

Expressed Emotion Research in India: A Narrative Review

Anvar Sadath, Ram Kumar¹, Magnus Karlsson²

ABSTRACT

Background: Expressed emotion (EE) is detrimental to patients with schizophrenia, mood disorders, eating disorders and many other psychiatric and neurological disorders. However, majority of the EE literature is generated from the west, and the results of those studies may have limited application in Indian setting. Hence, we conducted this review with the main aim of understanding EE research in India and its potential role in the course and outcome of psychiatric disorders and other chronic illnesses. **Methods:** Using keywords, we performed searches of electronic databases (PubMed, IndMed, PsychInfo, Science-Direct and Google Scholar) and internet sources and a manual search in the bibliography of the retrieved articles to identify potential original research articles on EE in India. **Results:** As per the selection criteria, 19 reports of 16 studies were included and reviewed. The sample size of the EE studies ranged from 20 to 200, and majority of the studies were conducted in psychosis/schizophrenia, followed by obsessive compulsive disorder and epilepsy. Although high EE was found in most of the studies, the impact of EE on illness outcome is not well explored and only two studies examined the relationship between EE and relapse. **Discussion and Conclusion:** There is a dearth of studies on EE, especially its relationship with relapse or clinical outcomes in the Indian context. We recommend more studies in these areas which may be helpful for clinical decisions and advancement of context knowledge in EE.

Key words: *Criticality, emotional over-involvement, expressed emotion, Indian family, psychiatric illness*

INTRODUCTION

Brown *et al.* found that individuals with schizophrenia who live in families with high criticism, hostility or emotional over-involvement, known as expressed emotion (EE), are more likely to relapse than those who live in families low in these characteristics.^[1,2] After five decades of research, the EE consistently proved to be detrimental to

patients with schizophrenia,^[3-5] mood disorders^[6,7] and eating disorders.^[4,8-10] There is some emerging evidence to support its adverse effects in obsessive compulsive disorder (OCD),^[11] first episode psychosis (FEP)^[5,12] and substance use disorder.^[13,14] Apart from its role as regards the outcome of the illness, the EE itself is an indication of a maladaptive coping of the patients' relatives.^[15,16]

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EE is associated with many clinical and demographic variables of patients and caregivers^[17] – patients' functioning,^[18] employment status, cognitive functions, number of hospitalisations,^[19] premorbid adjustment, illness duration,^[20] duration of untreated psychosis,^[17] number of people living with patients and caregivers' relationship with patients^[21] being some of them. EE is also closely associated with the caregivers' stress,^[17] psychological distress,^[18] burden,^[22] coping and negative appraisal.^[23] The components of EE such as criticality, hostility and emotional over-involvement arise from differing sources^[24] and have varying effects on patients^[25] across cultures.^[26,27]

Socio-cultural milieu plays an important role in determining EE. The construct of EE is essentially cultural in nature,^[28] and different cultural groups tend to be more critical or more emotionally involved because of their cultural background.^[29] Although the studies from western culture support the association between high EE and relapse,^[30] the data from other cultures is less solid.^[27] The relationship between high emotional over-involvement and poor illness outcome is inconsistent, and emotional over-involvement may not be detrimental in all cultures.^[26]

In India, family members are the primary providers of support and care for ill family members.^[31] More than 90% of chronically mentally ill patients live with their families. The family members provide much-needed care and support including taking day-to-day care, supervising medications, taking the patient to the hospital and looking after the financial needs.^[12,32] This active involvement by the family members may occur partly because of the high sense of family responsibility, the value system and family integration, but often is a consequence of an inadequately resourced mental health system.^[33] As a result of the increased caregiving tasks, roles and responsibilities, the family caregivers experience significant stress and burden,^[12,32] and this could possibly trigger high EE, which in turn may affect the illness outcome. To date, no reviews have specifically examined the potential role of EE in the course and outcome of illness in Indian culture. The previous reviews^[26,30] had a very small representation of Indian studies. This review of Indian EE studies tries to answer the following questions.

1. In India, to what extent is EE evident among caregivers/families living with a person suffering from health or mental problems?
2. Does EE predict relapse or worsen the course and outcome of illnesses in an Indian setting?
3. What are the demographic and psychosocial correlates of EE?

METHODS

Potential studies were identified through a combination of electronic database searches, internet searches and bibliographic searches of the retrieved articles. A systematic electronic database search was performed in the PubMed and Science-Direct. Other electronic databases searched were IndMed, PsychInfo and Google Scholar. The last search was run on 7 March 2018. The first author (Anvar Sadath) performed initial literature searches and screening of the articles from the electronic databases and internet sources. The second author (Ram Kumar) performed an additional search to identify whether any potential studies had been left out.

Eligibility criteria

All the peer-reviewed published Indian research studies on EE, conducted among patients and or caregivers/families of persons with a health or mental health problems, from its inception were included. Articles published in the English language, available in an electronic database or other internet sources in the form of journal articles were included. We included all types of studies (i.e. interventional/observational) which quantitatively measured EE as a whole or any of the components of EE such as criticality, hostility, emotional over-involvement, warmth and positive regard.

Search terms

The following search terms, with a combination of three or more from each category, were used to identify the potential studies: expressed emotion, criticality, emotional over-involvement, emotional involvement, hostility, warmth, positive regard *along with* mental illness, mental disorder, schizophrenia, psychosis, mood disorder, anxiety disorder, OCD, eating disorder, dementia, epilepsy, seizures, neurological illness, physical illness, *along with* India, Indian setting, Indian families and Indian culture. The truncation symbol (*) was applied to the basic search word and phrases to get all the associated terms. The Boolean search operator AND/OR was used to combine search terms wherever appropriate.

Data extraction

A data extraction form was prepared after taking into account the review objectives/questions. The variables extracted from the articles included the details of authors, year of publication, aim of the study, participant and setting, study type/design, variables measured, EE instrument and results.

RESULTS

As the results of the search, we obtained 19 eligible EE research reports from 16 studies. A narrative summary of the research reports has been presented in Table 1.

Table 1: Summary of expressed emotion studies in India

Authors	Aim of the study	Participants and setting	Types/design	Variables measures	EE measurement	Results
Baruah <i>et al.</i> (2018) ^[34]	To examine the efficacy of a brief psychotherapeutic intervention as an adjunct to SRIs in OCD	94 OCD patients randomised into brief family interventions or SRI groups OCD clinic, NIMHANS, Bangalore	Randomised controlled trial	Illness severity, family accommodation and EE	Family Emotional Involvement (FEI) and Criticism Scale (FEICS) ^[35]	High EE (FEI and criticism) t 3-month follow-up, EE declined significantly in intervention group
Reddy and Jagannathan ^[36] (2017)	To understand the predictors of coping behaviour and EE in persons with alcohol dependence	60 adults with ADS on IP/ OP treatment from CIP, Ranchi were randomly recruited	Observational/ cross-sectional	EE coping	Level of expressed emotion scale ^[37]	Age at first intake of alcohol was associated with perceived EE. It predicted 8% variance in EE
Sadath <i>et al.</i> (2017) ^[17]	To examine how stress and support shape EE in carer's of FEP	71 carers of persons with FEP recruited from inpatient psychiatric units, NIMHANS, Bangalore	Baseline assessment of an intervention study	EE (CC&EOI), stress and social support	Family questionnaire ^[38]	High EE in bivariate analysis, EE was correlated with age of patients and DUP and inversely with family income. In the regression model, stress increased EE but social support did not influence EE
Sadath <i>et al.</i> (2017) ^[39] [Follow-up study of Sadath <i>et al.</i> (2017a) ^[17]	To assess the effectiveness of group intervention on EE and social support in carers of FEP	71 carers of persons with FEP recruited from inpatient and outpatient psychiatric units, NIMHANS, Bangalore	Quasi-experimental non-equivalent comparison group design	EE (CC&EOI), stress and social support	Family questionnaire ^[38]	Carers in the intervention group reported a reduction of EE and improvements in social support at 1-month follow-up. However, these benefits were not sustained at the 3-month follow-up
Gogoi (2017) ^[40]	To assess EE among family members of patients with schizophrenia	100 caregivers of persons with schizophrenia and patients Outpatient department and psychiatric ward of the Assam Medical College Hospital, Dibrugarh	Observational/ cross-sectional	Expressed emotion	Family Attitude Scale ^[41]	The majority of the family caregivers (79%) had low EE EE was associated with family members' age and marital status (being married). Low EE among those who had onset of illness after 33 years or above
Parija <i>et al.</i> ^[42] (2016)	To explore the burden and expressed emotion in caregivers of schizophrenia patients	40 patients with schizophrenia and their caregivers were recruited from the outpatient department of psychiatry at the Institute of Mental Health and Hospital Agra	Observational/ cross-sectional	Psychopathology, caregiver burden and EE	FEICS ^[35]	High perceived criticism Unemployment and urban residence were associated with EE
Singh and Singh (2015) ^[43]	To compare EE and quality of life of the bipolar affective disorder and schizophrenia patients	200 re-hospitalised patients with BPAD and schizophrenia. Study conducted in RINPAS, Ranchi	Observational/ cross-sectional/ comparative design	EE & quality of life	Attitude questionnaire ^[44]	All the domains of EE were higher among persons with schizophrenia than persons with BPAD
Verma <i>et al.</i> (2015) ^[45]	To understand the influence of perceived EE, stigma and comorbid depression among persons with epilepsy	80 persons with epilepsy recruited from the Neurology Department OPD of AIIMS, New Delhi	Observational/ cross-sectional/ comparative design	Depression Perceived EE stigma	Level of expressed emotion scale ^[37]	Half of the patients perceived high EE. EE significantly influenced depression and stigma. Patients with high EE were thirteen times more likely to have depression and eight times more likely to have stigma than patients in low EE
Koujalgi <i>et al.</i> (2014) ^[46]	To compare EE in patients with OCD and normal control	30 persons with OCD and 30 age- and sex-matched controls. Samples collected from a medical college at Belgaum, Karnataka	Observational/ cross-sectional/ Case control study	Severity of OCD & EE	Family Emotional Involvement and Criticism Scale (FEICS) ^[35]	High EE in OCD group All the domains of EE were higher in the OCD group than for the normal control

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Authors	Aim of the study	Participants and setting	Types/design	Variables measures	EE measurement	Results
Cherian <i>et al.</i> (2014) ^[47]	To examine the effect of family accommodation (FA) and EE on 1-year and EE on 1-year naturalistic outcome of OCD	94 OCD patients and their primary caregivers were followed up for 1 year with assessment in every trimester. OPD, NIMHANS	Observational/longitudinal	Severity of OCD, functioning, work and social adjustment, quality of life, EE, family accommodation and family burden	FEICS ^[35]	Above average EE Emotional involvement was high as compared to criticism Perceived criticism inversely correlated with relatives' psychological quality of life and over-involvement inversely correlated with psychological, social and environmental quality of life Non-remitters compared to remitters had higher baseline score of EE
Nirmala <i>et al.</i> (2011) ^[22]	To explore the relationship between caregivers' burden and level of expressed emotions by the patients with schizophrenia	35 patients with schizophrenia and their caregivers were recruited from the rehabilitation centre at NIMHANS	Observational/cross-sectional	Caregiver burden and expressed emotion	FEICS ^[35]	High EE (high perceived criticism and emotional involvement). EE was not associated with caregiver burden
Singh and Singh (2011) ^[48]	To study the relationship between EE and behavioural problems among children with epilepsy	30 epilepsy patients (15 boys and 15 girls) attending the Neurology OPD of the Institute of Human Behaviour and Allied Sciences, Delhi	Observational/cross-sectional	Expressed emotion and behavioural problems	FEICS ^[35]	Mild-to-moderate EE No significant gender difference in perception of EE
Devaramane <i>et al.</i> (2011) ^[49]	To examine the impact of a brief family-based intervention on carers' functioning, patients' psychopathology and relapse	20 patients with schizophrenia and their primary carers from a medical facility in Udupi, Karnataka	Intervention study. Assessments were carried out at baseline and at 3 months	Psychopathology, EE, burden and coping	FEICS ^[35]	Above average EE Emotional involvement was high as compare to criticism Significant difference in EE from baseline to 3 months follow-up
Hazra <i>et al.</i> (2010) ^[50]	To study the characteristics of EE in joint and nuclear families	60 key relatives of persons with schizophrenia, each from nuclear and joint families. Outpatient department and schizophrenia clinic of the Central Institute of Psychiatry, Ranchi	Observational/cross-sectional	EE attitude to mental illness	Attitude questionnaire ^[44]	There was a significant difference between nuclear and joint families on EE. The key relatives of joint families showed positive attitudes
Shanmugiah <i>et al.</i> (2002) ^[51]	To explore the relationship between OCD and EE in an Indian population	35 consecutive patients with obsessive compulsive disorder, who presented to the OCD clinic at the NIMHANS, Bangalore	Observational/cross-sectional	Severity of OCD & EE	FEICS ^[35]	Above average EE EE was not correlated with YBOCS score or any other demographic or illness variables
Wig <i>et al.</i> (1987) ^[52]	To measure the components of expressed emotion among two samples of relatives of first-contact patients from Aarhus (Denmark) and Chandigarh (India) (data derived from a WHO sponsored multicentre study)	24 caregivers from Denmark and 104 samples from Chandigarh, India. The majority of the patients were diagnosed with schizophrenia	Observational/cross-sectional/comparative	EE	Camberwell Family Interview	The Danes were very similar in most respects to samples of British relatives, whereas the Indian relatives expressed significantly fewer critical comments, fewer positive remarks, and less over-involvement. Within the Chandigarh sample, city-dwellers were significantly more expressive than villagers of all EE components except over-involvement

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Authors	Aim of the study	Participants and setting	Types/design	Variables measures	EE measurement	Results
Leff and Ghosh (1987) ^[53] Follow-up assessment of Wig <i>et al.</i> (1987) ^[52] study	To examine the relationship between EE and relapse in 1-year follow-up (data derived from a WHO sponsored multicentre study)	93 caregivers of patients, 78 of whom had a centre diagnosis of schizophrenia. 1-year follow-up of patients who had made a first contact with psychiatric services in Chandigarh, North India	Observational/follow-up assessment of the cohort	EE illness outcome	Camberwell Family Interview	Significant relationship between high EE and relapse However, only hostility was found to be significantly linked with relapse Critical comments and emotional over-involvement showed a tendency to be associated with relapse
Sethi <i>et al.</i> (1982) ^[44]	To compare the attitudes of the key relatives of schizophrenia patients and relatives of disturbed patients (scale validation study)	46 relatives of schizophrenia patients and 41 relatives of disturbed patients hospitalised in a medical college at Lucknow	Observational/scale validation study	EE	Attitude questionnaire ^[44]	No group differences in critical comments, hostility, warmth and emotional involvement domains
Trivedi <i>et al.</i> (1983) ^[54] Follow-up study of Sethi <i>et al.</i> ^[44]	To study the attitudes of the key relatives towards the patient on the course of schizophrenia	45 key relatives of persons with schizophrenia who were on OP treatment in a medical college, Lucknow	Observational/follow-up study	EE, clinical course and social functioning	Attitude questionnaire ^[44]	There was a trend towards the relatives of the relapsed or continuously ill patients expressing more critical comments, hostility, dissatisfaction and being more emotionally over-involved in comparison with the relatives of symptom-free patients

ADS – Alcohol dependence syndrome; FEP – First episode psychosis; OCD – Obsessive compulsive disorder; EE – Expressed emotion

Study characteristics

As per the selection criteria, 19 reports of 16 studies were included and reviewed. Three studies^[17,44,52] produced six reports which included three follow-up reports. The sample sizes of the 16 studies were 64,^[34] 60,^[36] 71,^[17] 100,^[40] 40,^[42] 200,^[43] 80,^[45] 30 (30 comparison group),^[46] 94,^[47] 35,^[22] 30,^[48] 20,^[49] 60,^[50] 35,^[51] 104 (24 comparison group)^[52] and 46.^[44] Samples across the studies ranged from 20 to 200. Most of the studies were conducted in inpatient/outpatient (IP/OP) units of psychiatry tertiary centres/medical colleges. The highest number of studies were conducted on schizophrenia/psychosis (eight studies),^[17,22,40,42,44,49,50,52] followed by OCD (four studies),^[34,46,47,51] while two studies were on epilepsy,^[45,48] one study was on alcohol dependence syndrome (ADS)^[36] and one comparative study was on schizophrenia and bipolar affective disorder.^[43] Most of the studies were observational and cross-sectional in nature; however, three studies were longitudinal/follow-ups and three were interventional/experimental. The Family Emotional Involvement and Criticism Scale (FEICS) was the most commonly used instrument to measure EE (eight studies), and all the studies with OCD samples used this instrument. The second most commonly used instrument was the Attitude Questionnaire (four studies).

Majority of the EE studies (13 studies) were conducted in the last decade, while two studies were carried

out more than three decades ago. In terms of the professional affiliation of the first/corresponding authors, the majority of the EE studies were conducted by psychiatrists (seven studies), psychiatric social workers (five studies) and clinical psychologists (two studies), while one study each was conducted by researchers with neurology and psychiatric nursing backgrounds.

Extent of EE in Indian studies

Among the 13 studies that examined the EE level, 9 reported above average or high EE among most of the participants^[17,22,34,42,43,46,47,49,51] or half of the participants,^[45] while 3 studies reported low EE.^[40,48,55] A multicentre study with a comparison of Danes and Indian samples suggested that Indian relatives express significantly fewer critical comments, fewer positive remarks and less over-involvement.^[55] However, we could not find support for this in the other studies. Although high EE prevailed irrespective of diagnosis, all the four studies in OCD samples demonstrated high or above average EE^[34,46,47,51] and five studies on schizophrenia/psychosis reported high EE.^[17,22,42,43,49] In the two studies on epilepsy, one reported high EE among half of the study participants^[41] while the other reported mild-to-moderate levels.^[48]

Role of EE in relapse/clinical outcome

Only two studies examined the relationship between EE and relapse. In this, Leff *et al.* (follow-up study of

Wig *et al.*^[52]) followed up 93 patients predominantly schizophrenia diagnosis for 1-year period and found strong evidence for EE – hostility being statistically linked to relapse, while critical comments and emotional over-involvement showing only a tendency to be associated with relapse.^[53] Trivedi *et al.* followed up 45 relatives of patients with schizophrenia for a 6-month period and observed a trend among the relatives of relapsed or continuously ill patients to express more critical comments, hostility and over-involvement than relatives of symptom-free patients. However, both of the above studies are quite old, and no recent evidence is available to reach a reliable conclusion on EE and relapse.

Although the direct association between EE and relapse in conditions other than schizophrenia was not examined in the studies, many studies have indicated the detrimental effect of EE on health/illnesses. For example, Verma *et al.*^[45] observed that EE significantly influenced depression and stigma, and high EE patients with epilepsy were 13 times more likely to have depression than low EE patients with epilepsy. Another study observed that OCD patients who are not in remission had high baseline scores of EE in comparison to those in remission, which implied a possible EE effect on remission.^[47] However, differences exist; one study found that the severity or other illness variables of OCD were not associated with EE.^[51]

Demographic and psychosocial correlates of EE

A study that examined the role of demographics in ADS found that higher age at first intake of alcohol significantly increased EE. Other studies have shown that patients' age, duration of untreated psychosis, family income (inversely),^[17] family members' age and marital status (being married),^[40] type of family,^[50] unemployment and urban residence^[42] were associated with EE in psychosis/schizophrenia. Sadath *et al.* observed that carers' social support inversely correlated with EE, but could not predict in the regression model, while carers' stress was a significant predictor of EE in FEP.^[17] However, another study could not demonstrate any relationship between EE and burden.^[22] In OCD, carers' perceived criticism and over-involvement inversely correlated with their psychological quality and with the social and environmental quality of life.^[47]

DISCUSSION

Although a fair number of EE studies are available from India, they are largely exploratory in nature and hence many critical aspects were unaddressed. EE as a concept received attention because of its significance in the course and outcome of illnesses, and a substantial body of research has demonstrated that EE predicts

clinical relapse in a number of distinct psychiatric disorders.^[56] For example, a meta-analysis of 27 studies confirmed that EE significantly predicts relapse in schizophrenia.^[30] EE also correlated with relapse in bipolar I disorder^[57] and substance dependence,^[58] predicted outcome in anxiety disorders^[59] and explained pathology in eating disorder.^[10] However, in this review it was found that recent Indian studies have not examined the predictive validity of EE on relapse in any illnesses. Also, not many studies have examined the role of EE on the course of illnesses. While EE was observed to be high in most of the studies reviewed here, the potential impact of EE on illness was not examined well. We recommend to conduct studies to examine the role of EE in predicting relapses and in illness severity in this culture. Such studies need to be longitudinal/prospective in nature so that the influence of EE on the course of the illness can be measured accurately over the time period.

Western studies have also examined the effects of EE in many chronic physical/neurological disorders like cancer,^[60,61] dementia^[62,63] and epilepsy.^[64,65] Although we have two published EE studies on epilepsy, many important aspects seem unaddressed. Evidence from the west suggests that high EE is associated with significantly higher seizure frequency and that high criticism resulted in poor drug compliance, while positive EE, such as warmth, resulted in better clinical and pharmacological compliance in seizure disorders. High family criticism correlated with higher depression and anxiety among the patients.^[64] A recent meta-analysis of EE studies on dementia found that relatives of those with high EE have increased depression and burden, and they are more likely to attribute the patient's problems to factors that are personal and controllable by the patient. Many of these findings have significance for service delivery for patients and caregivers. However, we do not have relevant literature from India to verify these findings and we suggest that future research should focus on this area.

Although EE includes criticality, emotional over-involvement, hostility, warmth and positive regard, the most commonly measured EE components are the first three (negative EE). Positive EE (warmth and positive regard) is often less emphasised in the literature. This is because of the detrimental effects of negative EE on the course and outcome of the illness. Though positive EE is expected to act as a protective factor, not many studies have been done on these aspects. However, we think it might be very relevant to study the positive EE in Indian culture because of the critical role and support of the families in the care and treatment of patients. This might be helpful for deciding strength-based approaches to treatment.

Finally, all the negative EE components need not necessarily be detrimental to patients. Criticality and emotional over-involvement can have varying effects on patients across cultures. A systematic review of 34 studies concludes that the relationship between high emotional over-involvement and poor outcome is inconsistent across cultures.^[26] The construct and measurement of emotional over-involvement itself are culture-specific. The effect of high emotional over-involvement could be moderated by a high warmth and high mutual interdependence in kin relationships.^[26] Carers with high emotional over-involvement have attribution styles similar to those of low EE relatives. They may attribute a patient's illness to external factors the patient cannot control, as opposed to hostile and critical relatives who consider the illness as internal and controllable by the patients.^[66] However, emotional over-involvement does more harm to the relative as it increases stress and the burden of care.^[24] Thus, we also recommend for Indian studies examining differential predictors of critical comments and over-involvement of the families caring for patients.

CONCLUSION

EE was found to be high in most studies. The impact of EE on illness outcome is not well explored in Indian studies, as only two studies examined the relationship between EE and relapse. Hence, we recommend more studies to address this gap and to build evidence base in this area.

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Conflicts of interest

There are no conflicts of interest.

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