The Role of Expressed Emotion in Relationships Between Psychiatric Staff and People With a Diagnosis of Psychosis: A Review of the Literature

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The concept of expressed emotion (EE) has been extended to the study of staff-patient relationships in schizophrenia. A comprehensive review of the literature identified a total of 27 studies investigating EE in this group published between 1990 and 2008. The article aims to assess whether the concept of EE is a useful and valid measure of the quality of professional caregiver and patient relationships, given that staff may be less emotionally invested in relationships than relatives. In doing so, it summarizes methods of measuring EE, the nature of professional EE compared with familial EE, associations between high EE and patient outcomes, associations between EE and both patient and staff variables, and intervention studies to reduce high EE. The available evidence suggests that the Camberwell Family Interview is an acceptable measure of EE in staff-patient relationships, although the Five Minute Speech Sample may provide a less resource intensive alternative. However, in contrast to familial research, neither the EE status on the Camberwell Family Interview nor the Five Minute Speech Sample show a robust relationship with outcomes. The presence or absence of a positive staff-patient relationship may have more predictive validity in this group. There is relatively consistent evidence of associations between staff criticism and poorer patient social functioning. Consistent with findings in familial research, staff attributions may play a key role in driving critical responses, and it may be possible to reduce staff high EE by modifying negative appraisals.

Key words: expressed emotion/psychosis/schizophrenia/staff-patient relationships/review

Introduction

Despite deinstitutionalization, relationships with psychiatric staff are often of central importance to people with psychosis, as wider social networks can diminish as a consequence of mental health problems.1 It is therefore not surprising that the quality of staff and service user relationships is a key predictor of outcomes.2 There are different methods of conceptualizing and measuring therapeutic relationships. High expressed emotion (EE) refers to affective attitudes and behaviors toward patients characterized by critical comments, hostility, and emotional over involvement (EOI).3 The construct has traditionally been applied to the study of familial relationships, and it is well established that levels of familial EE are significant predictors of outcome across a range of psychiatric and physical health conditions.4 A substantial body of this research has been carried out with people with a diagnosis of schizophrenia, and there is strong evidence that those living in high EE environments have a much higher risk of relapse than those living in low EE environments.5 The success of family intervention studies aiming to reduce high EE and relapses add to the support for a causal relationship.6,7

More recently, EE research in schizophrenia has been extended to relationships between patients and psychiatric staff. Although staff may have less emotional investment in relationships than relatives, there is often significant overlap in the roles of paid and unpaid carers of people with the diagnosis. Both are faced with potentially challenging behaviors when people are acutely unwell or have marked negative symptoms. Staff working in services providing long-term support, like relatives, may have frequent contact with patients over significant periods of time. Many staff may also have limited training and supervision in working with people with complex needs.8 Over the past 2 decades, there has been a growth of studies investigating the measurement and correlates of EE in staff and patient relationships, although there is still very limited research testing interventions to reduce staff high EE. This article aims to assess whether the concept of EE is a useful and valid measure of the quality of professional caregiver and patient relationships, given that staff may be less emotionally invested in relationships than relatives. In order to provide a context to the review, we will first outline methods of measuring EE in staff-patient relationships and the nature of
professional EE compared with familial EE. We will then review (a) associations between EE and patient outcomes, (b) associations between EE and both patient and staff variables, and (c) intervention studies to reduce staff high EE. The article concludes by summarizing future research implications.

The review incorporates English Language studies identified from PsychInfo, Medline, PubMed, AMED, CINAHL, EMBASE, and the International Bibliography of the Social Sciences databases for the years 1990–2008, with the terms “staff” or “professional” or “nurse” and “psychosis” or “schizophrenia” and “expressed emotion” or “relationship” in the abstract. Inclusion criteria were studies measuring EE or sub-components (criticism, hostility, or EOI) in samples of mental health professionals and people with a diagnosis of schizophrenia or related psychoses. Studies that were cited in these articles were followed up from reference lists and were incorporated if they met the inclusion criteria. Two previous reviews of EE in staff-patient relationships were identified, which concluded that although research investigating staff EE was relatively limited, EE is a potentially useful construct to measure the quality of professional and patient relationships. This article builds on these reviews by incorporating more recently published studies, providing a critique of the concept of EE applied to staff, suggesting a more sensitive measure of staff-patient relationships and identifying questions for future research.

Overview of Studies

The search identified a total of 27 studies meeting inclusion criteria (see table 1). It is not possible to estimate exactly how many patients and staff were sampled across all studies, as the extent to which authors report data on the same sample is not always clear. The majority of the research has been carried out in the United Kingdom or in Europe with the exception of 3 studies from the United States, 10–12 2 studies from Israel, 13,14 2 studies from Japan, 15,16 and 1 from Hong Kong.17 The studies sampled patients from community, inpatient, or residential settings and the majority of participants had a diagnosis of schizophrenia. Staff were from a range of professional backgrounds, although the most frequently sampled profession were nurses. The most frequently used measure of EE was the Camberwell Family Interview (CFI), which was used in 12 studies; followed by the Five-Minute Speech Sample (FMSS), which was used in 9 studies. Eighteen studies reported levels of EE and associations with staff and patient characteristics, including outcomes. Six studies describe the development or assessment of the psychometric properties of measures, and 2 studies describe interventions to reduce staff high EE.

Measurement of EE

The CFI is regarded as the most valid instrument for measuring emotional climate in familial relationships. This semistructured interview asks about the development of the person’s illness, patient symptoms, and the quality of the relationship. A trained rater then codes the interview on the following 5 scales: (1) critical comments; (2) hostility; (3) positive remarks; (4) EOI; and (5) warmth. Individuals scoring above the threshold on one or more of the dimensions of criticism, hostility, or EOI are classified as “high EE.” Moore et al were the first to adapt the CFI for staff by omitting less relevant questions (eg, Have you ever stayed awake overnight waiting on the client?). The authors found good rates of interrater reliability on the measure comparable to those obtained in research with relatives. Interrater reliability was assessed by computing intraclass correlation coefficients (ICCs) for each component scales of EE on 8 randomly selected interviews. Complete agreement was achieved on EE category and the presence and amount of hostility. ICCs for agreement on critical comments, positive remarks, and warmth subscores were all above .85. Good rates of reliability have been also reported by 5 other studies using the CFI, although consistent with familial research interrater reliability for warmth and positive remarks have been found to be lower than for other dimensions with ICCs < .80.24,25

As the CFI takes between 1 and 2 h to administer and a similar length of time to score, alternative briefer instruments have been developed. The most frequently used alternative is the FMSS. The FMSS asks respondents to talk about their relationship with the patient for 5 min, and transcripts are rated using an EE-type coding system, including whether the quality of the staff-patient relationship is negative, neutral, or positive. The authors report a reasonable degree of convergence between the CFI and the FMSS in relatives. Synder et al investigated convergence between the CFI and FMSS in a sample of staff and found agreement for EE status in 71.4% of cases. A later study by Moore and Kuipers found convergence in 89.7% of cases, suggesting more reasonable levels of agreement. Moore and Kuipers found that inexperienced raters can rate reliably on the FMSS, although they were less accurate at identifying specific critical comments. Good rates of interrater reliability for EE status or subscales (coefficients > .8) were also reported in 4 other studies using the FMSS.

Where there was disagreement in studies investigating rates of EE on the CFI and the FMSS, EE was rated as higher on the FMSS, as only one critical comment is needed for a high EE classification on the FMSS, whereas 6 or more are needed on the CFI. Conversely, research with relatives suggests that the FMSS is a more conservative measure of high EE compared with the CFI. The authors argue that the briefer nature of the
## Table 1. Summary of Studies Investigating EE in Staff-Patient Relationships

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<thead>
<tr>
<th>Country</th>
<th>Sample</th>
<th>EE measures</th>
<th>Key findings</th>
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<tr>
<td><strong>Hansen et al</strong> &lt;sup&gt;10&lt;/sup&gt;</td>
<td>United States</td>
<td>Forty patients with schizophrenia and staff in supported residences.</td>
<td>PRS, Resident Rating Form (overprotection)</td>
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<tr>
<td><strong>Ball et al</strong> &lt;sup&gt;22&lt;/sup&gt;</td>
<td>United Kingdom</td>
<td>Compared 2 hostels. Twelve interviews with staff in total. Patients with diagnoses of schizophrenia or other psychoses.</td>
<td>CFI</td>
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<tr>
<td><strong>Moore et al</strong> &lt;sup&gt;21&lt;/sup&gt;</td>
<td>United Kingdom</td>
<td>Sixty-one patients in long-term residential settings, majority with schizophrenia, or other related psychoses. Thirty-five staff, majority were nurses.</td>
<td>CFI</td>
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<tr>
<td><strong>Moore and Kuipers</strong> &lt;sup&gt;38&lt;/sup&gt;</td>
<td>United Kingdom</td>
<td>Twenty-one patients in hostels or in-patient services, with schizophrenia or other psychoses. Sixteen staff, majority were nursing assistants.</td>
<td>CFI</td>
</tr>
<tr>
<td><strong>Moore et al</strong> &lt;sup&gt;40&lt;/sup&gt;</td>
<td>United Kingdom</td>
<td>Sixty-one patients and key workers in long-term care. Majority of patients had schizophrenia and the majority of staff were nurses.</td>
<td>CFI including analysis of content</td>
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<tr>
<td>Country</td>
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<td>Key findings</td>
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<td>Charlesworth et al(^{11})</td>
<td>United States&lt;br&gt;Eighty-four patients with schizophrenia living in supported accommodation and their board and care providers.</td>
<td>PRS</td>
<td>Found no correlation between rejection and 6-month relapse, but rejection correlated with negative behaviors of residents.</td>
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<tr>
<td>Stark and Siol(^{27})&lt;br&gt;Siol and Stark(^{44})</td>
<td>Germany&lt;br&gt;Twenty-one patients with schizophrenia under the age of 35 years and following an acute episode of psychosis. Twelve key therapists.</td>
<td>FMSS</td>
<td>1/3 of interviews rated as high EE. Found no correlation between the EE status of staff and relatives. Found no association between EE and symptoms, age, sex, or illness variables. High EE therapists rated themselves as less personally committed than low EE therapists. Patients did not distinguish between high and low EE relatives in terms of rejection, inscrutability, helpfulness, or demanding attitude (although there was a nonsignificant trend for inscrutability).</td>
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<tr>
<td>Snyder et al(^{12})</td>
<td>United States&lt;br&gt;Thirty residents with schizophrenia or schizoaffective disorder and 15 operators in residential care homes.</td>
<td>CFI and FMSS</td>
<td>Thirteen per cent (4/30) interviews rated as high EE on CFI. FMSS and CFI were in agreement in 20/30 cases and in cases of disagreement EE rated higher on FMSS. CFI criticism was related to hostility and suspiciousness, and criticism and positive remarks were related to quality of life and resident perception of environment at 1 year follow-up. FMSS criticism and warmth were related to psychopathology.</td>
</tr>
<tr>
<td>Finnema et al(^{53})</td>
<td>Netherlands&lt;br&gt; Fifty-two patients with schizophrenia on long stay wards and 29 nurses.</td>
<td>FMSS and LEES twice at baseline and twice after intervention</td>
<td>Evaluated intervention to reduce staff high EE, involving education about schizophrenia and skills practice. Found nurses had increased knowledge of schizophrenia and evidence of less restrictive ward procedures following the intervention, but no effect on levels of high EE or patient functioning.</td>
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<tr>
<td>Oliver and Kuipers(^{41})</td>
<td>United Kingdom&lt;br&gt;Twenty-eight patients with severe and enduring mental health problems and 10 community mental health workers.</td>
<td>CFI</td>
<td>Thirty-nine percent of staff rated as high EE about at least one client. Emotional exhaustion, depersonalization, and GHQ were not related to EE. High EE was related to increased client symptoms.</td>
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<tr>
<td>Country</td>
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<tr>
<td>Willetts and Leff(^5^4)</td>
<td>Ten staff in community residential facility completed the course, although 24 interviews were carried out at baseline.</td>
<td>CFI</td>
<td>Evaluated an intervention to reduce staff high EE based on the Thorn Initiative. Found a small but nonsignificant increase in staff knowledge 3 months after intervention. Some evidence to suggest an increase in staff members’ use problem solving coping strategies in relation to patients’ behaviors, but no effect on EE.</td>
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<tr>
<td>Heresco-Levy et al(^1^3)</td>
<td>Thirty in-patients with schizophrenia and 29 staff from a range of professions.</td>
<td>PRS</td>
<td>Rejection did not correlate with demographic or treatment characteristics, but was related to higher cognitive impairment and psychosis. Older staff tended to view patients as more irritable and psychotic.</td>
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<tr>
<td>Moore and Kuipers(^2^6)</td>
<td>Thirty-two patients and 15 staff in day hospital for people with severe mental health problems. Majority of patients had diagnoses of schizophrenia and the majority of staff were nurses.</td>
<td>FMSS (raters with limited training) and CFI</td>
<td>Found 89.7% agreement between FMSS and CFI. Raters with limited training were reliable in coding FMSS, but were less accurate in identifying specific critical comments.</td>
</tr>
<tr>
<td>Tattan and Tarrier(^2^8)</td>
<td>One hundred twenty patients and staff from case management trial for people with schizophrenia and schizoaffective disorder.</td>
<td>FMSS</td>
<td>Twenty-seven percent of case managers rated as high EE. High EE was associated with individual case managers and not symptoms or illness factors, or clinical outcomes 6–9 months follow-up. Absence of a positive relationship was associated with a range of poorer outcomes.</td>
</tr>
<tr>
<td>Barrowclough et al(^2^3)</td>
<td>Twenty patients in a low secure service and 20 nursing staff. The majority of patients had a diagnosis of schizophrenia.</td>
<td>CFI</td>
<td>Found no high EE interviews. Critical comments were associated with more stable and internal attributions for patient problems. Patient perceived negativity was related to criticism and warmth and staff reports of negativity. Social functioning was associated with staff perceived and expressed negative feelings.</td>
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<tr>
<td>Country</td>
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<tr>
<td>Belgium</td>
<td>Fifty-six patients with schizophrenia or related psychosis in sheltered living and staff, the majority of whom were nurses.</td>
<td>CFI Staff and patient versions of PCS.</td>
<td>Found high EE in 17% of interviews. Found significant correlations between resident PCS and criticism on CFI. Carried out content analysis of CFI and found critical comments related to negative symptoms and embarrassing behaviors.</td>
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<td>Hong Kong</td>
<td>Twenty-one patients with schizophrenia and primary nurses.</td>
<td>ACL FAS Interview similar to FMSS rated on scales related to CFI.</td>
<td>Found 48% of transcripts rated as high EE. Differences in FAS scores between high and low EE groups were large but not significant. ACL generally weakly related to FAS and FMSS.</td>
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<tr>
<td>United Kingdom</td>
<td>Seventy-five patient and key worker pairs (61 staff, mainly nurses).</td>
<td>FMSS Patient version of FMSS.</td>
<td>Found 73% of staff high in EE, but over 50% patients rated staff as low EE. Patient EE did not relate to outcomes at 12-months follow up. Only patient argumentativeness was correlated with staff EE. Low EE staff ratings were associated with patient moves to lower levels of security at 12-months follow-up. High EE was associated with no change in staff role or patient location at 12-months follow-up.</td>
</tr>
<tr>
<td>Belgium</td>
<td>Fifty-six residents in sheltered living with schizophrenia or related psychoses. Fifty-six residential staff (majority nurses or social workers).</td>
<td>CFI</td>
<td>Sixteen per cent of transcripts were rated as high EE. High EE was associated with residents’ age, poorer social functioning, and smaller networks. No significant relationships with symptoms, other than excitement. High EE professionals were less open and had lower educational level.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Study 1: 113 inpatients of hospitals or hostels, mainly with a diagnosis of schizophrenia. Study 2: 22 patient and staff pairs (also participating in study 1). Majority were unqualified nurses. Study 3: 55 acute inpatients with schizophrenia</td>
<td>PEES FMSS</td>
<td>Found PEES had good factor structure, with adequate test re-test reliability and some concurrent validity with staff EE and ward atmosphere.</td>
</tr>
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</table>
FMSS can reduce its sensitivity. These inconsistencies in findings highlight the need to develop criteria for staff and familial research independently.

Moore et al describe using the FMSS method to assess patients’ perceptions of the degree to which staff exhibit high EE in a forensic sample. The authors used 5 prompts about the relationship and rated interviews using similar scales to the traditional measure. The authors found that overall compared with the staff FMSS, patients talked less and required more prompting. Patients also made more positive comments and fewer critical comments, possibly due to concerns about criticizing their caregivers. The authors report good inter-rater reliability for both the staff and patient versions of the FMSS with 100% agreement for EE status.

<table>
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<tr>
<td>Belgium</td>
<td>Fifty-six patients with schizophrenia in sheltered residences and 56 staff, majority of whom were nurses.</td>
<td>CFI LEE SPCS</td>
<td>Sixteen per cent of professionals were rated as high EE. Found significant, but weak correlations between criticism scale of CFI, LEE, and client version of PCS. Staff version of PCS was unrelated to CFI.</td>
</tr>
<tr>
<td>Japan</td>
<td>One hundred eighty-nine nurses in psychiatric hospitals.</td>
<td>NAS</td>
<td>Found NAS had good factor structure. Found reasonable test re-test reliability and correlations with burnout.</td>
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<tr>
<td>Israel</td>
<td>Fifty-six hostel residents with schizophrenia. 23 staff (instructors).</td>
<td>PRS</td>
<td>Found increased rejection toward patients with more symptoms and diminished job-related and health care living skills. Older staff with longer professional experience also had higher rejection scores.</td>
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<tr>
<td>United Kingdom</td>
<td>8 patients and 10 staff on learning disability medium secure unit and support.</td>
<td>FMSS</td>
<td>High EE in 31% of transcripts. Found high variability in EE across staff and patients. Found higher EE in males and support workers. Found significant relationships between high EE and depersonalization element of burnout.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Twenty patients with schizophrenia and 20 nursing staff.</td>
<td>FMSS</td>
<td>Found no high EE in transcripts. Positive relationship status was related to security of staff attachment style.</td>
</tr>
<tr>
<td>Japan</td>
<td>One thousand two fifty-two psychiatric hospital staff, the majority of whom were nurses.</td>
<td>NAS short form</td>
<td>Found NAS short form had good factor structure and correlations with MBI.</td>
</tr>
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</table>

Note: PRS: Patient Rejection Scale; CFI: Camberwell Family Interview; FMSS: Five-Minute Speech Sample; LEES: Levels of Expressed Emotion Scale; PCS: Perceived Criticism Scales; ACL: Adjectives Checklist; FAS; Family Attitude Scale; PEES: Perceived Expressed Emotion in Staff Scale; and NAS: Nurse Attitude Scale.
rejecting responses. It has been shown to have good psychometric properties in relatives and be associated with patient social adjustment,\textsuperscript{32} but its reliability and validity have not been investigated in samples of staff. The NAS is based on the Family Attitude Scale (FAS\textsuperscript{33}) and asks about relationships with patients in general over the past 3 months. Katsuki et al\textsuperscript{15,16} report reasonable reliability and validity for the measure in a large Japanese sample, with Cronbach’s alphas for subscales >0.65 and predicted correlations with burnout\textsuperscript{15,16} One-month test-retest reliabilities for subscales were 0.65 for criticism, 0.77 for hostility, but as low as 0.44 for positive remarks.\textsuperscript{13} The psychometrics have also not been investigated in the West.

The Levels of Expressed Emotion Scale (LEES\textsuperscript{34}) is a questionnaire measure designed to assess patients’ perceptions of EE. Items are based on 4 correlates of EE: intrusiveness; emotional response; attitude toward illness; and tolerance and expectations of the patient. The Perceived Criticism Scales (PCS\textsuperscript{35}) and Adjectives Checklist (ACL\textsuperscript{36}) are simple Likert measures of EE, which have both carer and patient versions. Van Humbeeck et al\textsuperscript{25} investigated the concurrent validity between the CFI, the LEES, and the PCS in professional-patient relationships. The authors found significantly positive correlations between the criticism scale of the CFI, the total score of the LEE, and the patient version of the PCS. Barrowclough et al\textsuperscript{21} also found significant correlations between the CFI and the PCS, which not only provides evidence for the concurrent validity of patient-rated measures but also suggests that patients are sensitive to staff negative perceptions. Arthur\textsuperscript{17} tested the reliability and validity of the ACL in sample of 21 patients, family members, and primary nurses in a Chinese sample in Hong Kong. The authors found the ACL had weak overall associations with EE rated on the FMSS for both staff and family members and poor internal consistency with subscale alphas <0.07.

Forster et al\textsuperscript{37} describe the development and preliminary validation of the Perceived Expressed Emotion in Staff Scale (PPESS), which is based on the LEES together with additional items to measure criticism. Although the measure had good reliability (subscale alphas >0.72, test re-test for total score: \( r = 0.78, P <0.001 \)), there were no significant differences on the PPESS between staff classified as high and low EE on the FMSS.

Although small sample sizes make findings hard to interpret, there is evidence to suggest that the CFI and the staff version of the FMSS have reasonable convergence and the FMSS may be preferable in research or clinical settings where time is limited. The fact that the FMSS may be more sensitive than the CFI may be an advantage in staff research, where high EE may be harder to detect. As will be discussed further below, the positive vs neutral relationship distinction on the FMSS may provide an even more sensitive measure of relationship quality than EE dimensions on the CFI or other measures of EE. Some studies have used questionnaire measures in addition to or instead of the CFI and FMSS. Questionnaire measures are less resource intensive, so may be more suitable for research with larger samples. However, the available research suggests that they have poor concurrent validity with observer-rated measures, possibly because questionnaires are influenced by reporting biases. The majority of EE measures have assessed EE from the perspectives of staff members, but there is some evidence to suggest that patients are sensitive to staff criticism and hostility. Although patients may be reluctant to criticize their caregivers, assessing EE from patient perspectives may provide a more important indication of the impact of high EE. However, the importance of the EE measure in relative patient groups stems from its association with patient outcomes. Research comparing the predictive validity of the CFI and other instruments in staff-patient samples is therefore needed to confirm the superiority of any of the measures. This issue will be discussed in the sections below.

Nature of EE and Content of EE in Staff-Patient Relationships

Ten studies reported rates of high EE using the CFI, and 7 studies reported rates of high EE using the FMSS. Consistent with findings described above, rates of EE tend to be higher in those studies using the FMSS (see table 1). Rates are also likely to vary according to the setting in which the research is carried out. For example, Moore et al\textsuperscript{29} found that as many as 73% of their dyads were rated as high EE on the FMSS. This unusually high rating may be also associated with the fact that the research was carried out in a high secure forensic service where patients had resided for an average of 2 years and with potential for high levels of staff stress.

However, with the exception of 3 studies, 2 using the FMSS\textsuperscript{29,17} and one using the CFI,\textsuperscript{38} rates of high EE in staff and patient samples are lower than those found in relative studies. Kavanagh\textsuperscript{39} reported the median proportion of high EE families in their meta-analysis as 54% with a range from 23% to 77%, whereas figures are typically lower than 40% in staff-patient studies.\textsuperscript{12,23,24,27,28,40–42} It may be the case that psychiatric staff have both more experience and training in managing patients’ problems than relatives which may be protective factors against the development of high EE.\textsuperscript{43} In support of this hypothesis, an early study which involved interviewing nurses about how they cope with patients’ symptoms of schizophrenia found that more experienced senior staff used a greater number and range of coping strategies than less experienced staff.\textsuperscript{43} High EE ratings in staff-patient studies are also almost exclusively based on the presence of critical comments with infrequent hostility and very little evidence of EOI. In fact,
only Siol and Stark\textsuperscript{27,44} and Van Humbeeck et al\textsuperscript{42} found evidence of EOI. These differences may be associated with the fact that staff members may have less emotional attachments to patients and less frequent and intensive contacts.

There is, however, limited research directly comparing EE status in samples of staff and relatives rating the same patient. One study compared EE in 12 therapists and 21 relatives and found 1/3 of both therapists and parents showed high EE on the FMSS. Four relatives expressed EOI and 3 expressed criticism, whereas only 1 therapist expressed EOI and 6 expressed criticism. There was no significant correlation between the EE status of therapists or parents, and none of the 21 patients had both a high-EE relative and a high-EE therapist. These findings suggest that staff and relatives may have different perceptions of their relationships with patients.\textsuperscript{44}

Several studies have assessed the same staff member’s EE status in relation to different patients. The majority of studies investigating differences in staff EE status across different patients have found that staff produce high and low EE ratings for different patients.\textsuperscript{21,27,41,44,45} This latter study investigated EE in 10 staff and 8 patients in a unit for patients with learning disabilities and psychosis and administered the FMSS with all 10 staff in relation to all 8 patients. The authors found high variability with no staff member being rated as having high EE when discussing all patients and no patients eliciting high EE in all staff. However, a much larger study by Tattan and Tarrier\textsuperscript{28} investigating EE in community case managers, who had less contact with patients, found correlations between EE status and case managers, suggesting that high EE may be a response style of staff.

Two studies have carried out a content analysis of transcripts from the CFI for staff.\textsuperscript{40,42} These studies describe high EE staff as being less tolerant of patients, frustrated, having lower expectations of progress and regarding patients’ difficulties as being within their control. On the other hand, low EE staff are described as being able to control feelings when confronted with difficult behavior, warm, and seeing the need for patients to be independent, despite having lower expectations.\textsuperscript{40,42} These analyses highlight the potential role of staff attributions for patients’ problems in the development of high EE. Moore et al\textsuperscript{42} also found that low EE staff reporting motivating patients, eg, they were able to describe ways of helping patients to manage negative symptoms.

Moore and Kuipers\textsuperscript{38} extended these findings by carrying out a behavioral interaction task with high vs low EE patient-staff dyads. Consistent with evidence from similar behavioral observation studies with relatives, the authors found that when staff were rated as high EE they were more likely than low EE staff to make negative rather than supportive statements. However, staff did not express personal criticisms or critical intrusiveness in interactions, despite hostility ratings on the CFI. Clients in low-EE relationships with their key workers made more self-affirmatory statements, and their interaction was more likely to focus on positive aspects of their life. Research analyzing skin conductance data from patients exposed to high EE and low EE relatives suggests that low EE relatives have an effective calming.\textsuperscript{46} However, no such studies have been carried out to analyze the physiological impact of high and low EE interactions in staff-patient dyads.

In summary, findings suggest that rates of staff high EE are generally lower than those reported in research with relatives, and the concept of EOI may be less relevant in staff-patient relationships, possibly because staff may have less emotional investment in relationships. However, it is important to note that criteria for high EE and its dimensions in staff studies were calculated from relative samples in relation to the best predictors of relapse. It may be that alternative criteria are more helpful predictors of negative outcomes in staff research. Although high EE in staff is associated with more negative perceptions and interactions, staff may be less overtly hostile in their interactions than relatives, so measures need to take account for this potential difference. As argued below, the absence of positive aspects of relationship may be more sensitive indicator of relationships quality in staff-patient relationships than criticism or hostility.

**EE and Patient Outcomes**

Meta-analysis of 27 studies by Butzlaff and Hooley\textsuperscript{5} investigating the influence of familial EE on relapse found an impressive effect size of .31. If EE status is to provide a valid measure of EE in staff-patient relationships, it should be associated with the important outcome of relapse. However, only 4 studies have used naturalistic prospective designs to investigate associations between high EE and relapse in staff samples.\textsuperscript{10,11,22,28} Three studies have also used prospective designs to predict discharge rates.\textsuperscript{41,22,29}

Ball et al\textsuperscript{22} compared outcomes in 2 hostels, characterized by high and low EE. Symptom profiles and relapse rates were the same in both residences. Patients in the low EE hostel were, however, more likely to be discharged to more independent accommodation at 9 months, whereas those in the high EE hostel were more likely to be discharged for violating hostel rules or for psychiatric rehospitalizations. Moore et al\textsuperscript{29} also investigated EE and 12-month discharge patterns, as well as changes in the status of staff and patient relationships in a forensic sample. The study included a patient version of the FMSS described previously. The authors found that staff continuum measures of criticism, positive remarks, and negative relationship quality were all associated with change from working with one key worker to another at 12 months, with high EE associated with changes in key workers but...
not in the patient’s location and low EE associated with moves to less intensive support. However, there were no associations between categorical measures of EE and outcomes or between patient EE ratings on the FMSS and outcomes, or between EE and staff movement within the service or changes in role.

Findings of associations between EE or its dimensions and more adverse outcomes are in keeping with the familial literature. However, larger studies investigating associations between staff high EE and relapse have failed to find evidence of an effect. Two studies in the United States have investigated associations between EE and outcomes in residential settings using the PRS. Charlesworth et al.11 assessed whether patient rejection predicted relapse defined as moving to a higher more intensive level of care over a 6-month period in 84 patients living in residential settings. The authors found associations with medication and relapse, but no association with patient rejection. An earlier US study by Hansen et al.10 also failed to find an association between the PRS and number of hospital admissions or relapse.

Tattan and Tarrier28 collated EE data from a randomized controlled trial of patient case manager relationships in community settings. The study involved a large sample of 120 patients and 18 staff with outcomes assessed blind at 12-months follow-up. The study found no association between EE categorization or the quality of the relationship on the FMSS and rehospitalization rates. These authors did, however, find that an absence of a positive relationship was associated with positive symptoms, negative symptoms, poorer social functioning, lower patient satisfaction, and poorer quality of life. These findings from this large, multisite study suggest that the absence of a positive relationship rather than a relationship characterized by high EE have superior predictive validity in staff-patient dyads. Staff high EE may have less influence on patient outcomes than familial high EE due to the fact that staff may have generally less contact time with patients. This is particularly the case in this study, or in other research investigating EE in community samples, where staff may have relatively less contact with patients compared with longer stay inpatient settings. There is less potential for emotional investment in all staff-patient relationships compared with relative patient relationships. Unlike relatives, professional caregivers may also be more guarded in responses, resulting in lower expressions of negative affect on measures of EE.

**Patient Factors**

*Symptoms and Functioning*

If measures of EE are valid indicators of the quality of staff-patient relationships, as in the case of familial research, there should be evidence of associations between high EE and other important aspects of patient functioning.4 Seventeen studies have investigated associations between EE and patient symptoms or functioning either concurrently or at follow-up. There are inconsistent findings of associations between EE and overall levels of symptoms, with some studies finding positive correlations13,14,38,41 and others finding no relationship.21,24,28 In line with research with relatives,3 there is, however, more consistent evidence of a positive association between EE and a poorer level of social functioning or negative symptoms.11,14,21,23,24,29,42 The high level of disengagement of these patients may be a key factor in evoking criticism in staff. There is also consistent evidence of associations between high EE and behaviors that are liable to challenge staff resources such as aggressive and “attention-seeking” behaviors.21,24,29,40,42 It is likely that disengagement and challenging behaviors not only lead to high staff EE but in turn staff high EE has an adverse effect on functioning or fuels difficult behaviors. Where studies have failed to find associations between high EE and functioning, this may be associated with low levels of EE in these samples and therefore insufficient deviation in the data to produce significant effects.10,28 Therefore, although high EE may be associated with social functioning and challenging behaviors, given the relative low levels of high EE in staff-patient relationships, other constructs such as the absence of a positive relationship may be more robust indices of relationship quality in this group.28

**Demographics**

One study found an association between high EE and patient demographics.24 More specifically, the authors found associations between high EE and older age of patients.24 They argue that staff may be more likely to criticize older residents due to fears about them becoming dependent on the service, or staff may simply have a general preference for working with younger as opposed to older people. Other studies investigating associations between age and EE status have, however, failed to find evidence of an association.28,45

**Quality of Life**

Synder et al.12 investigated associations between high EE and a more diverse range of outcomes, including quality of life and residents’ perceptions of ward environments. The authors found that criticism and fewer positive remarks were related to poorer quality of life and patients’ negative perceptions of ward atmosphere at 12 months follow-up.

**Staff factors**

*Staff Stress*

There are only 9 studies investigating associations between professional characteristics and EE. The majority of studies in this area have investigated associations between EE and social functioning, higher EE being associated with poor social functioning and increased levels of agitation, aggression, and disengagement.5,13,14,21,23,39,44,50
between high EE and burnout or job satisfaction. If measures of EE are valid indicators of the quality of staff-patient relationships, as in the case of familial research, there should be evidence of associations between high EE and staff distress or burden. There is no consistent evidence of associations between EE and staff stress. Moore et al found no evidence of an association between EE and job satisfaction, general health, and coping strategies employed at work in a sample of residential staff. Oliver and Kuipers also found no association between high EE, general health, and burnout in their sample of case managers. It was noteworthy that job satisfaction was high in both of these studies, so there may be insufficient variation in the samples to identify associations. Dennis and Leach found high levels of the depersonalization element of burnout on the Maslach Burnout Inventory (MBI) in their sample of forensic nurses and support staff working with people with learning disabilities and mental health needs. There were significantly higher levels of depersonalization in the high EE compared with low EE staff but no associations with other dimensions of personal accomplishment and emotional exhaustion. Stark and Siol investigated associations between EE and attitudes toward work and found that high EE therapists rated themselves as less personally committed, but no differences for professional commitment, feelings of insufficiency, or security. However, it is difficult to draw comparisons between this study and the other literature, as the sample comprised counselling therapists, as opposed to psychiatric nurses.

As described previously, 2 large Japanese studies have found associations between the NAS and burnout, including the MBI. The NAS assesses attitudes toward relationships with patients in general as opposed to specific relationships, which is the usual method of assessing EE. Arguably, there may be more conceptual overlaps between the concepts of burnout and general attitudes toward relationships with patients than specific relationships that are also influenced by a range of patient-related factors. However, the absence of a consistent association between burnout and high EE in staff studies would suggest that the construct may provide a less valid predictor of staff compared with relatives’ psychological distress, possibly because staff are less emotionally invested in relationships.

**Attributions**

A consistent finding in the familial EE literature is that EE is more dependent on appraisals of the client’s problems than on actual symptoms or other characteristics. The aspect of appraisal that has received most attention is the kind of attributions that relatives make for patient problems. A consistent finding has been that symptoms and problems associated with the illness that are perceived as within the patient’s control tend to associated with more hostility and criticism than those attributed to uncontrollable factors. Staff attributions have also been found to be associated with EE in staff-patient relationships. These authors found that critical comments were associated with more stable attributions for problems, and when borderline comments were included, associations between criticism and internal attributions were significant. In addition, the study found associations between staff and patient reports of negative feelings toward one another and staff members’ attributions of problems being within the patient’s control.

The inconsistent findings between symptoms and high EE, discussed above, would also support the theory that high EE responses in staff are dependent on staff attributions rather than patient characteristics. Furthermore, the content analysis study described previously by Moore et al highlights associations between criticism and regarding patients’ difficulties as being within their control, and criticism and negative expectations regarding progress. Associations between staff high EE status and attributional style are important in terms of understanding the process by which high EE and low EE develops.

**Staff Personal Characteristics**

Van Humbeeck et al have carried out the most comprehensive study investigating associations between EE and staff factors, including coping strategies and personality. The authors found no group differences between high EE and low EE staff, except high EE professionals sought less social support than low EE colleagues. However, given the relative low levels of high EE in this study (15%), the absence of group differences may be attributed to low power. When individual scales of the CFI were examined, there were positive associations between critical comments and openness, emotional involvement and neuroticism, and more positive remarks and fewer passive coping strategies. Berry et al also found that staff security in their own attachment relationships was associated with positive therapeutic relationships on the FMSS. However, it was not possible to investigate associations between attachment and EE in this study due to the low levels of high EE in the sample.

**Demographics**

Three studies have found that less qualified staff have higher EE and criticism than more experienced staff. Less qualified staff may have poorer knowledge of schizophrenia and less likely to attribute problems to illness and therefore beyond the person’s control. Levy et al found that older staff with longer professional experience were more likely to be rejecting of patients, suggesting that over time staff may be less tolerant of patients. However, these findings are not robust, as other studies have found no associations between EE status and experience or training, or associations between age and other sociodemographic variables.
Intervention Studies

Evidence of associations between familial EE and outcomes has led to the development of family interventions to address high levels of criticism and EOI.50–52 Although there is variation in these interventions, common areas targeted include psychoeducation and helping families cope with symptoms either through problem solving or reappraisal. Only 2 studies reviewed reported evaluations of staff training programmes designed to reduce staff high EE.53,54 Finemma et al55 developed a programme to increase nurses’ knowledge of the symptoms of schizophrenia and ways of coping with impairments. The course involved 14 weekly sessions of 1 day each with half-day booster sessions 2 months postintervention to address problems nurses encountered in putting skills learnt into daily practice. The authors found that nurses had increased knowledge of schizophrenia, and there was evidence of less restrictive ward procedures following the intervention, but they did not find a measurable effect on the levels of high EE with approximately one-third of staff still showing criticism postintervention on the FMSS. There were also no changes in patient ratings of EE on the LEES. There were no improvements in patient functioning, although levels of patient functioning were relatively high preintervention. Willetts and Leff54 developed a similar nurse training programme consisting of 9 sessions of 2-h duration over a period of 10 weeks. The course was based on the Thorn Initiative that was initially developed to train nurses to reduce familial high EE.55 The authors found a small but nonsignificant increase in staff knowledge 3 months after the intervention. Although there was some evidence to suggest an increase in staff members’ use of problem solving coping strategies in relation to patients’ behavioral difficulties, as in the case of Finemma et al53 research, the intervention had no effect on staff high EE measured using CFI. Interventions designed to reduce familial high EE may not therefore be as effective in reducing staff EE and may therefore require modification. A later study by Willetts and Leff56 described a pilot study, which involved developing psychological formulations with psychiatric staff teams. The intervention aimed to help increase staff psychological mindedness and reduce negative appraisals of patients with psychosis by helping staff to understand psychological factors that might be involved in the development and maintenance of service users’ problems. Psychological mindedness refers to the person’s ability to recognize associations between thoughts, feelings, and actions and, therefore, understand the causes of his own and others’ behavior.56 Each intervention was focused on a specific service user selected by the staff team and began by identifying needs or “problem behaviors” of the service user. Following the identification of a problem list, the psychologist helped staff to think about significant events in the service user’s life, including those they had experienced prior to and following his diagnosis. This process was facilitated by reviewing case notes. Staff were then asked to think about the possible impact of these experiences on the service user’s belief system. The formulation was used to generate hypotheses about possible
triggers of psychological distress for the service user and his preferred ways of coping, which were often related to the problem behaviors initially identified. The identification of coping strategies was followed by a discussion of their possible effects on problem maintenance and staff and patient interactions. The sessions concluded by ensuring that “problem behaviors” could be understood in the context of the formulation and a discussion of the implications for support plans. Only one formulation meeting was carried out for each service user, and only one patient was reviewed at each meeting.

The study did not include a measure of EE and there were no longer-term follow-ups, but preliminary findings are promising. Immediately after the intervention, there were significant increases in staff perceptions of the degree of control patients and themselves had over problems. There was an increase in the degree of effort they felt service users were making in coping, reductions in blame and more optimism about treatment. Staff also reported an increase in understanding of service users’ problems, more positive feelings toward service users, and an increase in confidence in their work. The pilot study is part of a programme of research that aims to promote more positive staff-patient relationships in patients with a diagnosis of schizophrenia.

**Future Research Implications**

Psychiatric staff play key roles in the life of people with psychosis, so it is important to identify reliable and valid methods of measuring staff-patient relationships and factors that predict relationship quality. Both the CFI and the briefer FMSS have been used to assess EE in this group. Rates of high EE tend to be lower in staff compared with familial research, and the concept of EOI may be less relevant. There is some evidence that low EE is associated with discharges due to improvements in mental state. A number of studies have also demonstrated associations between high EE and patient functioning, including deficits in social skills and other behaviors which are likely to challenge staff resources. However, in contrast to familial research, there is no evidence of a strong association between high EE and relapse rates. The wide variety of settings, services, and staff that have been included in the review may also have resulted in inconsistent findings in relation to staff EE and outcomes, or indeed staff EE and other patient and staff factors. The original familial EE studies focused on a discrete group of patients who were discharged from inpatient settings to live with relatives. Extending the number of studies investigating associations between staff EE and outcome across a range of different settings would enable us to determine settings in which associations are robust and those in which they are not.

The small number of participants in studies reviewed and relatively low levels of EE also leads to problems with reduced power and variability in data, thus obscuring possible relationships between staff EE and outcomes. It may be that alternative measures are more sensitive indicators of emotional climate in staff-patient relationships, such as the absence of a positive relationship. Although there is some evidence from familial research that positive relationships may influence outcomes, the importance of prosocial influences on outcomes has traditionally received little attention. The review suggests that this may be a particularly important construct to investigate in future studies of staff-patient relationships, as it has been linked to patient outcomes as well as staff characteristics. This assessment may be more valid in staff-patient samples in particular as negativity may be seen as unprofessional. However, large-scale longitudinal studies, which assess outcomes as well as EE and patient functioning at baseline, are needed to determine the validity of traditional criteria for high EE developed from familial research vs the absence of a positive relationship.

There is evidence to suggest that patients may be sensitive to staff negative perceptions, but the precise way in which staff EE impacts on patients has not been researched. Process-based research using methods such as Experience Sampling, which could record the moment by moment effects of interactions of patients’ emotional states over a long time period rather than a one-off cross-sectional assessment may help address this issue. Process-based research also help understand how high EE and low EE response styles develop and therefore in informing the development of interventions to improve relationship quality.

There are relatively few studies examining associations between staff characteristics and EE and no consistent evidence of associations with burnout, experience, training, or sociodemographic factors. There is some evidence of associations between dimensions of EE and attributions and also dimensions of EE and staff psychological characteristics, including personality factors and attachment styles. However, these preliminary findings need to be confirmed in future studies with larger samples, which have sufficient variability in the data to establish significant effects. Future research investigating associations between staff-patient relationships, staff attributions, and burnout is particularly important in informing the development of interventions to improve relationships. Preliminary evidence suggests that it may be possible to modify staff appraisals of symptoms and challenging behaviors. However, interventions need to be tested in more controlled studies, with longer follow-ups and using more direct measures of staff-patient relationships.

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