

Family Burden and Psychopathology of Caregivers of Patients with Psychiatric Disorders: Comparing Schizophrenia and Bipolar Disorder

T.M. Torane¹, A.B. Badekar², Y.A. Matcheswalla³, N.V. Baste⁴, B.B. Mhetre⁵

¹Assistant Professor, Department of Psychiatry, Smt. Kashibai Navale Medical College, Narhe, Pune, Maharashtra.

²Assistant Professor, Department of Psychiatry, Smt. Kashibai Navale Medical College, Narhe, Pune, Maharashtra.

³Honorary Psychiatrist, Grant Medical College, Byculla, Mumbai, Maharashtra. ⁴Consultant Psychiatrist, Mansa Clinic, Aundh, Pune, Maharashtra. ⁵Associate Professor, Department of Psychiatry, Smt. Kashibai Navale Medical College, Narhe, Pune, Maharashtra.

ABSTRACT

BACKGROUND

Family burden of caregiver of patients with mental illness accounts for nearly half of the global burden of diseases. Considering the importance of the issue, the present study therefore has been undertaken, to better understand the experiences of family caregiver for patients with schizophrenia in comparison with bipolar disorders (BPAD).

METHODS

A hospital based, cross-sectional comparative study was conducted in Masina Hospital Dept. of Psychiatry. A total of 200 primary caregivers, 100 each of patients suffering from Schizophrenia and BPAD was included. The phenomena and severity of perceived burden, psychopathology of family members in both the groups were studied and compared. Burden of caregivers was assessed by using BAS scale. Psychopathology of the caregivers assessed by HDRS and HARS. Appropriate statistical tests were applied, and data was analysed using the Statistical Package for Social Sciences (SPSS) Version 16 and Primer of Biostatistics software.

RESULTS

According to BAS Score, burden perceived by caregivers of patients suffering from schizophrenia and bipolar disorder ($p=0.67$) was equal and in mild to moderate range. ($p= 0.001$). Clinically diagnosable depression and anxiety were also in mild to moderate range in both groups. Depressive symptoms (schizophrenia group $n=63\%$ & BPAD group $n=77\%$) were more common than anxiety symptoms (schizophrenia group $n=27\%$ & BPAD group $n=24\%$) in both groups. Caregivers of bipolar group ($n=77$) experienced depressive symptoms more than caregivers of schizophrenia ($n=63$) group. Majority of caregivers perceived moderate anxiety.

CONCLUSIONS

This study demonstrates that degree of caregiver burden was the same in both the disorders. Caregivers experience considerable amount of distress as a result of the care giving role, and are vulnerable to developing minor psychiatric disorders such as anxiety and depression. Mild to moderate depression appears to be more commonly present. Caregivers of BPAD are more at risk of developing psychopathology. Anxiety seems to be an early predictor of perceived burden, therefore can be helpful in aiming at early interventional strategies to reduce burden.

KEYWORDS

Caregiver, Schizophrenia, Bipolar Disorder, Family Burden (BAS-Burden Assessment Scale, HDRS- Hamilton Depression Rating Scale, HARS- Hamilton Anxiety Rating Scale)

Corresponding Author:

Dr. Amol Baliram Badekar,

Assistant Professor,

Smt. Kashibai Navale Medical College and

General Hospital, Narhe, Pune,

Maharashtra.

E-mail: amolb_22@yahoo.co.in

DOI: 10.18410/jebmh/2019/607

Financial or Other Competing Interests:

None.

How to Cite This Article:

Torane, TM, Badekar AB, Matcheswalla

YA, et al. Family burden and

psychopathology of caregivers of

patients with psychiatric disorders:

comparing schizophrenia and bipolar

disorder. J. Evid. Based Med. Healthc.

2019; 6(45), 2913-2918. DOI:

10.18410/jebmh/2019/607

Submission 15-10-2019,

Peer Review 22-10-2019,

Acceptance 04-11-2019,

Published 11-11-2019.



BACKGROUND

Mental illness is one of the significant contributors amongst non-communicable diseases of the world. The burden of these diseases now accounts for nearly half the global burden of diseases across all ages.¹ Severe mental illness like schizophrenia, bipolar affective disorder and depression is one of the major cause of concern from many Indian homes.² Schizophrenia is a severe mental disorder, characterized by fundamental disturbances in thinking, perception and emotions. It is one of the most devastating of psychiatric disorders, leading to long-term, progressive disability, follows deteriorating course and exalts enormous suffering to those around them.³ The World Health Organization has estimated that about 40-90% of patients with schizophrenia live with their families. Although the situation differs from country to country, it is estimated that between one third and one half of patients live with their families in developing countries.⁴ Bipolar disorder, has relapsing and remitting course, and is characterized by recurrent manic and depressive or mixed episodes, is one of the most burdensome illnesses occurring in the early productive years of life. Bipolar disorder may be thought as not showing typical characteristics regarding loss of functionality and care burden due to presence of euthymic episodes. However, there are studies in the literature indicating that bipolar disorder has a significant care burden on patients' relatives.⁵ Manic episodes of the illness are very disruptive to daily life, work and family relationships.⁶ During the acute phase of the illness great demand may be placed on family members to be involved in care giving. Such demands may persist even during remission, where residual symptoms may still be present demanding family care giving.^{5,6} Bipolar disorder has direct and indirect costs resulting in economic and family caregiver burden. Later studies on caregivers of bipolar disorder have showed that the depressive illness also cause significant distress due to lost productivity and absenteeism from work.⁷

The major distinction between schizophrenia and bipolar disorder is failure to reach to baseline functioning after each relapse in schizophrenia. Earlier bipolar affective disorder (manic depressive psychosis) with its episodic course was considered to have a better prognosis than schizophrenia, research in the last few years has shown that the bipolar affective disorder is also an equally disabling illness.⁴ Despite overwhelming evidence of the problems which people face when living with the psychiatrically ill, research data pertaining to family burden is rather limited, more so in the case of affective disorders.⁸ Also not much research work has been done in this field of the family burden of caregivers comparing patients of schizophrenia and bipolar disorder till date in Mumbai.

Considering the importance of the issue, the present study has therefore been undertaken, to understand better the experiences of family caregiver for patients with schizophrenia in comparison with bipolar disorders.

METHODS

A cross sectional hospital-based study was conducted in Department of Psychiatry, Masina Hospital Byculla East from August 2006 to July 2009. Family member or primary caregivers of patients with a diagnosis of a schizophrenia or bipolar disorder who attended the outpatient department or were receiving indoor treatment care were included in the study.

Sample

Total primary caregivers of patients of schizophrenia and BPAD divided in to two groups as follows- Group 1- 100 patients with Schizophrenia and Group 2- 100 patients with (BPAD).

Data Collection

Structured clinical interview for DSM IV TR axis I disorders was used to delineate the patient groups to diagnose, to separate patients with diagnosis of schizophrenia from bipolar disorder patients. Convenient sampling was done. A written informed consent was taken from patients and care givers. A detailed history from reliable family member was used to crosscheck and confirm diagnosis. Family members of patients in the age group 18-60 years who were a parent, spouse (duration of marriage minimum 5 yrs.), or spouse equivalent staying with the patient for minimum 5 yrs. and were willing to give the consent, helping the patient financially, no past psychiatric illness except nicotine dependence were included. Caregivers who were unwilling to participate in the study, patients with other Axis I or Axis II, any other past medical or surgical illness were excluded. A semi-structured interview of the patient and family member was used to acquire socio-demographic data. Burden of caregivers were assessed by using BAS scale. Psychopathology of the caregivers assessed by HDRS, HARS.

Burden Assessment Schedule (BAS)

This scale is standardized for the Indian population. It measures subjective and objective burden. Thara et al 1995 developed a 40- item scale which was later to scaled down to a 20-item scale. Each question is scored on a three-point scale- not at all, to some extent, very much. Each question is scored from one to three, the minimum score being 16 and a maximum score of 60. Kappa value was 0.8. Criterion validity was established after comparing with Family burden schedule (Pai and Kapur 1981). The scores were divided in the following ranges: 16-25 - Mild burden; 26-36 - Moderate burden; 37-46 - Severe burden; Above 46 - Very severe burden.

Hamilton Depression Rating Scale (HDRS)

The HDRS (also known as the Ham-D) is the most widely used clinician-administered depression assessment scale. Max Hamilton originally published this scale in 1960 and revised it in 1966, 1967, 1969, 1980. This questionnaire is designed for adults and is used to rate the severity of their depression by probing mood, feelings of guilt, suicide

ideation, insomnia, agitation or retardation, anxiety, weight loss, and somatic symptoms. The original version contains 17 items to be rated (HDRS-17) A later 21-item version (HDRS21) included 4 items intended to subtype the depression, but which are sometimes, incorrectly, used to rate severity. These 4 other questions are not added to the total score but are used to provide additional information about depression (diurnal variations or paranoid symptoms present or not). A limitation of the HDRS is that atypical symptoms of depression (e.g., hypersomnia, hyperphagia) are not assessed. Assessment time is estimated at 20 minutes. Each item is scored on a 3- or 5-point scale, depending on the item, and the total score is compared to the corresponding descriptor. Ratings are based on clinical interview; Scoring Method for scoring varies by versions. For the HDRS 17, Score of 0-6 =normal range (or in clinical remission). 7-17 Mild depression, 18-24 Moderate depression, and >= 24, Severe depression.

Hamilton Anxiety Rating Scale (HAM-A) or (HARS)

Developed by M. Hamilton in 1959, was one of the first rating scales developed to measure the severity of anxiety symptoms, and is still widely used today in both clinical and research settings. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). The HARS does not provide any standardized probe questions. Despite this, the reported levels of inter-rater reliability for the scale appear to be acceptable. Administration time 10-15 minutes

Scoring

Each item is scored on a scale of 0 (not present) to 4 (severe), Total score range of 0-56, where 0-13 Normal range, 14-17 Mild severity, 18-24 Moderate severity and >= 25 Severe range.

Statistical Analysis

The data was recorded and tabulated in spread sheets by using Microsoft Excel Software. It was subsequently analysed using the Statistical Package for Social Sciences (SPSS) 16.0 and Primer of biostatistics software. Quantitative variables were presented with the help of mean and standard deviation. Normality of the data was assessed by Shapiro Wilks test and Q-Q plot. It was found that BAS, HDRS, HARS, scores were not normally distributed. Hence the Mann Whitney U Test was applied to find out the statistical difference.

RESULTS

Total 200 caregivers were studied, 100 each from Schizophrenia and Bipolar group. In both the groups, most of the patients were in age group of 26-35 years (schizophrenia 39%, BPAD 29%) and the caregivers were in age group 46-55 years (schizophrenia 35%, BPAD 44%).

Majority of patients in both the groups were males (schizophrenia 52%, BPAD 96%). In schizophrenia there were group more male caregivers (51%) while in bipolar group more female caregivers (52%). In schizophrenia group both patients (39%) and caregivers (39%) had mostly completed their graduation, while in bipolar group patients were educated till graduation (49%) and majority of caregivers had done higher secondary (42%). Overall majority of patients were unemployed (schizophrenia 55%, BPAD 51%). In schizophrenia most of the care givers were doing service (49%), while in bipolar group most of them were housewives (41%). Majority of the study subjects belong to upper middle class (schizophrenia 45%, BPAD 48%). In this study most of the study subjects were single in schizophrenia group (43%), while in bipolar group were married (41%). In both groups 54% spouses were unaware of patients' illness before marriage, also a large number of patients were unmarried (43%-schizophrenia, 41%- BPAD). There was absence of family history of psychiatric illness in both groups (schizophrenia 82%, BPAD 81%). The duration of illness was majorly in range of 1-5yrs or >5yrs (schizophrenia 49% BPAD 46%). Maximum no of patients needed hospitalization at least 2 times (schizophrenia 43%, BPAD 41%). In Bipolar group all patients required hospitalization. In both the groups it was observed that perceived burden had highly significant correlation with depression and anxiety in the caregivers. In our study majority of caregivers of both the groups experienced more of depressive symptoms than anxiety symptoms.

Table 3 shows mean and standard deviations of BAS, HDRS, HARS, scores show that there is no significant difference in the scores of BAS (p=0.67), HDRS (p=0.06), HARS (p=0.19), between both study groups.

Age Groups	Schizophrenia				Bipolar Disorder			
	Patient		Caregiver		Patient		Caregiver	
	n	%	n	%	n	%	n	%
18 – 25	20	20	15	15	23	23	11	11
26-35	39	39	22	22	29	29	19	19
36 – 45	22	22	18	18	21	21	18	18
46 – 55	15	15	35	35	22	22	44	44
>= 56	4	4	10	10	5	5	8	8
Sex								
Male	52	52	51	51	96	96	48	48
Female	48	48	49	49	4	4	52	52
Education Status								
Illiterate	8	8	15	15	3	3	7	7
Primary	11	11	13	13	3	3	9	9
Secondary	37	37	29	29	40	40	42	42
Graduate	39	39	39	39	49	49	36	36
Postgraduate	5	5	4	4	5	5	6	6
Occupation Status								
Unemployed	55	55	9	9	51	51	5	5
Housewife	17	17	31	31	8	8	41	41
Business	5	5	11	11	15	15	24	24
Service	23	23	49	49	26	26	30	30
Total	100	100	100	100	100	100	100	100

Table 1. Distribution of the Patients and Caregivers According to Age, Sex, Educational Status and Occupation

Socio-Economic Status	Schizophrenia		Bipolar Disorder	
	N	%	n	%
Lower	0	0	0	0
Upper Lower	3	3	0	0

lower middle	40	40	25	25
Upper middle	45	45	48	48
Upper	12	12	27	27
Type of Family				
Joint	34	34	49	49
Nuclear	66	66	51	51
Marital Status				
Single	43	43	41	41
Married	41	41	47	47
separated	5	5	7	7
divorced	7	7	4	4
widowed	4	4	1	1
Awareness of Spouse				
Not applicable	43	43	41	41
Yes	3	3	5	5
No	54	54	54	54
Family History				
Present	18	18	19	19
Absent	82	82	81	81
Duration of Illness				
6 months - 1 year	11	11	7	7
1 yr. - 5 year	49	49	46	46
>5 year	40	40	47	47
Frequency of Hospitalization				
0	4	4	0	0
1	34	34	23	23
2	43	43	41	41
3	16	16	29	29
≥ 4	3	3	7	7
Total	100	100	100	100

Table 2. Distribution of the Study Subjects According to Socioeconomic Status, Family Type, Marital Status, Awareness of Spouse, Family History, Duration of Illness and Frequency of Hospitalization

Disease	Schizophrenia		Bipolar Disorder		P Value*	Significance
	Mean	S.D	Mean	S.D		
BAS	28.0	6.5	28.4	7.6	0.67	NS
HDRS	11.5	8.4	14.2	10.4	0.06	NS
HARS	10.0	8.9	10.7	8.2	0.19	NS

Table 3. Mean and Standard Deviations of BAS, HDRS, HARS, Scores

* Mann Whitney U Test applied as all scores follow non normal distribution, NS- Non-Significant. there is no significant difference in the scores of BAS.

Disease	Scores		BAS	HDRS	HARS
Bipolar Disorder	BAS	Spearman's Correlation Coefficient	1	0.674	0.666
		p value	-	.001*	.001*
Schizophrenia	BAS	Spearman's Correlation Coefficient	1	0.551	0.499
		p value	-	.001*	.001*

Table 4. Correlation of the BAS, HDRS, HARS, Scores with Each Other in Study Subjects with Schizophrenia

* Highly Significant

The caregivers of both the groups experience equal amount of burden. Correlation of the BAS, HDRS, HARS, scores with each other in study subjects with Schizophrenia and BPAD is highly significant as shown in table 4. This shows that perceived burden had highly significant correlation with depression and anxiety in the caregivers. The distribution of caregivers according to the range of BAS scores is depicted in figure 1. In both groups, majority of

perceived burden in caregivers was in mild to moderate range. The caregivers of both groups experienced more of depressive (schizophrenia 63%, BPAD 77%) symptoms than anxiety (schizophrenia 27%, BPAD 24%) symptoms as shown in figure 2. Majority of caregivers in both the groups are suffering from mild depression and perceive moderate anxiety.

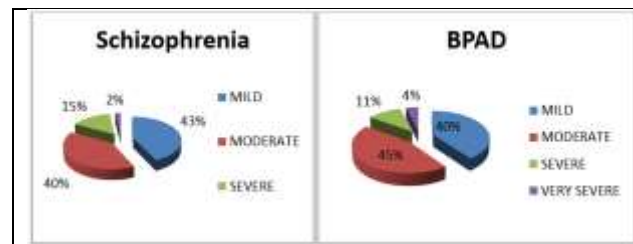


Figure 1. Distribution of Caregivers According to Range of BAS Scores in Schizophrenia and BPAD. Perceived Burden in the Caregivers was in Mild to Moderate Range

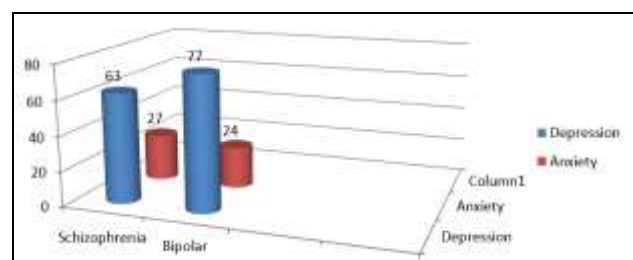


Figure 2. Distribution of Depression and Anxiety in Caregivers of Study Groups

DISCUSSION

In this study, we found that the degree of burden perceived by caregivers of schizophrenia is equal to the caregiver of BPAD which was in accordance with the studies done by Chakrabarthy et al^{2,9} 1995, Chadda et al 2002,¹⁰ Nehra et al 2005,¹¹ who have reported burden to be same in bipolar illness and schizophrenia. Studies assessing burden in bipolar affective disorder have been inconclusive. Chronic course of schizophrenia has a greater burden. Giel et al reported greater burden in families of patients with chronic illness with severe loss of insight. Other studies like Dr. Kavary Bora et al 2017¹² also report that the degree of burden is the more in that of schizophrenia.^{13,14,15,16,17}

This study observed that marital problems, several relapses and hospitalizations were problematic and interfered with care giving which was in accordance with study by Targum et al, who reported, marital discord to be predictive of burden in caregivers of patients with bipolar illness.¹⁸ Caregivers' perceived burden in the acute phase as well as between episodes.¹⁸ Kumari et al 2009¹⁹ assessed and compared patterns of subjective burden on spouses of schizophrenia patients and found no significant difference between male and female spouses. Fadden et al²⁰ reported that the spouses of affective disorder, especially BPAD cope with the situation better possibly due to:, the ability of the spouse to identify the forthcoming episode early, the

episodic nature of the illness and the expectations of near normal functioning between episodes.

Few studies report that younger caregivers experience a higher care giving burden. People with a lower educational background suffered greater distress, while a higher educational level was associated with less subjective burden.^{21,22} However, in our study we did not find any correlation between variables such as age, sex, educational status of caregiver with perceived burden. Also, family history of psychiatric illness didn't show correlation with burden. In this study we also observed that burden perceived was in the mild to moderate range. Very few were in range of severe (schizophrenia 11%, BPAD 15%) and very severe burden (schizophrenia 2%, BPAD 4%). Clinically diagnosable depression and anxiety in both groups was in mild to moderate range. Depressive symptoms were more common than anxiety symptoms in both the groups. But anxiety seems to be an early predictor of perceived burden. Therefore, presence of anxiety symptoms in caregivers can help in early interventional strategies to prevent burden. Caregivers of bipolar patients experienced depressive symptoms more than caregivers of schizophrenia group therefore bipolar group caregivers are more at risk of developing psychopathology. Indian mental health statistical report regarding caregiver of mentally ill patient. It was suggested 40-75% of caregivers had significant psychological illness as a result of their care giving and 15-32% had clinically diagnosable major depression.²³ A study has found that rates of caregiver depression have been estimated to range from 38 percent to 60 percent. Caregivers of family members with a higher number of symptoms and level of cognitive impairment experience more depression.²⁴ A cross-sectional study from south west Ethiopia reports substantially high level of caregiving burden; nearly, three-fourth of caregivers report moderate/severe objective burden and more than 97% of participants feel burdened subjectively²⁵ Jayakrishnaveni C et al in 2018 observed in his study that burden is comparable in all domains except schizophrenia patients 'caregiver experience more financial burden.²⁶ Another study from China shows that burden perceptions of clinical features like violent and suicidal behaviours were more in caregivers of acute bipolar patients than caregivers of schizophrenia patients.²⁷

Our study demonstrates that caregivers experience considerable amount of distress as a result of the care giving role, and are vulnerable to developing minor psychiatric disorders such as anxiety and depression.

Limitations

A longitudinal study would have thrown light on the course of the disease. Coping strategies, expressed emotions, as well as personality attributes of the care giver were not formally assessed although it plays a vital role in the readiness of caregivers to seek help. The study groups comprised of both acute phase and stable phase patients which may hamper the way caregivers perceive their burden.

CONCLUSIONS

Care giver burden was similar in both schizophrenia and bipolar disorders. Burden seemed to increase if there is lack of spousal awareness of patient's illness at the time of marriage. Caregivers experience considerable amount of distress as a result of the care giving role, and are vulnerable to developing minor psychiatric disorders such as anxiety and depression. Mild to moderate depression appears to be more common. Bipolar patients' caregivers are more at risk of developing psychopathology. Anxiety seems to be an early predictor of perceived burden, so helpful in aiming at early interventional strategies to reduce burden. Further research on mental-disorder-related family burden involving the general quality of family functioning, support strategies both for the patients and their families, as well as ways and resources of coping with the burden is needed.

REFERENCES

- [1] World Health Organisation. The global burden disease update: 2004 Update. Geneva: World Health Organisation 2008.
- [2] Chakrabarti S, Raj L, Kulhara P, et al. Comparison of the extent and pattern of family burden in affective disorders and schizophrenia. *Indian J Psychiatry* 1995;37(3):105-112.
- [3] Yusuf AJ, Nuhu FT, Akinbiyi A. Caregiver burden among relatives of patients with schizophrenia in Katsina, Nigeria. *S Afr J Psychiatry* 2009;15(2):43-47.
- [4] Kavanagh S, Opit L, Knapp MR, et al. Schizophrenia: shifting the balance of care. *Soc Psychiatry Psychiatr Epidemiol* 1995;30(5):206-212.
- [5] Reinares M, Vieta E, Colom F, et al. What really matters to bipolar patients' caregivers: sources of family burden. *J Affect Disord* 2006;94(1-3):157-163.
- [6] Pini S, de Queiroz V, Pagnin D, et al. Prevalence and burden of bipolar disorders in European countries. *Eur Neuropsychopharmacol* 2005;15(4):425-434.
- [7] Laxman KE, Lovibond KS, Hassan MK. Impact of bipolar disorder in employed populations. *Am J Manag Care* 2008;14(11):757-784.
- [8] Vasudeva S, Sekhar CK, Rao PG. Caregivers burden of patients with schizophrenia and bipolar disorder: a sectional study. *Indian J Psychol Med* 2013;35(4):352-357.
- [9] Chakrabarti S, Gill S. Coping and its correlates among caregivers of patients with bipolar disorder: a preliminary study. *Bipolar Disord* 2002;4(1):50-60.
- [10] Chadda RK, Singh TB, Ganguly KK. Caregiver burden and coping: a prospective study of relationship between burden and coping in caregivers of patients with schizophrenia and bipolar affective disorder. *Soc Psychiatry Psychiatr Epidemiol* 2007;42(11):923-930.
- [11] Nehra R, Chakrabarti S, Kulhara P, et al. Caregiver-coping in bipolar disorder and schizophrenia--a re-

- examination. *Soc Psychiat Epidemiol* 2005;40(4):329-336.
- [12] Giel R, de Arango MV, Hafeiz Babikir A, et al. The burden of mental illness on the family. Results of observations in four developing countries. A report from the WHO Collaborative Study on Strategies for Extending Mental Health Care. *Acta Psychiatr Scand* 1983;68(3):186-201.
- [13] Bora K, Das A. Family burden in caregivers of chronic schizophrenia and bipolar affective disorder - a comparative study. *Journal of Medical Science and Clinical Res* 2017;5(11):30237-30238.
- [14] Koujalgi SR, Patil SR. Family burden in patient with schizophrenia and depressive disorder: a comparative study. *Indian J Psychol Med* 2013;35(3):251-255.
- [15] Grover S, Chakrabarti S, Aggarwal M, et al. Comparative study of the experience of care giving in bipolar affective disorder and schizophrenia. *Int J Soc Psychiatry* 2012;58(6):614-622.
- [16] Vohra AK, Garg S, Gaur DR. A study of burden on families of schizophrenia and depressive disorders. *Indian J Psychiatry* 2000;42(Supp):33.
- [17] Roychaudhuri J, Mondal D, Boral A, et al. Family burden among long-term Psychiatric patients. *Indian J Psychiatry* 1995;37(2):81-85.
- [18] Roychaudhary J, Mondal D, Boral A, et al. Family burden among long term psychiatric patients. *Indian J Psychiatry* 1995;37(2):81-85.
- [19] Targum SD, Dibble ED, Davenport YB, et al. The family attitudes questionnaire. Patients and spouses view of bipolar illness. *Arch Gen Psychiatry* 1981;38(5):562-568.
- [20] Kumari S, Singh AR, Verma AN, et al. Subjective burden on spouses of schizophrenia patients. *Indian Psychiatry J* 2009;18(2):97-100.
- [21] Fadden G, Bebbington P, Kuipers L. Caring and its burden: a study of the spouses of depressed patients. *Br J Psychiatry* 1987;151:660-667.
- [22] Magliano L, Fadden G, Madianos M, et al. Burden on the families of patients with schizophrenia: results of the BIOMED I study. *Soc Psychiatry Psychiatr Epidemiol* 1998;33(9):405-412.
- [23] Webb C, Pfeiffer M, Mueser KT, et al. Burden and well-being of caregivers for the severely mentally ill: The role of coping style and social support. *Schizophr Res* 1998;34(3):169-180.
- [24] Berg-Weger M. Depression as mediator: viewing caregiver well-being and strain in a different light. *Families in Society* March/April 2000.
- [25] Sinha K. Healthcare workers will be first in line for swine flu vaccine. *TNN* 2009.
- [26] Ayalew M, Workicho A, Tesfaye E, et al. Burden among caregivers of people with mental illness at Jimma University Medical Center, Southwest Ethiopia: a cross-sectional study. *Ann Gen Psychiatry* 2019;18:10.
- [27] Jayakrisnaveni C, Gnanadura WJA, Ravindran R. Comparative study on burden of bipolar affective disorder and schizophrenia. *J Evid Based Healthc* 2018;5(6):470-476.