%; it should, however, be remembered that the probands were no more than 50 years old at the last interview and that with advancing age those rates can only increase. These high treatment rates far exceed the lifetime prevalence rates for *major depressive episodes* reported by the best epidemiological studies, which also included also non-treated subjects: 20% in the Nemesis study,[10] 21.9% in developed countries in the large WHO Mental Health Surveys,[11] 22.3%[12] and 24.2% in the NCS-R study based on SCID interviews.[13] On the other hand, new estimates from a prospective birth cohort study by Moffitt of very high cumulative lifetime prevalence rates of 41.4% for DSM-IV MDE (up to the age of 32 only) are compatible with our findings.[14]

As expected, treatment seeking was associated with female gender, age at onset, severity of depression measured by the number of criterial symptoms, length and frequency of episodes, suicidality, distress and work impairment. An early age at onset also correlated with delayed treatment in a study on bipolar disorders.[15] Most of these variables are dimensional and support the views of Westen et al. on a dimensional classification of mood disorders.[16]

CONCLUSION

To our knowledge, our study is the first systematically to test episode duration as a diagnostic criterion of depression. Its limitations include the relatively small sample and the restriction to an age cohort; its strength is that it is a prospective study spanning 30 years. The results evidently require replication before any changes to the current diagnostic concept which requires a minimum duration of 2 weeks for major depressive episodes can proposed. We hope to have questioned the current definition and to stimulate further research for its improvement.

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