Perceived criticism in schizophrenia: A comparison of instruments for the assessment of the patients’ perspective and its relation to relatives’ EE

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Abstract

The expression and perception of expressed emotion (EE) in schizophrenic patients and their relatives are likely to differ. The present explorative study compares the two views. EE in relatives of 25 chronic schizophrenic patients was assessed using the extended version of the Five Minute Speech Sample (FMSS). Patients rated their relatives with the Perceived Criticism Scale (PCS), the Family Emotional Involvement and Criticism Scale (FEICS), and a German questionnaire on family atmosphere (FEF). Relatives were rated high in EE in 48% due to criticism in all cases but one. Patients’ assessments of the whole family on the FEICS and FEF criticism subscales were related to their relatives’ EE status. Correlations between the self-rating instruments were moderate to good. As the patients’ and the relatives’ views correspond with regard to the criticism domain, the application of a self-rating instrument may be a simple and useful tool for clinical and research purposes.

Keywords: Expressed emotion; EE; Patient perception; Self-rating instruments; Comparison

1. Introduction

Expressed emotion (EE) in key relatives and significant others has repeatedly been demonstrated to represent a reliable predictor of relapse in a variety of psychiatric disorders (Butzlaff and Hooley, 1998). EE is rated based on the exhibition of critical comments and emotional over-involvement and can be assessed, for example, via the Camberwell Family Interview (CFI) or the Five Minute Speech Sample (FMSS). Less attention has been devoted to the relationship between the presence of high EE in relatives and the perception of the respective psychiatric patient towards whom criticism and over-involvement are directed (Baker et al., 1987; Hooley and Teasdale, 1989; Lebell et al., 1993; Scott et al., 1993; Okasha et al., 1994; Tompson et al., 1995; Chambless and Steketee, 1999).

In schizophrenia, perceived criticism (PC) has been shown to be predictive of relapse after discharge from hospital treatment over a period of 9 months to 2 years (Baker et al., 1987; Tompson et al., 1995; Scott et al., 1993). However, Tompson et al. (1995) found hardly any correspondence between the relatives’ and the patients’ view—the patients’ perception even proved...
to be a better predictor of relapse than that of the relatives. In depression as well as in obsessive compulsive disorder and agoraphobia, small to moderate correlations between PC and EE-related criticism were reported by Hooley and Teasdale (1989) and Chambless et al. (1999). Hooley and Teasdale (1989) stated that “Given the importance of criticism to the EE construct and the empirical evidence suggesting that patients are indeed the target of relatives’ criticism, it is perhaps surprising that [few studies have] . . . sought to obtain data directly from patients themselves concerning their perceptions of criticism from family members.”

The aims of the present study were a comparison of different instruments for the assessment of PC and an examination of the relationship between EE indices in relatives of schizophrenic or schizoaffective patients and the respective patients’ perception of their relatives’ attitude in a German sample.

For this purpose, patients’ PC was measured via the Perceived Criticism Scale (PCS), the Family Emotional Involvement and Criticism Scale (FEICS), and a questionnaire on family atmosphere (FEF = Fragebogen zur Erfassung der Familienatmosphäre). These scales are conceptually related to the EE construct, according to the above mentioned notion that criticism is the most important element of the EE index (Tompson et al., 1995; Hooley and Teasdale, 1989). Methodologically, the study aimed to compare different instruments for the assessment of patients’ perception and their correspondence with the FMSS which was administered to relatives. To date, the respective instruments – except the FMSS – have only been validated against observer-based ratings but have not been compared to one another. Two versions of each of the above mentioned instruments were included in the analysis. In one version, the patient was asked to comment on the key relative only, in the other version on the whole family.

Patients and their relatives were studied separately; the relatives’ EE index was assessed via FMSS. In most Western societies the criticism component of the relatives’ EE is more important than the component of emotional over-involvement (Hooley and Teasdale, 1989; Tanaka et al., 1995; Butzlaff and Hooley, 1998; Shimodera et al., 1999) and can therefore be assumed to play the more prominent role for comparison with the patients’ view.

This explorative study aimed to clarify three issues.

(1) To what extent is there a congruence between the instruments PCS, FEICS, and FEF? Do the versions concerning the key relative and the whole family differ?

(2) Does the patients’ perception of their relatives – assessed via PCS, FEICS, and FEF – correspond to their relatives’ EE as assessed via FMSS? Is there a difference in perception of the key relative and the family as a whole?

(3) Do patients with high EE relatives differ from those with low EE relatives regarding sociodemographic and/or psychopathological data?

2. Methods

2.1. Subjects

A total of 25 patients with diagnoses of schizophrenia or schizoaffective disorder according to DSM-IV (APA, 1994) and their respective family members were consecutively recruited. Inclusion criteria were the above indicated diagnoses and accessibility and willingness of a key relative to participate. Exclusion criteria were substance abuse and serious physical disease or history thereof. Patients had been hospitalized for an acute episode of a chronic or relapsing disorder but were already in remission at the time of assessment. The sample comprised 14 subjects (56%) with diagnoses of schizophrenia and 11 subjects (44%) with diagnoses of schizoaffective disorder. Thirteen (52%) were men and 12 (48%) women; patients’ mean age was 39.9 years (±15.0). Fourteen (56%) patients were single, 8 (32%) were married or lived with a partner, one was divorced and 2 were widows. However, marital status was not equally distributed between diagnostic groups: whereas 6 of the schizoaffective patients were married, only one schizophrenic patients was. Ten patients (40%) had 1 to 5 children. Two patients (8%) did not convey complete information regarding their socioeconomic status, the remaining 92% had at least completed regular and for the major part (62%) even complementary education. Thirteen subjects were either in vocational training, housewives or in employment, 2 were retired, 9 were unemployed and one subject did not disclose her status. The sample of relatives was composed of 8 mothers, 4 fathers, 7 spouses, 3 offspring, 2 siblings, and one guardian. The study was performed at the Psychiatric Hospital of the University of Heidelberg and approved by the local ethics committee, informed consent was obtained from all study participants.

2.2. Assessment procedures

Patients underwent an interview for the Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987) and completed a questionnaire on their socioeconomic status. The patients’ perception of their relatives’ atti-
tudes was examined by the use of three self-rating instruments all of which are based on the EE construct of criticism and emotional involvement: the Perceived Criticism Scale (PCS) (Hooley and Teasdale, 1989), the Family Emotional Involvement and Criticism Scale (FEICS) (Shields et al., 1992), German version by Kronmüller et al. (2001), and the “Fragebogen zur Erfassung der Familienatmosphäre” (FEICS; a questionnaire on family atmosphere) (Feldmann et al., 1995).

The FEICS comprises 14 items which are rated on a 10-point Likert-type scale and anchored with the values “not at all critical” and “very critical indeed.” Predictive as well as concurrent validity of the PCS are high as was shown for different samples (Hooley and Teasdale, 1989; White et al., 1998). The FEICS comprises 14 items which are rated “almost always” to “almost never” on a 5-point Likert-type scale. Items are equally distributed among two subscales, namely Perceived Criticism (PC) and Emotional Involvement (EI). Following brief instruction, statements such as “he/she knows what I am feeling most of the time” (emotional involvement), “he/she is always trying to get me to change” (criticism) are displayed for rating. Scores for each subscale are determined separately. The internal consistency amounts to $x=0.82$ for PC and to $x=0.74$ for EI. In their validation study, Shields et al. (1992) had correlated the FEICS subscales with subscales from other instruments measuring family climate (construct validity $r=0.25$ to 0.59) as well as with the depression and anxiety subscales of the SCL-90 (criterion validity, $r=0.22$ to 0.43). The FEICS comprises one item concerning contact with the relative which – in addition to the dimensions critique (10 items), resignation (8 items), and overprotection (8 items) – also comprises one item concerning contact with the relatives. Following brief instruction, patients were asked to respond to statements such as “he/she takes over important decisions for me” (overprotection), “he/she is not interested in how I am doing” (resignation), “he/she rebukes me a lot” (critique) with respect to the one relative with whom they spend the most amount of time. In the original version, items were rated dichotomously (“true”/“not true”). For reasons of comparison, we adjusted ratings to the FEICS-style using a 5-point Likert-type scale ranging from “does not apply at all” to “very true”. Scores were summed up for each subscale separately.

According to Feldmann et al. (1995), the reliability of the FEF amounts to $x=0.69$; its validity is low in terms of the construct as validated against a self-rating instrument for relatives ($r=0.10$ to $r=0.36$); in terms of the criteria, however, validity is sufficient with correlations between FEF and symptomatology, medication, and relapse rate of $r=0.61$ to $r=0.80$. In our study both, FEICS and FEF were administered twice, once with the instruction to rate the interviewed key relative only and once as an extended version with respect to the whole family. In the extended version the “he/she...” was replaced by “my family...”.

Relatives’ EE was assessed using the Five Minute Speech Sample (FMSS) (Magana et al., 1986) under consideration of the criterion of “covert criticism” (Leeb et al., 1991, 1993). Two EE indices were determined for each relative, leading to a score 1 (based on established criticism criteria, excluding covert criticism) and a score 2 (based on novel criticism criteria, including covert criticism). We used the German version (Leeb et al., 1991, 1993) of the FMSS. Its characteristics and the changes which were brought about by the introduction of the new criterion “covert criticism” with respect to schizophrenia patients are described elsewhere (Bottmer, 1999; Bachmann et al., 2002). All FMSS interviews were performed by trained interviewers as part of family sessions with the patients and their relatives. External influences were minimized by performing the interview prior to the family session. If more than one relative participated, each person was interviewed separately. Instructions were given (see above) and after clarification of possible questions, the 5-min monologue was not interrupted. Occurrence of nonverbal expressions (e.g. tears) was noted. If more than one interview was obtained per patient, the rating with the highest EE status entered further analysis; if equal ratings were obtained for both interviews, as was the case for 8 patients, the mother’s score entered further analysis based on the notions that one relative suffices to predict relapse and that mothers usually spend more time with their children (Brown et al., 1972; Lebell et al., 1990). The audiotaped interviews were rated by formally trained raters who reached an interrater-reliability of $0.74<K<1.00$ which is within the desirable range according to Fleiss (1981).

### 2.3. Statistical analysis

Due to the explorative character of the study, a set of meaningful comparisons was calculated without performing Bonferroni corrections.

The different self-rating instruments for patients and the respective subscales were compared by calculating Pearson correlations. The comparison of these instruments to the relatives’ EE indices was performed...
with Spearman correlations because EE status is assessed on a dichotomous scale. Further analyses of EE status with respect to the patients’ ratings was performed with the Mann–Whitney U test because EE status was not normally distributed. Also, relatives’ EE status was analyzed with respect to patients’ clinical and sociodemographic data by calculating chi-square tests. All analyses were performed with SPSS 7.5 for Windows.

3. Results

3.1. Patients’ symptomatology

Patients’ total PANSS score amounted to 72.4 ± 20.6. The PANSS positive subscale (15.1 ± 5.5) contributed less to the overall score than the negative (20.5 ± 7.5) and the general psychopathology subscales (36.8 ± 10.0), which is consistent with their inpatient status on a rehabilitation ward.

3.2. Amount of contact between patients and relatives

The rating to the amount of contact between patients and their relatives is the last item of the FEF. It appeared to be high with 48% (56%) of all patients who saw their key relative (someone from the family) “often” or “almost always” every day. Only 8% (12%) of patients met the key relative (someone from the family) “almost always” on an irregular basis.

3.3. Patients with high and low EE relatives

Patients’ sociodemographic variables – namely age, gender, socioeconomic and employment status – did not account for differences in relatives’ EE status as assessed via score 1 and 2; neither did the level of symptomatology as assessed via PANSS including the subscales positive, negative, and global symptoms. However, diagnosis was associated with the relatives’ EE status according to score 1. In the schizoaffective group, 10 out of 11 relatives were rated low EE, whereas high and low EE relatives were equally distributed among the 14 schizophrenia patients — this difference was significant (P < 0.05) but did not hold up after the introduction of “covert criticism” (score 2).

3.4. Correspondence of self-rating instruments for patients

The self-rating instruments applied in this study – PCS, FEICS, and FEF – assess perceived criticism. In addition, resignation and overprotection were rated on the FEF and emotional involvement on the FEICS. The subscales FEICS emotional involvement and FEF overprotection correlated significantly (r = 0.57; P < 0.01) if the versions concerning the key relative were compared; see Fig. 1. However, no significant correlation was detected between the extended versions of both scales. In contrast, the subscales on criticism of the different instruments correlated significantly for both versions, namely with regard to the key relative (r = 0.40; P < 0.05) and even more with regard to the whole family (r = 0.62; P < 0.001), with the exception of PCS and FEICS criticism versions. These two instruments revealed only a strong trend with regard to the key relative; see Figs. 1 and 2. In addition, the FEF resignation subscale correlated with criticism (FEICS PC; r = 0.58, P < 0.01) in the version with regard to the key relative and the version with regard to the whole family (FEF criticism; r = 0.44, P < 0.05).
Another set of correlations was calculated to evaluate the associations between the two versions of the instruments. Between the corresponding subscales of the versions concerning the key relative and the family as a whole, significant correlations emerged for the FEICS subscales perceived criticism (r = 0.54, P < 0.01) and emotional involvement (r = 0.72, P < 0.001) as well as for the FEF subscales criticism (r = 0.57, P < 0.01), resignation (r = 0.80, P < 0.001), and overprotection (r = 0.81, P < 0.001).

### 3.5. EE scores in relatives

Eight (32%) relatives were rated high EE whereas in 17 (68%) relatives EE status was low. Under consideration of covert criticism, score 2, the number of high EE family members rose to 12 (48%) leaving 13 (52%) low EE families. There was a high correlation of r = 0.72 (P < 0.001) between the two FMSS scores. This is due to the fact that score 2 depends on score 1 insofar as a high EE status according to score 2 always includes a high EE status according to score 1.

### 3.6. Expressed and perceived emotion

The correlations of relatives’ EE scores (score 1) and patients’ ratings with regard to the key relative yielded significant results for the perceived criticism subscale of the FEICS and the resignation subscale of the FEF; see Table 1. The extended versions of FEF and FEICS on the whole family, however, were correlated with relatives’ EE status on three subscales, namely FEF critique, FEF resignation, and FEICS perceived criticism, but not with any of the emotional involvement subscales. All correlation coefficients and levels of significance are given in Table 2.

The comparison of EE score 2 (covert criticism included) and the patients’ self-rating scales yielded results comparable with those given above, with the exception of FEF resignation, key relative version (see Table 1).

In addition, Mann–Whitney U tests revealed significant relationships between several of the patients’ ratings and relatives’ EE status (high vs. low) supporting the notion that high EE relatives were perceived to be more critical by patients (see Table 2). High EE relatives according to both scores 1 and 2 were rated by patients to express more criticisms and resignation on the FEF resignation and the FEICS perceived criticism subscales in both versions, concerning the key relative and the whole family. Additionally, the FEF subscale critique in the version concerning the whole family was significantly related to relatives’ high EE status. Overall, there was a good correspondence between criticism expressed by high EE relatives and criticism perceived by patients. No such association emerged between

### Table 1

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<thead>
<tr>
<th>Patients’ rating of key relative</th>
<th>Score 1</th>
<th>Score 2</th>
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<tbody>
<tr>
<td>PCS</td>
<td>0.14</td>
<td>0.21</td>
</tr>
<tr>
<td>FEF critique</td>
<td>0.24</td>
<td>0.14</td>
</tr>
<tr>
<td>FEF resignation</td>
<td>0.43</td>
<td>&lt;0.05</td>
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<tr>
<td>FEF overprotection</td>
<td>0.04</td>
<td>0.08</td>
</tr>
<tr>
<td>FEICS perceived criticism</td>
<td>0.59</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>FEICS emotional involvement</td>
<td>−0.08</td>
<td>0.31</td>
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### Table 2

<table>
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<tr>
<th>Patients’ ratings of their key relatives/of whole family in relation to high versus low EE status of the respective relatives, Mann–Whitney U test</th>
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<tbody>
<tr>
<td>Score 1</td>
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<tr>
<td>PCS</td>
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<td>FEF critique</td>
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<td>FEICS emotional involvement</td>
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<td>FEICS perceived criticism</td>
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400 patients’ ratings and relatives’ EE status with respect to emotional involvement.

402 4. Discussion

403 The present study explored the correspondence between several self-rating instruments for assessing schizophrenic patients’ perceptions of their relatives. Additionally, it compared the level of EE displayed by a key relative to the patients’ view of the respective relative and the whole family. Special emphasis was placed upon the criticism dimension. Finally, EE status was studied in the light of patients’ clinical and sociodemographic variables.

412 4.1. Correspondence of self-rating instruments for patients

414 The three instruments PCS, FEICS, and FEF were constructed based on the EE theory but under different circumstances and with varying methodologies.

417 The patients’ ratings on the different scales concerning the key relatives displayed moderate correlations which – with one exception – reached statistical significance. A more prominent correlation appeared between the criticism subscales of FEICS and FEF when the extended versions concerning the whole family were studied. As opposed to the criticism dimension, the emotional involvement dimension fell below the level of significance in the extended version. This is most likely due to a smaller variance within the involvement dimension. A further clarification is not possible at this point, because the literature does not contain reference to other studies having used the extended versions of the above instruments. Nevertheless, it can be assumed that the correlations between the criticism subscales of PCS, FEICS, and FEF hint at a common underlying construct—higher correlations can only be expected if the methodologies for scale-building as well as the conceptual bases are identical. Whether this common underlying construct of the scales is formed by the criticism dimension of EE or by the patients’ perspective, which might represent a concept in its own right, remains unanswered to date. Further studies are needed to shed more light on this question.

441 The last set of analyses were concerned with the correspondence of the different versions of the instruments FEICS and FEF. Moderate to high correlations between the versions regarding the key relative and the family were present, mostly reaching high levels of statistical significance. As the key relative is part of the family system, interrelation was to be expected.

447 4.2. Expressed and perceived emotion

448 The association between a patients’ perception of the key relative and the respective relative’s EE status was rather low for all but two domains, namely FEF resignation and perceived criticism as measured by the FEICS subscale. Interestingly, a higher congruity was found between the patients’ perception of the whole family and the relatives’ statements. This congruity was present for the criticism subscales of both self-rating instruments and the resignation subscale of the FEF; patients’ criticism ratings concerned families with high EE members. The introduction of the revised form of the FMSS including covert criticism hardly altered the results. As opposed to criticism, there was no relationship between expression and perception of relatives’ emotional involvement. This is most likely due to the fact that in our study, high EE ratings in relatives were brought about by the criticism rating in all cases but one. In studies conducted in Western cultures relatives are rated high EE because of the expression of criticism rather than of emotional over-involvement (Kavanagh, 1992; Tanaka et al., 1995; Butzlaff and Hooley, 1998; Shimodera et al., 1999). This prevalence of criticism also varies between Northern and Southern European countries, North and South America; it seems conceivable however, that the German pattern should follow the Northern European one.

474 The moderate correspondence between the patients’ and the key relatives’ views is partially in line with the findings of Thompson et al. (1995). This group reported that patients’ perception of criticism was significantly related to the EE assessments in those relatives judged high EE due to critical remarks (via FMSS). It also predicted relapse during a one-year follow-up interval and thus parallels findings from EE research regarding higher influence of the criticism component on relapse compared to the involvement component (Hooley et al., 1986; Hooley and Teasdale, 1989). When the patients’ perception was combined with the amount of contact with their relatives in the study by Thompson et al. (1995), an even higher degree of prediction of outcome was achieved. The increase of correspondence between the estimations of patients and their relatives in the present study when the family as a whole was considered is in line with Hooley and Teasdale (1989). They also described a moderate correlation (r = 0.51) between expressed emotion and perceived criticism, the latter being the single best predictor of relapse. A study conducted in an Egyptian community (Okasha et al., 1994) on patients with depression and bipolar disorder did not confirm the association between perceived crit-
icism and relapse. The adjustment of the PCS to a 3-
point Likert-type scale and the general reluctance of
Egyptians to criticize their relatives might account for
the lack in statistical significance and make results less
compable to those of other studies.

However, the question as to why our results differ
depending on whether the key relative or the family is
the focus of attention, cannot be answered on the basis
of the results obtained from this study. Literature yields
no results for a comparison, as the test versions
concerning the family were applied for the first time.
One might speculate that the patients’ ratings of the
whole family more consistently depict the perceived
criticism dimension — because on the one hand the
key relative strongly determines perceived family cli-
mate and on the other hand this very climate is also
being influenced by the presence of other family mem-
ers. Thus, a broader or systemic perspective might
increase accuracy, as it takes into account soothing
and intensifying influences on the key relative.

Overall, the assessment and comparison of patients’
and their relatives’ views has to be embedded in the
more general discussion on the comparability of insider
and outsider perspectives in research. In the case of
comparison of PC and EE the patients’ inside perspec-
vie — as assessed via questionnaires — is related to the
relatives’ outside view — as assessed via interview. Yet
another level is introduced by involvement of an inter-
viewer who is another outsider. Problems of differences
between attitude and behavior as well as between be-
havior and perception have been addressed by psychi-
atriac researchers. In their study Hahlweg et al. (1989)
compared key relatives’ EE status as assessed via CFI
and FMSS to the behavior exhibited during an interac-
tion with the patient. They found a more negative
interaction style in families with high EE relatives
depared to those with low EE relatives. Kavanagh
(1992) in his review reported that — in several studies —
high EE relatives appeared to be inconsistent in their
behavior and to listen less effectively. In family re-
search, the problem of outsider and insider perspec-
tives has been discussed by Olson (1985) and Sigafoos and
Reiss (1985). Hooley and Teasdale (1989) debated the
issue with respect to depression. These authors con-
cluded that results from different perspectives are only
comparable to a limited extent.

4.3. Relatives’ EE status and patients’ sociodemographic
and clinical data

Patients with high and low EE relatives — according
to both FMSS scores — did not differ with regard to
their contact with relatives, sociodemographic and clin-
ical data. The question as to whether patients’ symp-
tomatology at the time of assessment is connected to
relatives’ EE status has been studied by many groups
(Brown et al., 1972; Miklowitz et al., 1983; Vaughn et
al., 1984; Bentsen et al., 1998a,b) all of which came to
the conclusion that there is no significant relationship.
Thus, our results are in line with the literature. The fact
that in our study patient subgroups were comparable
regarding clinical and sociodemographic data strength-
ens the results insofar as correspondences between
patients’ and relatives’ perspectives are not confounded
by the above variables. However, the overrepresenta-
tion of high EE relatives among the schizophrenia vs.
the schizoaffective disorder group in the analyses of
FMSS score 1 deserves critical mention. It may be
related to the higher rate of married schizoaffective
patients and a difference in responses between spouses
and parents (Bentsen et al., 1996). However, the differ-
ence did not hold up when FMSS score 2 was included
in the analysis. The fact that score 2 based results are
comparable between schizophrenic and schizoaffective
patient groups is in line with another study by our group
(Bachmann et al., 2002) where no differences were
found between patients with schizophrenia and depres-
sion. In general, the introduction of FMSS score 2
seems sensible because this yields a higher compara-
bility with the literature including studies based on the
CFI (Bachmann et al., 2002).

4.4. Advantages of PC assessment

There are several advantages to the application of
PC-measurements: efficiency, effectiveness, and prac-
ticability of assessment. Some studies hint at the good
predictive power of PC, in other words at the efficien-
cy. PC assessment does not require rater-training and
the implementation is not time consuming, therefore it
is cost effective. Its practicability is high because
scales are self-rating scales which can easily be dis-
tributed — in case of the PCS even to patients whose
mother-tongue is not the language used in the ques-
tionnaire. As a consequence, the drop-out rate can be
expected to be low which is a clear advantage in the
assessment of EE. Although most studies on EE do
not report the number of potential candidates who
were not included because they had too little contact
with their relatives, in the original study by Brown et
al. (1972) the exclusion rate was 80%. This pitfall of
non-accessibility of relatives can be omitted if the
patients’ perspective is studied rather than that of
their relatives.
4.5. Limitations

Major limitations of the study are the small samples size due to the exploratory character, and the over-representation of schizoaffective patients due to higher readiness to participate and/or better accessibility of relatives. The latter also explains the high rate of married subjects among relatives and may be responsible for the low overall level of EOI which is rather expressed by mothers than spouses (Bentsen et al., 1996). Along these lines, low EOI rates in this study may account for the fact that no relationships with patient ratings were detected. In addition, the lack of validation of the PCS scale by testing against relapse poses a problem as perceived criticisms best predicted relapse in the study by Hooley and Teasdale (1989).

4.6. Conclusions

In conclusion, in this explorative study patients were aware of their relatives’ criticism. Patients’ and relatives’ views did not correspond in all respects, and the patients’ perspective cannot be substituted by the relatives’ view. However, there was moderate to high agreement with regard to criticism. The patients’ own perception of criticism might represent a simple but useful and representative tool for relapse prediction, the value of which has already been shown.

Given the results of the present study and the general notion that high criticism is linked to relapse in schizophrenia more so than is overinvolvement, it seems sensible to limit the assessment of the patients’ perception to the criticism component of EE. If introduced, the assessment of perceived criticism should ideally not be limited to one key relative but broadened to a rating of the entire system of close relationships. Questions remain concerning the stability of the perceived criticism construct, modifying factors, and a possible embedding within a more general model.

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