Assessment of expressed emotion in family members of patients with schizophrenia in a selected Medical College Hospital, Assam

Abstract

Background: Schizophrenia is a severe form of mental disorder which is chronic and disabling in nature. Family members of schizophrenia patients often show negative attitude with higher range of expressed emotion (EE) towards their relative as they experience significant stress in coping with caring such patients. **Material and methods:** The present study was conducted to assess EE of family members of patients with schizophrenia. The study setting was outpatient department and psychiatric ward of Assam Medical College Hospital, Dibrugarh. Hundred schizophrenia patients and 100 family members were included in the study through purposive sampling technique. Tools used in the study were socio-demographic and clinical datasheet of patient, socio-demographic datasheet of family member, and Family Attitude Scale. **Results:** Majority of family members (79%) had low level of EE. Their EE had significant association with age of onset of illness. EE was higher when schizophrenia started before 20 years of patient's age. Age and marital status of the family members had significant associations with their EE. It increased along with increased age of the family members whereas majority of the younger family members had low level of EE. Married family members had higher level of EE. **Conclusion:** There is need for psychosocial nursing intervention for the family members of schizophrenia patients to help them cope with their stress.

Keywords: Attitude. Stress. Coping. Psychosocial Nursing.

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Introduction

Schizophrenia is severe and chronic mental disorder. It occurs in all class, colour, and religion globally. 26.3 million people in the world suffered from schizophrenia.[1] It was one of the most common causes of disability (16.7 million people of all ages were disabled in the world). In India, 4.3-8.7 million people suffered from this illness.[2]

Family members are the direct care providers. Taking care of schizophrenia is very stressful due to its chronic and disabling nature, poor outcome, and varied symptoms. Besides that economic burden, lack of support system, inadequate information on the illness, negative attitude, and stigma from society- all act as stressors on the family members. In turn, they start to show negative attitude to the patients in the form of high expressed emotion (EE).

Specific characteristics of family-patient interactions and their associations have been observed by researchers and found that it has importance in the course and prognosis of mental illnesses. And this adverse family interaction or environment is termed as EE. Criticisms by family members, hostile and emotionally over involved behaviours towards the patients are regarded as high EE. Many research studies have proved that high EE by family members towards the patient is one of the strong predictors of relapse in schizophrenia.[3-7] One study reported that among all the components of EE, critical comment was an indicator of prognosis in the course of schizophrenia.[8]

There are many studies conducted on EE of family members of schizophrenia patients around the world. Few are as follows.

Suhail *et al.*[9] found that Pakistani relatives showed higher levels of EE as compared to those reported from many other countries. The relatives had more hostility (57%), and emotional overinvolvement (EOI) (45%). The researchers found that most of the women who were mothers had high emotional over involvement.

Another study conducted in Pakistan by Ikram *et al.*[10] found that 75% Pakistani relatives had high EE, critical comment 3.8%, hostility 59%, warmth 3.33%, positive remarks 1.17%, and emotional over involvement 53%. When the researchers compared these findings cross culturally with studies from many other countries they found higher levels of overall index of EE in Pakistani. They also found that Pakistani relatives were more hostile and emotionally over involved as compared to many other countries.

Bogojevic *et al.*[11] found that EE of family members of 71.4% of patients who experienced clinical worsening was high before and during long-term hospitalisation. This was more in case of parents (62.5%), and more frequently for mothers. Illness course was better in case of patients having low EE by family members.

In another study, the levels of family burden, family interactions, and EE in first episode psychosis patients were assessed and it was seen that EE was high in half of the key-relatives.[12]

Hence, the literature reviewed gives an overview of the importance of family member's or caregiver's EE on the course and prognosis of the illness. No study was found done in Assam and the northeast part of India.

Material and methods

The research approach of the present study was non-experimental, descriptive, cross-sectional, and survey type. The aim of the present study was to assess EE in family members of patients with schizophrenia in a selected Medical College Hospital, Assam. The objectives of the study were:

i. To assess EE of family members of patients with schizophrenia
ii. To find association of EE of family members with socio-demographic variables of patients
iii. To find association of EE of family members with clinical variables of patients
iv. To find association of EE of family members and their socio-demographic variables

Study setting

The study was conducted in the outpatient department (OPD) and psychiatric ward of Assam Medical College Hospital (AMCH), Dibrugarh which is the premier and oldest medical institution in northeastern India. It is the tertiary medical referral centre for upper part of Assam and neighbouring states, including Arunachal Pradesh.

Time period

The study was done during January 2014 to January 2016.

Definition of the population

In this study, the population consisted of family members accompanying the patients with schizophrenia taking treatment from outpatient and indoor services of the selected hospital during the period of data collection.

Study variables

- Dependent variables: EE of family members of patients with schizophrenia.
- Extraneous variables: Selected variables under socio-demographic profile and clinical/illness profile of patients and socio-demographic variables of family members.

Inclusion/exclusion criteria

Inclusion criteria

- Family members of patients suffering from schizophrenia for more than one year
- Family members who were directly involved in the care of the patient
- Family members staying with the patient for more than one year
- Both genders
- Family members of adult age group
- Those who understoond the nature of the study and give consent.

Exclusion criteria

- Family members suffering from mental illness
- Family members not staying with the patients and not directly involved in the care giving.

Sample size

Hundred family members of 100 patients who fulfilled the sampling criteria defined in the study.

Sampling design: Purposive sampling technique was used in this research study.

Collection of data: The data collection was done from the family members of patients suffering from schizophrenia visiting OPD and psychiatric ward settings of AMCH, Dibrugarh after getting institutional ethical clearance and permission, and by interviewing the participants after obtaining their formal written permission.

Tools used in the study

1. Socio-demographic and clinical datasheet of patient
2. Socio-demographic datasheet of family member
3. Family Attitude Scale (FAS)[13]

The tool numbers one and two were semi-structured, developed by the researcher. FAS is a standard tool developed by Kavanagh *et al.*[13] There are 30 items. Scoring is done on Likert scale from zero to four. Total score is 120. High score on the scale denotes high expressed emotion. Earlier studies had reported that optimum cutoff score of 60 and above in family members predicted relapse in the patients.[14] This tool was translated into Assamese- the vernacular language, pilot tested (reliability=0.96), and used in this study.

Results

Findings related to socio-demographic profile of patients

Mean age of the patients was 32.02 years (standard deviation [SD]=10.10).

Table 1 shows that majority of the patients were from age group of 18-38 years (77%), were almost of equal gender (male 49%, female 51%), majority were educated up to high school level (37%), married (53%) followed by unmarried (43%), were unemployed (35%), followed by homemaker (27%), maximum number of patients did not have any income (62%).

Table 1: Socio-demographic findings of patients (n=100)

Variables	Categories	Frequency
Age (years)	18-38	77
	39-59	21
	≥60	2
Gender	Male	49
	Female	51
Educational level	Illiterate	15
	Primary	9
	Middle school	16
	High school	37
	Matriculation	13
	Higher secondary and above	10
Marital status	Unmarried	43
	Married	53
	Divorced/separated	4
Occupation	Unemployed	35
	Homemaker	27
	Daily wage earner	18
	Cultivator	6
	Businessman	3
	Service	11
Monthly income (rupees)	Nil	62
	1500	5
	1501-3000	18
	3001-9000	9
	9001-15000	3
	>15000	3

Table 2: Illness (schizophrenia) profile of the patients (n=100)

Variables	Categories	Frequency
Age of onset of illness (years)	≤20	38
	21-32	45
	33-44	14
	≥45	3
Duration of illness (years)	1-5	60
	6-10	23
	>10	17
Number of hospitalisation	<5	89
	6-10	8
	>10	3
Current treatment setting	OPD	6
	Indoor	94
Medication status	Regular	18
	Irregular	36
	Stopped	46
Cost of medicine per month (rupees)	100-500	4
	501-1000	41
	>1000	17
Expenditure of treatment borne by	Self	16
	Father	31
	Mother	10
	Son	5
	Husband	22
	Brother	13
	Sister	1
	Others	2

OPD=Outpatient department

Findings related to illness profile of the patients

Table 2 shows that majority of the patients' (45%) illness started between 21-32 years of life followed by below 20 years in 38%. The duration of illness of majority of the patients (60%) was one to five years. Majority of the patients included in the study were admitted to hospital for treatment of this illness for less than five times (89%). Nine four per cent of the patients were from indoor setting whereas only six per cent were taking treatment from OPD. Majority of the patients stopped medicines (46%), 36% were irregular, and only 18% patients were regular on medication. Cost of medicines of patients' treatment was equal between Rs. 100-500 (42%) and Rs. 501-1000 (41%). In most of the patients, treatment expenditure was borne by fathers (31%) followed by husbands (22%).

Findings related to socio-demographic profile of family members

Mean age of the family members was 43.06 years (SD=12.97).

Table 3 reveals that the subjects in the present study were mostly of 39-59 years (48%), were equally of both the genders (male=51%, female 49%), majority were married (72%),

educated up to primary level (34%), daily wage earner (28%) followed by homemaker (24%), majority had income Rs. 1501-3000/month, Hindu (85%), Assamese speaking (62%), from rural background (79%), Nontribal (76%), majority were from nuclear family (77%), were mothers (30%) followed by husbands (20%), 90% of them stayed with the patient more than ten years, 75% of family members had more than ten hours of contact with patient daily.

Findings related to EE of family members

Mean score of EE of family members (n=100) was 39.59 (median=34, mode=23) with SD=20.43 which can be assumed as low EE (maximum total FAS score=120). Seventy nine per cent family members had low EE. Only 21% had high level of EE.

Table 4 shows that there were no significant association among the socio-demographic variables of patients and level of EE of family members (p>0.05).

Table 5 shows that duration of illness, medication status, current treatment setting, cost of medicine per month, and who bears the treatment expenditure did not have any significant association with EE level. But age of onset (p=0.020

Table 3: Socio-demographic profile of family members (n=100)

Variables	Categories	Frequency
Age (years)	18-38	39
	39-59	48
	≥60	13
Gender	Male	51
	Female	49
Educational level	Primary	34
	Middle school	12
	High school	29
	Matriculation	16
	Higher secondary and above	6
Marital status	Unmarried	15
	Married	72
	Widow/widower	13
Occupation	Unemployed	6
	Homemaker	24
	Daily wage earner	28
	Cultivator	15
	Businessman	8
	Service	19
Monthly income (rupees)	Nil	13
	1500	14
	1501-3000	30
	3001-9000	21
	9001-15000	13
	>15000	9
Religion	Hindu	85
	Muslim	11
	Christian	4
Language	Assamese	62
	Bengali	6
	Others	32
Domicile	Rural	79
	Semi-urban	11
	Urban	10
Ethnicity	Tribal	24
	Nontribal	76
Type of family	Nuclear	77
	Joint	23
Relationship with patient	Father	13
	Mother	30
	Husband	20
	Wife	13
	Son	5
	Daughter	2
	Brother	12

(Contd...)

Table 3: *(Continued)*

Variables	Categories	Frequency
	Sister	3
	Others	2
Duration of stay with patient (years)	1-5	5
	6-10	5
	>10	90
Contact per day with patient (hours)	1-5	7
	6-10	18
	>10	75

which is <0.05) and number of hospitalisation for the illness (p=0.004 which is <0.05) had significant association with EE of family members.

Table 6 shows that there were significant associations of EE of family members with their age and marital status. Family members' gender, educational level, occupation, monthly income, religion, language, domicile, ethnicity, relationship with patient, type of family, duration of stay with patient, contact per day with patient did not have significant association with level of EE (p>0.05).

Discussion

Socio-demographic variables of patients

Patients' mean age in the present study was 32.02 years (SD=10.10). In support, few study findings also reported more or less similar mean ages of patients, e.g. 30.13 years (SD=9.14) by Mottaghipour *et al.*,[4] 33.5 years (SD=8.5) by Nirmala *et al.*,[15] and 29.6 years (SD=7.9) by Kopelowicz *et al.*[16] Therefore, it can be said that the present study findings also reflect the worldwide epidemiology of schizophrenia that it affects people at their early ages.

In the present study, most of patients were high school (37%) educated. In support, Bharti[17] and Dorian *et al.*[18] also reported similar findings.

There were more married patients in the present study (53%). Similar findings were reported by another study.[15] In contrast, few studies reported that majority of the patients in their study were unmarried.[5,7,16]

Most of the patients in the study were unemployed and did not have any income. Previous studies also revealed similar findings.[4,5,19] These finding are reflecting the universal picture of the illness- its debilitating and burdensome nature.

In the present study, age of onset of the illness in most of the patients (45%) was during 21-32 years of their life. Similarly, Kopelowics *et al.*[16] found mean age of onset of the illness was 23.5 years (SD=5.9). Another study[19] reported mean age of onset of illness was 30.2 years (SD=11.3).

Socio-demographic variables of family members

Mean age of the family members in the present study was 43.06 years (SD=12.97). Similar findings were reported

Table 4: Association between EE of family members with socio-demographic variables of patients (n=100)

Variables	Categories	EE level		Total F	χ² value	df	p-value
		<60 (low EE) F	>60 (high EE) F				
Age (years)	18-38	62	15	77	0.466	1	0.495 NS
	39 & above	17	6	23			
Gender	Male	41	8	49	1.265	1	0.261 NS
	Female	38	13	51			
Educational level	Illiterate	13	2	15	1.288	4	0.898 NS
	Primary	8	1	9			
	Up to high school	40	13	53			
	Matriculation	10	3	13			
	Higher secondary & above	8	2	10			
Marital status	Unmarried	31	12	43	2.656	2	0.239 NS
	Married	45	8	53			
	Others	3	1	4			
Occupation	Unemployed	23	12	35	5.347	3	0.139 NS
	Homemaker	23	4	27			
	Daily wage earner	15	3	18			
	Others	18	2	20			
Monthly income (rupees)	Nil	45	17	62	4.349	3	0.191 NS
	<3000	20	3	23			
	3001-9000	9	0	9			
	>9000	5	1	6			

EE=Expressed emotion, df=Degree of freedom, NS=Statistically not significant at 0.05 level

by different authors like 48.45 years (SD=13.55) by Suhail et al.,[9] 46.69 years (SD=14.88) by Ikram et al.,[10] 47.3 years (SD=13.2) by Nirmala et al.,[15] 47.2 years (SD=14.4) by Raune et al.,[19] 48.7 years (SD=13.2) by Scazufca et al.[20]

The family members in the present study were almost of equal gender. It may be due to the fact that females are given equal status in Assamese society. Specially, women of upper part of Assam are seen to take equal responsibility in agriculture, household activities, etc. like men.

There was more number of mothers in the family members in the present study. Different researchers also reported mothers as their major group of subjects in their studies.[5,7,8,10,16,19,20] It reflects that mothers of all human being are same in showing their love and caring attitude towards their sick children.

In the present study, 90% of the family members were staying with the patient for more than ten years and 75% family members had more than ten hours of contact per day with the patient. It shows that the family members of the present study were close relatives and spent quite a long time with the patients.

EE of family members

The present study revealed that mean score of EE of family members was 39.59 (SD=20.43) which can be regarded as low EE. When EE was categorised into low EE and high EE group, it was seen that 79% family members had low EE and only 21% had high level of EE. In support of these findings, Kopelowicz et al.[16] found that maximum number of the key relatives (67%) in their study had low EE. Dorian et al.[18] also reported that only 19% of the caregivers were high in EE. In contrast, most of the studies conducted earlier provide evidences of high EE in family members or caregivers.[5, 6, 9,10,15,19,20]

The present study findings indicate that Assamese people had more acceptance and caring attitude towards mentally ill relative. Their acceptance was expressed verbally by themselves during the interviews with the researcher. This might be the cause of having lower level of EE towards the patients. A pervious study also reported that the caregivers having low EE had higher overall acceptance.[18]

In a review study, Brady and McCain[21] found that studies conducted in Non-westernised countries like Asian, African, Middle Eastern Countries reported findings which

Table 5: Association of EE of family members with clinical variables of the patients (n=100)

Variables	Categories	EE level		Total F	χ^2 value	df	p-value
		<60 (low EE) F	>60 (high EE) F				
Duration of illness of patients (years)	1-5	48	12	60	5.844	2	0.050 NS
	6-10	21	2	23			
	>10	10	7	17			
Age of onset of illness (years)	<20	25	13	38	6.629	2	0.038 S
	21-32	38	7	45			
	33 & above	16	1	17			
Number of hospitalisation	<5	71	18	89	0.293	1	0.588 NS
	≥5	8	3	11			
Current treatment setting	OPD	5	1	6	0.072	1	0.788 NS
	Indoor	74	20	94			
Medication status	Regular	14	4	18	0.172	2	1.000 NS
	Irregular	29	7	36			
	Stopped	36	10	46			
Cost of medicine per month (rupees)	100-500	36	6	42	3.257	2	0.196 NS
	501-1000	32	9	41			
	>1000	11	6	17			
Expenditure bearer	Self	15	1	16	5.026	4	0.254 NS
	Parents	30	11	41			
	Children	3	2	5			
	Spouses	19	3	22			
	Sibling & others	12	4	16			

EE=Expressed emotion, df=Degree of freedom, OPD=Outpatient department, S=Statistically significant at 0.05 level, NS=Statistically not significant at 0.05 level

were suggestive of some positive aspects associated with living with a family member who had schizophrenia.

Association of EE of family members with socio-demographic variables of patients

The present study findings did not reveal any significant association of the socio-demographic variables of patients and level of EE of family members. Similarly, Nirmala *et al.*[15] found no association of age, marital relationship of patients with EE of family members. Another study[4] reported no association of family type, place of residence, gender, marital status, and employment status of patients with EE. Bharti[17] also found no significant association of EE of family members with age, sex, religion, education, residence, socioeconomic status, except marital status. She found that patients who were single perceived higher criticism.

In contrast, findings of Carrà *et al.*[22] revealed significant association of EE of relatives and education of patients. In case of educated patients, EE level of relatives was low.

Association of EE of family members with clinical variables of the patients

In the present study, the age of onset of the illness had significant associations with EE. EE of the family members was lower for the patients whose illness started after 33 years of their lives. Early onset of the illness might have caused care burden due to long term duration causing increased EE of the family members. On the contrary, researchers of a study[19] reported that length of illness, age of onset of the illness, and severity of symptoms were not associated with high level EE.

In the present study, duration of illness, medication status, current treatment setting, cost of medicine per month, and who bears the treatment expenditure did not have any significant association with EE level. Similarly, a study done in India also reported no association of duration of illness of patient with EE.[15] King and Dixon[7] also found that high EE did not have association with medication compliance of the patients. Ng[23] reported that the length of the patient's illness history, i.e., the number of years in which the patient has been diagnosed and treated for schizophrenia was not

Table 6: Association of EE of family members with their socio-demographic variables (n=100)

Variables	Categories	EE level		Total F	χ^2 value	df	p-value
		<60 (low EE) F/%	>60 (high EE) F/%				
Age (years)	18-38	37	2	39	14.513	2	0.001 S
	39-59	36	12	48			
	≥60	6	7	13			
Gender	Male	40	11	51	0.020	1	0.887 NS
	Female	39	10	49			
Educational level	Primary	29	5	34	1.479	3	0.728 NS
	Up to high school	31	10	41			
	Matriculation	12	4	16			
	Higher secondary & above	7	2	9			
Marital status	Unmarried	15	0	15	8.135	2	0.010 S
	Married	56	15	71			
	Others	8	6	14			
Occupation	Unemployed	5	1	6	2.765	3	0.431 NS
	Homemaker	16	8	24			
	Daily wage earner	23	5	28			
	Others	35	7	42			
Monthly income (rupees)	Nil	10	3	13	4.830	3	0.183 NS
	≤3000	32	12	44			
	3001-9000	20	1	21			
	>9001	17	5	22			
Religion	Hindu	69	16	85	2.252	2	0.284 NS
	Muslim	7	4	11			
	Christian	3	1	4			
Language	Assamese	45	17	62	3.819	2	0.133 NS
	Bengali	6	0	6			
	Others	28	4	32			
Domicile	Rural	65	14	79	3.168	2	0.191 NS
	Semi-urban	8	3	11			
	Urban	6	4	10			
Ethnicity	Tribal	21	3	24	1.375	1	0.241 NS
	Nontribal	58	18	76			
Relationship with patient	Parents	30	13	43	4.274	3	0.201 NS
	Spouses	27	6	33			
	Children	7	0	7			
	Siblings & others	15	2	17			
Type of family	Nuclear	59	18	77	1.140	1	0.286 NS
	Joint	20	3	23			
Duration of stay with patient (years)	≤10	10	0	10	2.954	1	0.083 NS
	>10	69	21	90			
Contact per day with patient (hours)	≤10	23	2	25	3.396	1	0.065 NS
	>10	56	19	75			

EE=Expressed emotion, df=Degree of freedom, S=Statistically significant at 0.05 level, NS=Statistically not significant at 0.05 level

related to the level of family's emotional involvement, nor the level of family's criticism.

Association of EE of family members with their socio-demographic variables

In the present study, it was found that age of family member was significantly associated with their EE level. Family members of older age group (39-59 years and 60 and above) had high level of EE whereas majority of the younger family members had low level of EE. It shows that stress of taking care of a mentally ill patient at older age might have increased their EE level. But in contrast, a study report[19] revealed of having no significant correlation of caregiver's age with the level of EE.

The present study findings also showed that EE was significantly associated with marital status of the family members. Married family members had higher levels of EE towards their relative patients. It may be due to the fact that the married family members already had responsibility towards their family and an added responsibility of caring a schizophrenia patient lead to more stress in them, therefore they end up showing their frustration on the patients. In contrast, a study found no association of marital status of caregivers with their EE towards the patient.[4]

In the present study, family members' gender, educational level, occupation, monthly income, religion, language, domicile, ethnicity, relationship with patient, type of family, duration of stay with patient, and contact per day with patient were not associated with level of EE (p>0.05). In support of this, Mottaghipour *et al*.[4] also found that caregivers' gender, type of family, place of residence, and employment status was not associated with EE. King and Dixon[7] found no association between amount of contact and high EE.

One important finding of the current study is that there was no association of EE with relationship of family members with the patient. Only one study supported this finding.[4] On the other hand, few studies done previously reported having association of different types of family members/caregivers and EE. For example, Pourmand *et al*.[5] reported that mothers (58%) and fathers (32%) had high EE. Cutting *et al*.[24] also found that parents had higher EOI ratings. Ng[23] found that patients reported highest level of EE from sibling caregiver type followed by parents and spouses.

Implication

The findings of the study may be useful for the mental health professionals for planning family oriented psychosocial interventions.

Limitation

The study was done on family members who attended inpatient and outpatient services of AMCH, Dibrugarh; therefore, the data cannot be generalised. The samples were selected using purposive sampling method; therefore, the sample is not representative of families of all schizophrenia patients.

Conclusions

EE of family members is an important issue in schizophrenia as it has direct relationship with severity of the illness, its course, and prognosis. Assessment of EE in family members is helpful in identifying experience of distress and burden in the family members or caregivers as a primary step for family intervention. Although the present study reported low level of EE in maximum family members, there is need for psychosocial nursing care for every family members of schizophrenia patient which in turn will reduce the relapse rate, help them to effectively cope with the stress of managing the mentally ill family member at home.

References

1. World Health Organization. The global burden of disease: 2004 update. Disease incidence, prevalence and disability [Internet]. 2016 [cited 2016 Aug 15]. Available from: http://www.who.int/healthinfo/global_burden_disease/2004_report_update/en
2. Schizophrenia.com. Schizophrenia facts and statistics [Internet]. 2010 [cited on 2012 Jan 6]. Available from: http://schizophrenia.com/szfacts.htm
3. Lauriello J, Bustillo JR, Keith SJ. Schizophrenia: scope of the problem. In: Sadock BJ, Sadock VA, editors. Comprehensive textbook of psychiatry. 8th ed. Philadelphia: Lippincott Williams & Wilkins; 2005:1345-54.
4. Mottaghipour Y, Pourmand D, Maleki H, Davidian L. Expressed emotion and the course of schizophrenia in Iran. Soc Psychiatry Psychiatr Epidemiol. 2001;36:195-9.
5. Pourmand D, Kavanagh DJ, Vaughan K. Expressed emotion as predictor of relapse in patients with comorbid psychoses and substance use disorder. Aust N Z J Psychiatry. 2005;39:473-8.
6. Tanaka S, Mino Y, Inoue S. Expressed emotion and the course of schizophrenia in Japan. Br J Psychiatry. 1995;167:794-8.
7. King S, Dixon MJ. Expressed emotion and relapse in young schizophrenia outpatients. Schizophr Bull. 1999;25:377-86.
8. Marom S, Munitz H, Jones PB, Weizman A, Hermesh H. Expressed emotion: relevance to rehospitalization in schizophrenia over 7 years. Schizophr Bull. 2005;31:751-8.
9. Suhail K, Ikram A, Jafri SZ, Sadiq S, Singh SP. Ethnographic analysis of expressed emotions in Pakistani families of patients with schizophrenia. Int J Ment Health. 2011;40:86-103.
10. Ikram A, Suhail K, Jafery SZ, Singh S. Rates of expressed emotions in Pakistani relatives of patients with schizophrenia. Isr J Psychiatry Relat Sci. 2011;48:74-81.
11. Bogojevic G, Ziravac L, Zigmund D. Impact of expressed emotion on the course of schizophrenia. Eur Psychiatry. 2015;30:Suppl 1:390.
12. González-Blanch C, Martín-Muñoz V, Pardo-García G, Martínez-García O, Alvarez-Jiménez M, Rodríguez-Sánchez JM, *et al*. Effects of family psychoeducation on expressed emotion and burden of care in first-episode psychosis: a prospective observational study. Span J Psychol. 2010;13:389-95.
13. Kavanagh DJ, O'Halloran P, Manicavasagar V, Clark D, Piatkowska O, Tennant C, *et al*. The Family Attitude Scale: reliability and validity of a new scale for measuring the emotional climate of families. Psychiatry Res. 1997;70:185-95.
14. Kavanagh DJ, Pourmand D, White A, Robertson D, Halford K, Vaughan K. Predictive validity of the Family Attitude Scale in people with psychosis. Psychiatry Res. 2008;160:356-63.
15. Nirmala BP, Vranda MN, Reddy S. Expressed emotion and caregiver burden in patients with schizophrenia. Indian J Psychol Med. 2011;33:119-22.

16. Kopelowicz A, López SR, Zarate R, O'Brien M, Gordon J, Chang C, *et al*. Expressed emotion and family interactions in Mexican Americans with schizophrenia. J Nerv Ment Dis. 2006;194:330-4.

17. Bharti J. Expressed emotion among caregivers of person with schizophrenia and obsessive compulsive disorder: a comparative study. The International Journal of Indian Psychology. 2015;3:189-200.

18. Dorian M, Ramírez García JI, López SR, Hernández B. Acceptance and expressed emotion in Mexican American caregivers of relatives with schizophrenia. Fam Process. 2008;47:215-28.

19. Raune D, Kuipers E, Bebbington PE. Expressed emotion at first-episode psychosis: investigating a carer appraisal model. Br J Psychiatry. 2004;184:321-6.

20. Scazufca M, Kuipers E, Menezes PR. Perception of negative emotions in close relatives by patients with schizophrenia. Br J Clin Psychol. 2001;40:167-75.

21. Brady N, McCain GC. Living with schizophrenia: a family perspective. Online J Issues Nurs. 2004;10:7.

22. Carrà G, Cazzullo CL, Clerici M. The association between expressed emotion, illness severity and subjective burden of care in relatives of patients with schizophrenia. Findings from an Italian population. BMC Psychiatry. 2012;12:140.

23. Ng VCK. Study of family expressed emotion and relapse of male schizophrenia patients in Singapore [Internet]. Oral Communication at 4th International Social Work Conference on Health & Mental Health, Quebec City, Canada. 2004 May 23-27 [cited 2011 Jul 16]. Available from: https://www.scribd.com/document/3029633/Study-on-Family-Expressed-Emotion-and-Relapse-of-Male-Schizophrenia-Patients-in-Singapore

24. Cutting LP, Aakre JM, Docherty NM. Schizophrenic patients' perceptions of stress, expressed emotion, and sensitivity to criticism. Schizophr Bull. 2006;32:743-50.