

Recurrent Brief Depression and its Relationship to Seasonal Affective Disorder

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Summary. Recurrent brief depression (RBD) and seasonal affective disorder (SAD) have been both recently described as subgroups of major depression (DSM-III-R). We have established a relationship between these two syndromes in a cohort of 42 outpatients who presented themselves to a clinic for seasonal affective disorder at the Psychiatric Department of the University of Bonn, FRG. Our preliminary data indicate that 31% of the patients who were diagnosed as suffering from either SAD or its subsyndromal form (S-SAD) can also be categorized as RBD (RBD-seasonal) in a 1-year observation period. During the time span of 1 year RBD-seasonal patients had a mean number of 20 (SD 9) episodes compared with 6 (SD 5) episodes ($P < 0.001$) in the group of seasonal patients without BRD. These episodes were accentuated in fall/winter and outnumbered those in spring/summer significantly ($P < 0.001$). The mean duration of each episode was 4.6 (SD 2.6) days in the RBD-seasonal group and 21.8 (SD 29) in the non-RBD-seasonal group. Patients with RBD-seasonal experienced seasonal changes as more of a problem and reported a lower percentage of first-degree relatives with a history of depression than the non-RBD-seasonal group.

Key words: Recurrent brief depression – Seasonal affective disorder – Major depressive disorder – Light therapy

Introduction

Both the concept of recurrent brief depression (RBD) (Angst and Dobler-Mikola, 1985; Montgomery et al. 1989) and seasonal affective disorder (SAD) (Rosenthal et al. 1984) have been recently introduced in the literature. The symptomatology and further clinical variables of RBD have been reported to be similar to major depressive disorder with the exception of the duration of the depressive episodes. The criteria for the diagnosis of

RBD are therefore identical to those for major depression, except that duration of depressive episodes has been reduced to less than 2 weeks, the duration required for a diagnosis of major depression according to DSM-III-R (American Psychiatric Association, 1987) and Research Diagnostic Criteria (RDC, Spitzer et al. 1987). In addition, such episodes must recur monthly over a 1-year period. Seasonal affective disorder (SAD), on the other hand, consists of depression in fall and winter and remission of these symptoms or even hypomania in spring and summer (Rosenthal et al. 1984; Kasper et al. 1988). The criteria outlined by Rosenthal et al. (1984) as well as the ones included in DSM-III-R ("seasonal pattern") specify that SAD is a subgroup of major depression. In addition, there is also a subsyndromal form of SAD (Kasper et al. 1989a) with a milder symptomatology than SAD and in which the loss of energy is likely to be more prominent than depressed mood.

To date, no study has addressed the relationship between SAD and RBD. In our experience some patients with characteristic difficulties in fall/winter cannot be diagnosed as suffering from SAD, since they are not continuously symptomatic for at least 2 weeks, which is necessary for the diagnosis of major depression according to DSM-III-R. We therefore sought to find out whether there is a type of seasonal depression with a shorter duration of depressive symptomatology, comparable to RBD. In order to do so, we reexamined the actual length of depressive symptomatology on a daily basis over a 1-year period in a group of previously diagnosed patients with SAD and its subsyndromal form (S-SAD).

Material and Methods

We studied 42 patients [31 (74%) women and 11 (26%) men with a mean age (SD) of 43.2 (13.8) years] who fulfilled the criteria for SAD (DSM-III-R, "seasonal pattern", American Psychiatric Association, 1987) or S-SAD (Kasper et al. 1989a). There were 30 patients (71%) with SAD and 12 patients (29%) with S-SAD. The diagnostic distribution according to ICD-9 and DSM-III-R and further clinical and demographical variables can be derived from

Table 1. Diagnostic and psychopathological characteristics of the total group of patients with fall/winter difficulties (SAD and S-SAD) and the subgroups of patients with and without the characteristic of recurrent brief depression (RBD)

Variable	RBD-seasonal (<i>n</i> = 13)		Non-RBD- seasonal (<i>n</i> = 29)		Total group (<i>n</i> = 42)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
ICD-9						
296.1	9	69%	22	76%	31	74%
Other ^a	4	31%	7	24%	11	26%
DSM-III-R						
296.3	8	62%	22	76%	30	71%
Other ^b	5	38%	7	24%	12	29%
Unipolar	7	54%	20	69%	27	64%
Bipolar II	2	15%	2	5%	4	10%
SAD	8	62%	22	76%	30	71%
S-SAD	5	38%	7	24%	12	29%
HDRS- total score	14.6 ± 5.2		16.7 ± 6.7		16.2 ± 6.3	
HDRS- Supplement ^c	8.3 ± 4.5		7.1 ± 3.8		7.5 ± 3.9	
Hypomania ^d	2.0 ± 2.2		0.6 ± 0.7		1.2 ± 1.6	

^a 300.4, 301.1, 306.6; in the S-SAD group

^b 307.8, 311.0; in the S-SAD group

^c HDRS-Supplement (Rosenthal et al. 1987)

^d Hypomania (Kasper et al. 1989b)

ICD-9; International Classification of Disease, 9th revision (Dekwicz et al. 1980)

DSM-III-R; Diagnostic and Statistical Manual 3rd edition revised (American Psychiatric Association 1987)

RBD: Recurrent brief depression (Angst et al. 1990b)

SAD: seasonal affective disorder (Rosenthal et al. 1984)

S-SAD: subsyndromal seasonal affective disorder (Kasper et al. 1989a)

HDRS: Hamilton Rating Scale for Depression (Hamilton 1967)

Tables 1 and 3. These patients had been previously admitted (consecutively) to a specialty clinic for seasonal affective disorders (seasonality clinic) in the Psychiatric Department of the University of Bonn/FRG during a 2-year period (1988–1990). Patients had been referred from doctors in the area or had responded to newspaper articles in which the details of fall-winter depression have been described. Our sample (*n* = 42) consisted of all those subjects in our seasonality clinic who consented to participate in this specific and time-consuming reevaluation. A further 11 subjects (8 SAD and 3 S-SD) declined to participate.

When patients became symptomatic (during fall/winter 1988–1990) and presented at the seasonality clinic, we obtained the following information: DSM-III-R diagnosis (American Psychiatric Association, 1987) with and without “seasonal pattern”; ICD-9 diagnosis (Dekwicz et al. 1980); characterization of S-SAD (Kasper et al. 1989a); classification into unipolar and bipolar I and II (RDC: Spitzer et al. 1978); Hamilton Rating Scale of Depression (HRSD; Hamilton, 1963); atypical HDRS supplementary items (Rosenthal et al. 1987); Hypomania scale (Kasper et al. 1989a); family history of psychiatric illnesses (specifically for depression and alcohol/drug abuse); age of onset of SAD or S-SAD (defined as: first recognition of fall/winter symptomatology comparable to that for which they sought treatment in our seasonality clinic); duration of illness (time after age of onset of SAD or S-SAD until time of first contact with us for treatment of SAD or S-SAD); prophylactic treatment with antidepressants or lithium or carbamazepine; and history of thyroid abnormalities (either having a goiter or a history of present or past thyroxin replacement).

Furthermore, we also obtained a distinct assessment of their history of seasonal difficulties as can be derived from the Seasonal Pattern Assessment Questionnaire (SPAQ; Rosenthal et al. 1987; German version: SPAQ-D; Kasper 1991) and the Seasonality Screening Questionnaire (SSQ; Rosenthal et al., in press; German version: SSF, Saisonalitätsfragebogen, Kasper, unpublished).

In order to evaluate the relationship between the existing diagnosis (SAD or S-SAD) of these patients and recurrent brief depression (RBD), we retrospectively studied the duration of the depressive symptomatology which they experienced on a daily basis during 1 year. Patients were asked to rate their depressive symptomatology which should be equivalent to the one for which they presented for treatment in the seasonality clinic. The reevaluation for the whole sample took place in June 1991 and patients were instructed to rate their depressive symptomatology for the whole past year (June 1990–May 1991). The month June was chosen as the time for reevaluation, because we expected that patients would have remitted by then and we did not want the negative self-evaluation of a depressed mood to be a confounding variable. We used two different scales: 1) Daily assessment: in this scale, patients had to identify each day of the past year in which they experienced symptoms equivalent to the ones for which they had sought treatment during the past 2 years in our seasonality clinic, 2) Categorical approach: since patients sometimes claim that they do not remember exactly how they felt in the past year on a daily basis, we also asked them to rate the length and frequency of their symptoms within each season according to a scale in which they had the possibility to choose between the categories: 1–3 days, 1 week, 2 weeks, 3 weeks, 1 month, 2 months, and 3 months.

To determine the frequency of RBD in our total sample we used modified criteria of the ones developed by Angst et al. (1990b). These criteria were modified in so far as episodes had to recur monthly over a period in fall/winter and not over a 1-year periode as would be the case for RBD without a seasonal pattern. The criteria for the seasonal type (fall/winter) of RBD (RBD-seasonal) were therefore standardized as follows:

- 1) Diagnostic criteria for major depression (DSM-III-R) concerning mood and number of symptoms which represent a change of previous functioning
- 2) Duration of depression episodes less than 2 weeks
- 3) At least 1–2 episodes per month in fall/winter
- 4) Full remission in spring/summer, or depressive episodes in fall/winter should substantially outnumber the ones in spring/summer

In order to characterize the patients with RBD-seasonal, we compared their diagnostic, clinical, demographic and seasonal profile with a group of patients of the total sample who did not fulfill the criteria of RBD.

Six patients with RBD-seasonal (5 SAD and 1 S-SAD; mean age 43.3, SD 6.5 years) participated in a controlled trial of light therapy with full spectrum bright light (3000 Lux) or dim light (100 Lux) which was conducted in a balanced randomized cross-over fashion (1 week each condition without wash-out period between these two treatment conditions, 2 h of light therapy daily, either in the morning or evening hours). During light therapy, patients were assessed by blind raters by means of the HRSD as well as with other rating instruments which are commonly used in light therapy studies (Kasper 1991), such as the Supplement scale and the Hypomania scale.

Statistical comparisons (two-tailed) were performed with *t*-tests (SPSS/PC+), and the log likelihood ratio test (G-test) of Woolf including Yates correction (Lienert 1986).

Results

During the assessment period of 1 year, there were 13 patients (31% of the total sample) with a duration of depressive episodes shorter than 14 days (RBD-seasonal) and 29 patients with a duration of depressive episodes

Table 2. Demographic and clinical characteristics of the total group of patients with fall/winter difficulties (SAD and S-SAD) and the subgroups of patients with and without the characteristic of recurrent brief depression (RBD)

Variable	Seasonal-RBD (<i>n</i> = 13)		Non-RBD-seasonal (<i>n</i> = 29)		Total group (<i>n</i> = 42)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Age (years)	44.5 ± 12.6		42.6 ± 14.4		43.2 ± 13.8	
Gender						
Male	9	69%	22	76%	31	74%
Female	4	31%	7	24%	11	26%
Age of onset	32.0 ± 9.9		30.8 ± 11.8		31.0 ± 11.3	
Duration of illness (years)	12.6 ± 8.8		11.9 ± 13.3		12.3 ± 12.4	
Family history (first degree)						
Depression ^a	1	8%	13	45%	14	33%
Alcohol/drugs	2	15%	2	7%	4	10%
Prophylactic treatment ^b	0	0%	5	17%	5	12%
Thyroid abnormality	4	31%	10	34%	14	33%

Further descriptions of the variables see text (Methods section)

SAD: seasonal affective disorder (Rosenthal et al. 1984)

S-SAD: subsyndromal seasonal affective disorder (Kasper et al. 1989a)

RBD: recurrent brief depression (Angst et al. 1990b)

^a Significant ($P < 0.05$) differences between RBD-seasonal and non-RBD-seasonal

^b Tendency ($P < 0.1$) between RBD-seasonal and non-RBD-seasonal

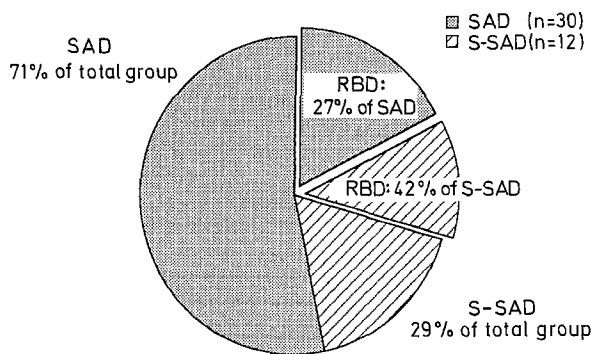


Fig. 1. Quantitative relationship between recurrent brief depression (RBD: Angst and Dobler-Mikola 1985; Montgomery et al. 1989) and seasonal affective disorder (SAD: Rosenthal et al. 1984) and its subsyndromal form (S-SAD: Kasper et al. 1989a)

longer than or equal to 14 days (non-RBD-seasonal), respectively. During the time span of 1 year, RBD-seasonal patients had a mean number (SD) of 20.2 (9.6) episodes compared with 6.1 (4.7) episodes in the non-RBD-seasonal group ($t = 5.03$, $df = 14.63$, $P < 0.001$). The mean duration (days) of each episode (SD) was 4.6 (2.6) days in the RBD-seasonal group and 21.8 (29) days in the non-RBD-seasonal group, respectively ($t = 4.49$, $df = 28.06$, $P < 0.001$). The two groups (RBD-seasonal and non-RBD-seasonal) could also be differentiated significantly with the categorical approach, which revealed 15.0 (SD 6) episodes of either 1–3-days or 1-week duration in the RBD-seasonal group and 1.2 (SD 2.7) episodes for these time categories in the non-seasonal group ($t = 7.94$, $df = 14.2$, $P < 0.001$). As can be derived from Fig. 2, there were also a few episodes in spring and summer in the group of RBD-seasonal patients, but the total number of episodes in fall/winter outnumbered the ones in spring/summer significantly ($t = 5.04$, $df = 12$, $P < 0.001$).

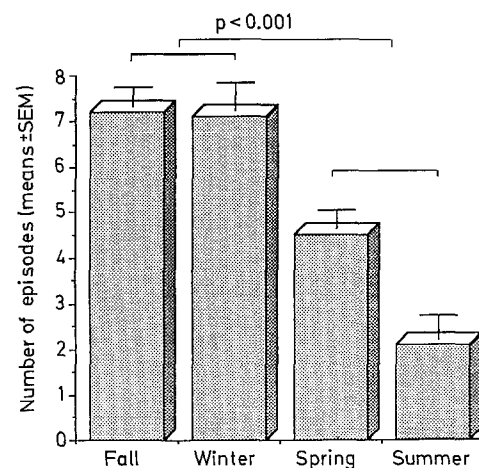


Fig. 2. Number of episodes in each season of the year for patients ($n = 12$) with a seasonal type of recurrent brief depression (RBD)

Eight patients (62%) of the RBD-seasonal group and 22 patients (76%) of the non-RBD-seasonal group were diagnosed as suffering from SAD and the numbers for S-SAD were 5 (38%) and 7 (24%), respectively (see also Table 1). Twenty-seven percent of SAD patients ($n = 8$) and 42% of S-SAD patients ($n = 5$) were classified as falling in the group of patients with RBD-seasonal (see also Fig. 1).

Figure 3 depicts the monthly distribution of the characteristic “feeling worst/feeling best” (derived from questions 13A and 13H of the SPAQ) in the group of patients with and without RBD-seasonal. The profile in both groups exhibits an onset of “feeling worst” in October, an accentuation in November, December and January, and an offset of “feeling worst” in March. However, it is apparent that patients with RBD-seasonal had their worst months in November and December and tended to feel better by January and February, which

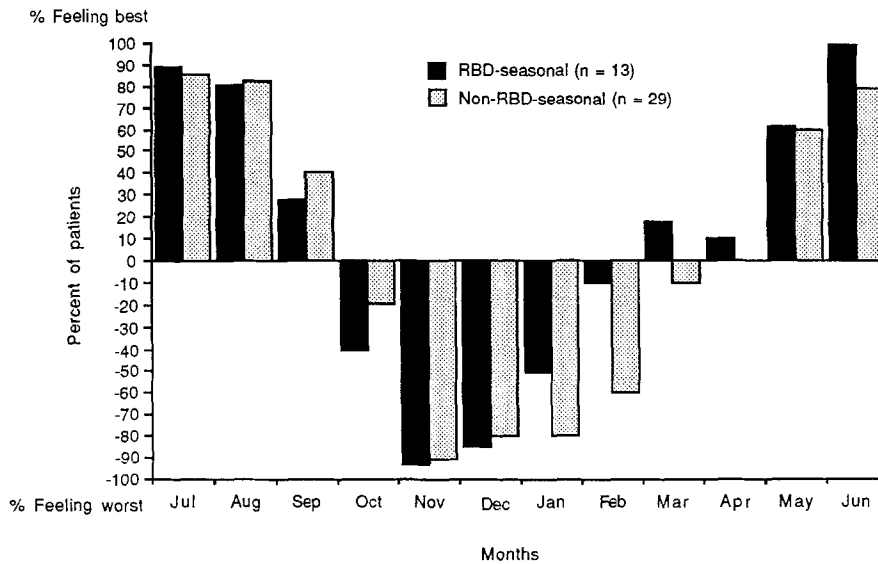


Fig. 3. Percentage of patients who report “feeling worst” or “feeling best” per month. Question 13A and 13H of the Seasonal Pattern Assessment Questionnaire (SPAQ, Rosenthal et al. 1987)

Table 3. Seasonal characteristics of the total group of patients with fall/winter difficulties (SAD and S-SAD) and the subgroups of patients with and without the characteristic of recurrent brief depression (RBD)

SPAQ-Items	Seasonal-RBD (n = 13)	Non-RBD-seasonal (n = 29)	Total group (n = 42)
Change with the seasons in (SPAQ item 12)			
Social activity	2.2 ± 1.0	2.5 ± 1.2	2.4 ± 1.1
Mood	3.1 ± 0.5	3.0 ± 0.8	3.0 ± 0.7
Weight	1.3 ± 1.0	1.6 ± 1.1	1.5 ± 1.1
Sleep length	2.5 ± 0.8	2.1 ± 1.0	2.3 ± 1.0
Appetite	2.1 ± 0.8	1.7 ± 1.2	1.8 ± 1.1
Energy	3.4 ± 0.5	3.1 ± 0.8	3.2 ± 0.7
Sum (seasonality score)	14.5 ± 2.9	14.0 ± 4.7	14.1 ± 4.2
Absolute changes of sleep length (h) (SPAQ item 16)			
Fall	9.0 ± 0.4	8.0 ± 0.3	8.3 ± 1.5
Winter	9.2 ± 0.5	8.4 ± 0.3	8.6 ± 1.6
Spring ^a	8.0 ± 0.3	7.3 ± 0.2	7.5 ± 0.9
Summer	7.2 ± 0.3	6.9 ± 0.2	7.0 ± 0.9
Total ^a	8.3 ± 1.5	7.6 ± 1.3	7.9 ± 1.4
Absolute changes in body weight (kg) (SPAQ item 15)			
	1.7 ± 0.3	1.8 ± 0.2	1.8 ± 0.8
Changes with the seasons are a problem (SPAQ item 18)			
Mild or moderate	0%	38%	25%
Marked ^b	64%	25%	37%
Severe or disabling ^b	36%	37%	38%

SPAQ: Seasonality Pattern Assessment Questionnaire (SPAQ, Rosenthal et al. 1987)

RBD: Recurrent brief depression (Angst et al. 1990b)

^a Significant ($P < 0.05$) differences between RBD-seasonal and non-RBD-seasonal

^b Significant ($P < 0.01$) differences between RBD-seasonal and non-RBD-seasonal (marked, severe or disabling)

were both rated by a higher percentage as “feeling worst” in the non-RBD-seasonal group. It is also evident from Fig. 2 that early spring months were not rated as the best ones by most of the patients, compared with the summer months which were mostly experienced as the best ones.

Although the seasonality score (summary of the items of question number 12 of the SPAQ, see also Kasper et al. 1989c) was not different between the two groupings of RBD patients (seasonal and non-seasonal, 14.5, SD 2.9 and 14.0, SD 4.7; $t = 0.36$, $df = 33$, $P = 0.7$), it was also apparent that the RBD-seasonal group of patients

experiences the changes with the seasons significantly more ($G = 7.09$, $df = 1$, $P < 0.01$) as a marked, severe or disabling problem than the non-RBD-seasonal group (see Table 2, question number 18 of the SPAQ). There were no differences between the two groups with regard to their sensitivity to weather variables. Both groups noted that they felt worse on short, gray-cloudy, and humid days and that they felt better on long, sunny, and dry days. Furthermore, seasonal weight changes were not different between the two groups. The absolute duration of sleep length as rated by item 16 of the SPAQ was markedly longer during fall and winter in both groups. But, in comparison, RBD-seasonal patients slept significantly longer when all seasons were taken together (8.3, SD 1.5 versus 7.6, SD 1.3; $t = 2.81$, $df = 113$, $P < 0.01$), especially in spring (8.0, SD 0.9 versus 7.3, SD 0.75 h; $t = 2.44$, $df = 33$, $P \leq 0.02$) (see also Table 3).

Clinical and demographic characteristics were not different in the patients with and without RBD-seasonal, except for family history of depression and a previous history of prophylactic treatment. Patients with RBD-seasonal reported a significantly lower percentage ($G = 4.5$, $df = 1$, $P < 0.05$) of depression (8%) in their first-degree relatives compared with the non-RBD-seasonal group (45%). Whereas no patient of the RBD-seasonal group had previously received prophylactic treatment with antidepressants, lithium or carbamazepine, there was a tendency for patients (5 patients, 17%) in the non-seasonal group to have received such treatment ($G = 2.78$, $df = 1$, $P < 0.1$).

Six patients with the diagnosis of RBD-seasonal participated in the light therapy protocol. After 1 week of treatment with bright light, there was a 47% mean reduction in HDRS scores and an 87% mean reduction in HDRS-Supplement scores. The corresponding numbers for the dim-light condition were -1% and -18%, respectively.

Discussion

Our data indicate that there is a sizable subgroup of patients with diagnosed fall/winter difficulties, e.g. SAD or its subsyndromal form, who can be characterized as suffering from a seasonal type of RBD. Since we studied only a small number of patients retrospectively, our data have to be considered as preliminary and exploratory. Nevertheless, they may help researchers to understand better the fluctuations of depressive symptomatology in relation to seasonal variables and to establish specific treatment strategies for patients with and without a RBD type of fall/winter depression.

The duration of the depressive episodes reported by patients is influenced by numerous factors. Among them, memory and retrospective misinterpretation is an often discussed problem in studies trying to evaluate the lifetime prevalence of depression (Parker 1987) and also in research dealing with RBD (Angst and Dobler-Mikola 1985; Angst 1990a; Montgomery et al. 1989; Montgomery 1991). This is true, for instance, if age of onset is evaluated by retrospective studies, because patients tend to forget or distort early episodes. However, there are

more accurate data for short-term occurrences, like the ones obtained in our sample in which the evaluation time covered the past year. This assumption is supported by the data of Schrader et al. (1990) who found that in the short term patients have a tendency to remember severe symptoms more accurately than mild symptoms. Since our retrospective evaluation covered just the past year, we cannot comment as to whether the characteristic of RBD is stable or not over a longer period than 1 year. In order to control for the bias of retrospective evaluation, it is necessary to replicate the results of our study using a prospective design. However, there was a large difference in the number of episodes as well as in the daily length of the episodes between the patients with and without RBD-seasonal. It therefore seems likely that the bias of retrospective evaluation might have affected the exact number of RBD of our patient sample but not the fact that RBD-seasonal patients exist.

The mean duration of RBD episodes of 4.9 days in our sample is comparable to those reported by Angst and Dobler-Mikola (1985) and Montgomery et al. (1989). Both studies reported that a brief depressive episode lasts between 2 and 4 days. The intervals between and the periodicity of RBD episodes was irregular in our study. Since it was one of the aims of our study to compare our findings with those of previous studies, we required as an inclusion criterion that RBD episodes had to recur at least once or twice per month over fall/winter. However, this criterion needs to be considered with caution since the symptomatology of SAD or its subsyndromal form seems to be influenced by various factors such as ambient light or the coping style of the patients which might be itself related to specific personality variables.

There was no difference in severity of depression between the seasonal patients with and without RBD. During the time of their depression, both groups were rated as mildly depressed, according to the total score of HDRS, which seems to be a characteristic for SAD (Kasper 1991) but not for RBD (Angst et al. 1990b; Montgomery 1991). Although there was no difference according to the objective measurement of severity of depression between the patients with or without RBD, there was a difference according to the degree of severity with which they experienced the changes with the seasons. It was apparent that patients with RBD-seasonal experienced these changes to a higher degree. One explanation could be that this different judgement is based on the repeated experience of changes from a healthy state to depression within a short time period. This interpretation is supported by the assumption that the healthy state is set as reference stimulus after each remission of depression. Furthermore, this distinct perception might also be indicative of a different underlying pathophysiology between these two groups. This notion is supported for instance by the finding that differences in the perception of pain are reported between groups of depressed patients which are reflected in a specific psychophysiological pattern using the augmenting/reducing paradigm of evoked potentials (Buchsbaum et al. 1980).

The course of the symptomatology of the total group shows an onset in October and a peak in November/December in the RBD-seasonal group and in November/December/January/February in the non-RBD-seasonal group. This distribution indicates that patients with RBD-seasonal specifically seek treatment in November and December, a time when there is also the shortest photoperiod. This pattern might further indicate that patients with RBD-seasonal are especially susceptible to environmental light since the increase in photoperiod is associated with an amelioration of their symptomatology. However, compared with studies conducted in North America (Kasper et al. 1989b), it is apparent that the peak of feeling worst is shifted from January/February to November/December. Since most studies of SAD have been carried out in Washington DC (39°N north of the equator), it might well be that the latitude of the area in which this study was conducted (Bonn, 50° north of the equator) might have influenced the results in the above-mentioned direction.

There seems to be an inconsistency in our results, since 8 SAD patients have been categorized as suffering from RBD-seasonal, e.g. experiencing a duration of depressive episodes shorter than 2 weeks, and since a longer period than two weeks is necessary for the diagnosis of major depression with a "seasonal pattern" (= SAD according to DSM-III-R). This discrepancy can be explained by the fact that we established the diagnosis of SAD not only on the actual length of symptomatology but also on the basis of retrospective evaluation and that most patients did not specify the exact length of the days in which they felt depressed and were more prone to say that they experienced discomfort for the whole time of fall/winter. The tendency of the patients may have been supported by our evaluation style which did not specifically focus on the exact number of days and also not on whether there were intervals of remission when they were depressed or not. For the detection of RBD, it therefore seems necessary to ask specifically for the length and duration of each depressive episode within each season which is at present not part of systematic interview guides such as SCID (Spitzer et al., unpublished) or SADS (Endicott and Spitzer 1978).

All of our patients with SAD or its subsyndromal form fulfilled the DSM-III-R criterion of a 3:1 ratio between seasonal and nonseasonal episodes. There was a subgroup of our patients with SAD or its subsyndromal form who had depressive episodes in spring/summer too, but the number of these episodes was significantly smaller in these two seasons and therefore substantially outnumbered by the episodes in fall/winter. Previous literature of SAD does not specifically indicate how patients felt in spring/summer and may have therefore overlooked the fact that patients are also symptomatic in this time of the year when there are, for instance, gray and cloudy days, especially for an extended period. It might well be that periods with this characteristic can even in summer trigger depressive symptomatology in vulnerable individuals. The dependence of changes in mood and behavior on these environmental parameters in patients with fall/winter difficulties is compatible with the

notion that seasonality is a marker of vulnerability which is uncovered if these individuals are placed in an environment with light deficiency (Kasper et al. 1989a).

We found that patients with RBD-seasonal had a lower percentage of first-degree relatives suffering from depression compared with the patients without RBD-seasonal. Previous studies of RBD (non-seasonal) detected no differences in the rates of a positive family history between patients with and without RBD (Angst et al. 1990b). On the other hand, for patients with SAD there have been higher rates of a positive family history reported than for non-seasonal depressives (Kasper and Kamo 1990). We can confirm this observation in the total group of 42 seasonal patients of the present investigation. It would therefore be worthwhile to examine this relationship in a larger sample, because, together with the RBD pattern itself, this could indicate the RBD-seasonal might have a different etiology than the non-RBD seasonal form.

As regards treatment, it is apparent that these patients are not likely to receive prophylactic treatment. A reason for this might be that their difficulty is not considered severe enough, since the patients remit on a regular basis. Nevertheless, the number of phases indicate that a specific treatment strategy has to be found. We do not know if light therapy itself was especially beneficial for patients with RBD-seasonal, since they experienced a mean duration of 4.9 days of depressive symptomatology. It could have been that the symptomatology would have been remitted by the time of the scheduled light therapy of 1 week. However, this explanation seems to be unlikely, since there was no such response with the dim-light condition.

In summary, our data may have implications on how patients with fall-winter difficulties (SAD and its subsyndromal form) are diagnosed, rated, and treated. The introduction of the diagnosis of RBD-seasonal indicates that there is a subgroup of patients suffering from a distinct disorder and not just from mild mood swings just because the duration is shorter. The type of ratings in RBD-seasonal should take into account that the evaluation period usually does not exceed 3 days. There is no adequate treatment as yet for RBD (Montgomery 1991). Light therapy might be an appropriate treatment for RBD-seasonal if our observations are confirmed in future studies taking into account the problem of differentiation between spontaneous remission and treatment effect. Nevertheless, since light therapy does not work in all SAD patients and since it is not accepted by all patients with fall/winter difficulties, for instance, owing to the time required, it is necessary to initiate therapy protocols with different kinds of treatments which have been effective in major depression.

References

- American Psychiatric Association (1987) *Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R)* (3rd edn. revised) Washington, DC, American Psychiatric Association
- Angst J (1990a) Recurrent brief depression: A new concept of depression. *Pharmacopsychiatry* 23:63–66

- Angst J, Dobler-Mikola A (1985) The Zürich Study: A prospective epidemiological study of depressive, neurotic and psychosomatic syndromes. IV. Recurrent and nonrecurrent brief depression. *Eur Arch Psychiatr Neurol Sci* 234:408–416
- Angst J, Vollrath M, Koch R (1988) New aspects on epidemiology of depression. In: Angst J, Woggon B (eds) *Lofepamine in the treatment of depressive disorders*, pp 1–14, Braunschweig Vieweg
- Angst J, Merinkangas K, Scheidegger P (1990b) Recurrent brief depression: A new subtype of affective disorder. *J Affect Dis* 19:87–98
- Buchsbaum MS, Davis GC, Goodwin FK, Murphy DL, Post RM (1980) Psychophysical pain judgements and somatosensory evoked potentials in patients with affective illness and normal adults. *Adv Biol Psychiat* 4:63–72
- Degkwitz R, Helmchen H, Kockott G, Mombour W (1980) *International classification of Diseases*, 9th rev. Springer, Berlin Heidelberg New York
- Endicott J, Spitzer RL (1978) A diagnostic interview: the schedule for affective disorders and schizophrenia. *Arch Gen Psychiatry* 35:837–844
- Hamilton M (1967) Development of a rating scale for primary depressive illness. *Br J Social Clin Psychol* 6:278–296
- Kasper S (1991) *Jahreszeit und Befindlichkeit in der Allgemeinbevölkerung*. Springer, Berlin Heidelberg New York
- Kasper S, Kamo T (1990) Seasonality in major depressed inpatients. *J Affective Disord* 19:243–248
- Kasper S, Rogers SLB, Yancey A, Schulz PM, Skwerer RG, Rosenthal NE (1989a) Phototherapy in individuals with and without subsyndromal seasonal affective disorder. *Arch Gen Psychiatry* 46:837–844
- Kasper S, Rogers SLB, Yancey A, Skwerer RG, Schulz PM, Rosenthal NE (1989b) Psychological effects of light therapy in normals. Guilford Press, New York, NY, pp 260–270
- Kasper S, Wehr TA, Bartko JJ, Gaist PA, Rosenthal NE (1989c) Epidemiological findings of seasonal changes in mood and behavior. *Arch Gen Psychiatry* 46:823–833
- Lienert GA (1986) *Verteilungsfreie Methoden in der Biostatistik*. Bd. 1, 3. Aufl. Hain, Meisenheim am Glan
- Montgomery SA (1991) Recurrent brief depression. In: Feighner JP, Boyer WF: *Perspectives in psychiatry volume 2. Diagnosis of depression*. John Wiley & Sons, Chichester New York Brisbane Toronto Singapore, pp 119–134
- Montgomery SA, Roy D, Montgomery DB (1983) The prevention of recurrent suicidal acts. *Br J Clin Pharmacol* 15:1835–1885
- Montgomery SA, Montgomery D, Baldwin D, Green M (1989) Intermittent 3-day depressions and suicidal behaviour. *Neuropsychobiology* 22:128–134
- Montgomery SA, Montgomery D, Baldwin D, Green M (1990) The duration, nature and recurrence rate of brief depressions. *Neuro-psychopharmacol Biol Psychiatry* 14:729–735
- Parker G (1987) Are the lifetime prevalence estimates in the ECA study accurate. *Psychol Med* 17:275–282
- Rosenthal NE, Sack DA, Gillin JC, Lewy AJ, Goodwin FK, Davenport Y, Mueller PS, Wehr TA (1984) Seasonal affective disorder, a description of the syndrome and preliminary findings with light therapy. *Arch Gen Psychiatry* 41:72–80
- Rosenthal NE, Genhardt M, Sack DA, Skwerer RG, Wehr TA (1987) Seasonal affective disorder: relevance for treatment and research of bulimia. In: Hudson JI, Poe HG (eds) *Psychobiology of Bulimia*. APA, Washington DC, pp 203–228
- Schrader G, Davis A, Stefanovic S, Christie P (1990) The recollection of affect. *Psychol Med* 20:105–109
- Spitzer RL, Endicott J, Robins E (1978) Research diagnostic criteria: Rationale and reliability. *Arch Gen Psychiatry* 35:773–785