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A study to assess the burden and perceived stigma among caregivers of patient with schizophrenia at Dharwad Institute of Mental Health and Neurosciences, Dharwad (DIMHANS)

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Abstract
Background and Objectives: The level of stigma associated to mental illness is much higher than that is already perceived in India. Though some studies in western culture have reported co-relation between stigma and burden, amongst family members of persons with mental illness. There are few studies carried out in India that co-relates stigma with burden of schizophrenia caregiver's. There is a need to highlight the association between perceived stigma and level of burden among caregivers of patient with schizophrenia.
Methods: A quantitative cross sectional descriptive study was conducted to assess and correlate the burden and perceived stigma among caregiver of schizophrenia patients at DIMHANS Dharwad during Jan- April 2017. 100 caregivers of schizophrenia patients who are attending outpatient department or admitted at psychiatric wards were selected based on convenient sampling technique. The data were collected by using Burden Assessment Schedule (BAS) and Affiliate Stigma Scale. Interview was used to collect data from caregivers.
Result: Among the total 100 respondents 64% were male, 81% were married, 88% belonged to Hindu religion and proportion participants were residing rural area. The mean burden scores of caregivers were 36.35±3.68 and mean perceived stigma scores were 53.94±4.41. Out of 100 participants 78% have high burden and 57% have high perceived stigma scores. There was a significant positive correlation between perceived stigma and burden among caregivers of schizophrenia patients. The association between perceived stigma and burden with socio-demographic variables revealed that there was a significant association between gender, income and duration of illness with burden (x^2=4.21, p=0.04, x^2=5.65, p=0.01, x^2=8.68, p=0.03). There was a significant association between type of family with perceived stigma (x^2=4.61, p=0.03).

Keywords: Schizophrenia, neuroscience, caregiver, mental illness

Introduction
In our Indian culture, various words are quoted as purity and divinity are the two main characteristics of mentally healthy individuals. People who can carry out their roles in society and whose behavior is appropriate and adoptive are viewed as healthy. Mental health is a dynamic or ever-changing state [1].
Schizophrenia is a chronic, severe and disabling brain disorder that has affected people throughout history about 1% in population. People with the disorder may hear the voices but other people don't hear. They may believe other people are reading their minds, controlling their thoughts or plotting to harm them. This can terrify people with the illness and make them withdrawn or extreme agitated. People with Schizophrenia may not make sense when they talk. They may sit for hours without moving or talking. Sometimes people with Schizophrenia seem perfectly fine until they talk about what they are really thinking. Families and society are affected by Schizophrenia too. Many people with Schizophrenia have difficulty holding a job or caring for them, so they rely on others for help. Schizophrenia affects about 24 million people worldwide. In India the reported rate of Schizophrenia is 1/100 population. Research studies from different part of the countries have shown that mental illness is common as the Schizophrenia in India as it is elsewhere and equally common in rural and urban areas [2].
People with schizophrenia and other psychoses face a range of problems, some arising directly from the illness and others from the stigma of the disorder. Stigma can best be understood as the loss of status by or discrimination of, a person because of an attribute that others evaluate disapprovingly.

Stigma complicates recovery, thereby reducing self-esteem and access to social networks. It has a particularly severe impact on patients' quality of life [3]. In general terms, stigma is the status loss and discrimination triggered by negative stereotypes about people labelled as having mental illness. Stigma refers to treating a person differently from the society based on grounds of their illness to an extent that affected persons are isolated completely. Stigma impedes recovery by eroding individuals' social network, and self-esteem. All of which contribute to poor outcomes, including unemployment, isolation, delayed treatment-seeking, treatment-refractory symptoms, prolonged course, and avoidable hospitalizations [4].

In general terms, stigma is the status loss and discrimination triggered by negative stereotypes about people labelled as having mental illness. Stigma refers to treating a person differently from the society based on grounds of their illness to an extent that affected persons are isolated completely. Stigma impedes recovery by eroding individuals' social network, and self-esteem. All of which contribute to poor outcomes, including unemployment, isolation, delayed treatment-seeking, treatment-refractory symptoms, prolonged course, and avoidable hospitalizations [4].

Stigma effects that it has on people with mental illness and their families are extensive, with stigma comes a lack of understanding by important others, which can be invalidating and painful. This can lead to isolation and shame. Stigma can also lead to harassment, bullying and even violence. People with mental illnesses have faced discrimination in seeking employment and even housing. Stigma also prevents people from seeking help or getting treatment, and as a result, their symptoms become worse and more difficult to treat [5].

The stigma of Schizophrenia is one of the factors that lead to lack of emphasis on the health promotion needs of persons with the disorder. The caregivers of Schizophrenia patients experience immense burden and also share the stigma. The family is often the primary and frequently the only support system for the patient. Family members living with a patient of Schizophrenia experience shame, grief, guilt, fear, isolation all of which render them less able to be proactive (O' Brien, 1998). Hence the knowledge about how isolated or how uncomfortable the family members feel about their ill relative and the factors related to such stigma are important and need consideration in the family management of Schizophrenia [6].

One explanation for stigmas and feeling of guilt is that the origin of illness can be traced to family. In addition, social and cultural factors can enhance 'genetic risk'. Karamlou and Mottaghipour's interviews in Iran showed that cultural differences might influence the experience of stigma in families of psychiatric patients in areas such as concealment, limitation in work and education, genetic attributions, traditional, believes in society about patients, gender differences and so on. Showden and Yamada also stressed that one source of stigma could not replace another; it was therefore important to pay more attention to gender, race and immigrant identities in the stigmatized family. Little is known about the burden of care and ways in which families cope while caring for a relative with Schizophrenia in developing country [7].

One of the especially painful and destructive effects of stigma is that people with mental illness are left feeling that they are not full members of society. Regardless of the objective level of discrimination that an individual is exposed to, it is the subjective perception of being devalued and marginalized that directly affects a person's sense of self-esteem and level of distress. Stigma in society certainly may also have external, objective obstacles even more difficult to overcome [7].

Mental illness is distressing for the people affected and their family members. It is a leading cause of global burden of disease [WHO, 2008]. These family members often inadequately prepared to be the main caregiver for their ill relative [8].

Caregiver is an individual who has the responsibility of meeting the physical and psychological needs of the dependent patient. Psychiatric patients need assistance or supervision in their daily activities and this often places a major burden on their caregivers, there by placing the caregivers at a great risk of mental and physical health problems and also affecting the quality of life. As the disease progresses, it carries with it a tremendous increase of burden and poor quality of life on the caregivers who does the care giving [9].

Numerous studies have demonstrated that family caregivers of persons with severe mental illness suffer from significant stress, experience moderately high levels of burden, poor quality of life and often receive inadequate assistance from mental health professionals. The family constitutes a major support system in the continuing care of the mentally ill in the community. Almost one- third [1/3rd] of all caregivers are balancing employment and care giving responsibilities and of this group, 2/3rd report conflicts in roles that require them to re-arrange their work schedules, work fewer than normal hours and or take unpaid leaves or absence [10].

The emotional impact of any psychiatric disorder on family or primary caregivers can vary from frustration, anxiety, fear, depression and guilt to grief. The families must sometimes cope with the stress of the patient's disruptive changes in household routines, strained social relations with in the family, loss of social support, diminishing opportunities for leisure and deteriorating finance. Further some family members often have mixed feelings such as an emotionally draining experience; care givers have high rates of depression when compared to general population. All these burdens severely tax the family members coping and adjustment abilities and the strain frequently results in anxiety, depression [11].

The burden on people caring for a family member with mental illness is considerable. The families must sometimes cope with the stress of the patient's disruptive symptoms, changes in house hold routines, strained social relations with in the family, loss of social support, diminishing opportunities for leisure and deteriorating finances. Further some family members often have mixed feelings such as sorrow, worry, anger, guilt, and shame. All these burdens severely tax the family members coping and adjustment abilities and the strain frequently results in anxiety, guilt, and depression [12].

Objectives of the study

1. To assess the burden and perceived stigma among caregivers of individual with schizophrenia.
2. To Co-relate level of burden with perceived stigma among care giver.
3. To find out association between burden and perceived stigma with socio demographic variables of care givers.

Research design
In the present study descriptive research design has been adopted to assess the burden and perceived stigma among caregivers of schizophrenia patient.

Population
Population comprised of caregiver of Schizophrenia patients

Sample
Participants were caregivers of schizophrenia patients who were attending psychiatric outpatient or admitted at psychiatric wards, DIMHANS Dharwad. The eligible criteria are presented in table 1. Beyond the inclusion criteria, eligibility for this study also required the schizophrenia patient's caregiver's willingness to participate, written informed consent and approval from hospital administration.

Sampling technique
For the present study convenient sampling technique was used to assess the burden and stigma among caregivers of schizophrenia patient.

Sample Size
The sample size was 100 caregiver of schizophrenia patients.

Variables under Study
- Stigma
- Burden
- Demographic variables

Setting of the study
Dharwad Institute of Mental Health And Neurosciences is located in Dharwad district northern region of Karnataka in India.it covers an area of 200.23km^2 and is located at NH-4 between Bangalore and Pune. It is established in the year of 1845,in 2009 the institute was converted into the Autonomous Institution with the recommendation of Central Government for man power development in psychiatry and renamed as a Dharwad Institute of Mental Health And Neurosciences [DIMHANS].
The present study conducted at Dharwad Institute of Mental Health and Neurosciences, Dharwad. It offers psychiatric services on out-patient and in-patient basis. Presently it is a 212 bedded tertiary level psychiatric hospital. DIMHANS is equipped with good infrastructure facilities to diagnose, treat and rehabilitate psychiatric patients. (http://www.dimhans.org)
For the present study data was collected at inpatient and outpatient department at DIMHANS Dharwad. In the outpatient and inpatient departments care is provided by multi-disciplinary team members include psychiatrists, psychiatric nurses, clinical psychologists and psychiatric social workers and clinical services for various psychiatric disorders *viz*. schizophrenia, mood disorders, obsessive compulsive disorder, anxiety disorders, substance abuse disorder and other psychiatric disorders. The treatment includes pharmacological management, Electro-Convulsive Therapy, individual counselling, family counselling, group counselling, psycho-education and recreational activities. The institution is fulfilling the needs of the nearly 400 to 450 patient per day who visits to the follow-up outpatient department. Among them nearly 60 to 80% of the patients will be diagnosed as schizophrenia. On an average nearly 25 to 30 patients will admit in psychiatric ward per month.

Tool Used For Data Collection
Reliable, valid and standardized research instruments that are culturally appropriate to the study population were used to assess the burden and perceived stigma among caregivers of patient with schizophrenia.
Tool-1: Socio-demographic data sheet
Tool-2: Burden Assessment Schedule
Tool-3: Affiliate Stigma Scale

Description of the tools
The following tools are used by the researcher

Section – I socio-demographic data sheet
It includes selected demographic variables like age, sex, marital status, education, religion, residence, type of family, family income per month, occupation, relationship with patient, No. of care giving hours per day, history of psychiatric illness in the family, duration of illness in patient.

(Appendix I provide the socio-demographic data sheet - Care givers of patient with schizophrenia)
Section – II Affiliate Stigma Scale
Affiliate Stigma Scale was originally developed to assess the self-stigma of a caregiver providing care to a family member with a mental illness. This instrument has 22 items rated on a 4-point Likert scale from 1- strongly disagree to 4- strongly agree. Score ranges from 22 to 88, higher score indicates a higher level of affiliate stigma. The psychometric properties of the Affiliate Stigma Scale have been supported, including excellent internal consistency (α = 0.85–0.94), person separation reliability (coefficient = 0.88–0.99), predictive validity, and concurrent validity.8,15 This scale has three domains; Cognitive, affective and behaviour.
Cognitive Domain -7 items - Item no, 3, 6, 9, 12, 15, 18, 21
Affect Domain – 7 items - 1, 4, 7, 10, 13, 16, 19
Behaviour Domain – 8 items - 2, 5, 8, 11, 14, 17, 20, 22
In the present study stigma was categorized into low and high stigma. Scores between 22 to 53 considered as Low stigma and scores above 54 considered as high stigma.

(Appendix III provide the Affiliate Stigma scale for caregivers of patient with schizophrenia)
Section III The Burden Assessment Schedule
The Burden Assessment Schedule (BAS) aims to assess both objective and subjective burden experienced by primary caregiver of the chronic mentally ill patients. This scale is developed at SCARF within the support of World Health Organization in 1998. Original scale having 40 items. The present instrument comprised 20 items rated on three-point Likert scale, from 3- not at all, 2- some extent, 1- very much. Question number 1, 3, 4, 5, 13, 16, and 19 (7 items) are having reverse scoring. Scores ranges from 20 to 60. Higher score indicated no or less burden. The inter-rate reliability for 40 item scale were carried out the Kappa value of 0.8 was obtained. Criterion validity was established by comparing with the Family Burden Schedule both instruments were found to be highly correlated. This scale assess burden under five factors.
Factor 1- Impact on wellbeing - Q. No. 7, 8, 9, and 18
Factor 2- Marital relationship - Q. No. 3, 4, 5, and 6

Factor 3- Appreciation for caring - Q.No.1, 13, 16, and 19
Factor 4- Impact on relations with others- Q.No.2, 11, 14, and 17
Factor 5- Perceived severity of the disease - Q. No. 10, 12, 15, and 20
In the present study burden was categorized into high burden (scores between 39-20), average burden (Scores between 59-40), and no burden (score 60).

Result

This chapter deals with the analysis and interpretation of data collected to assess the burden and perceived stigma among caregivers of schizophrenia patient at DIMHANS Dharwad. The data was collected from 100 caregivers of schizophrenia patient and results were computed by using descriptive and inferential statistics based on the objectives of study. The data collected were edited, tabulated, analysed, interpreted and findings were presented in the form of tables and diagrammatic representation under the following sections:

Section I: Describes socio-demographic characteristics of caregivers of schizophrenia patients.
Section II: Describes burden and perceived stigma among caregivers of schizophrenia patients.
Section III: Outlines correlation between burden and perceived stigma among caregivers of schizophrenia patients.
Section IV: Presents association between socio-demographic characteristics with burden among caregivers of schizophrenia patients.
Section V: Illustrates association between socio-demographic characteristics with perceived stigma among caregivers of schizophrenia patients.

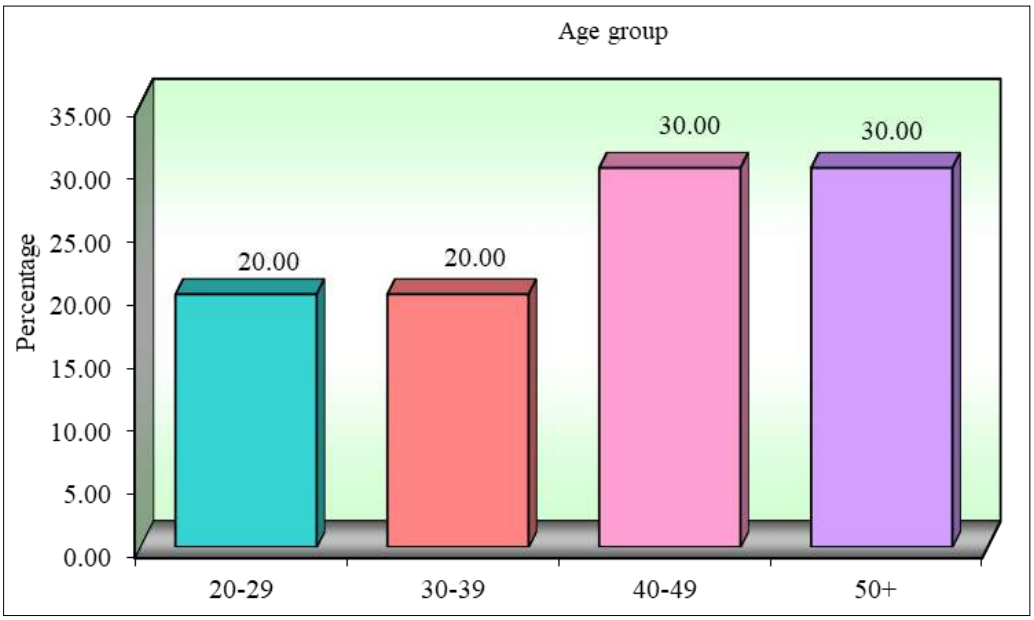

Fig 1: Distribution of caregivers according to age

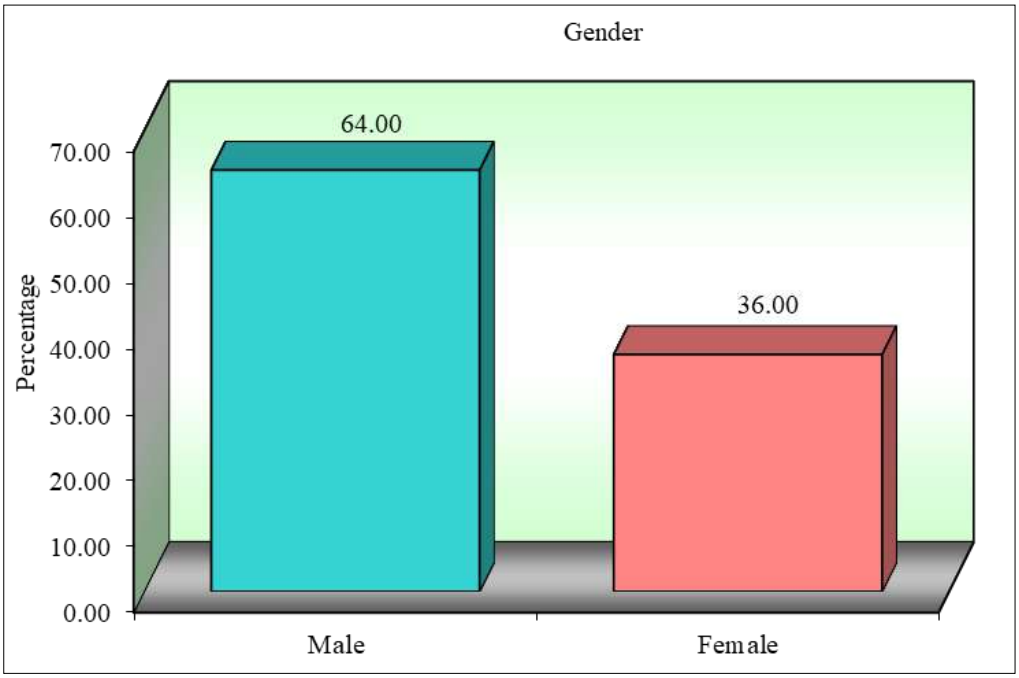

Fig 2: Distribution of caregivers according to gender

Table 2 and figure 2 show that 64% of the samples were male, 36% of sample were female.

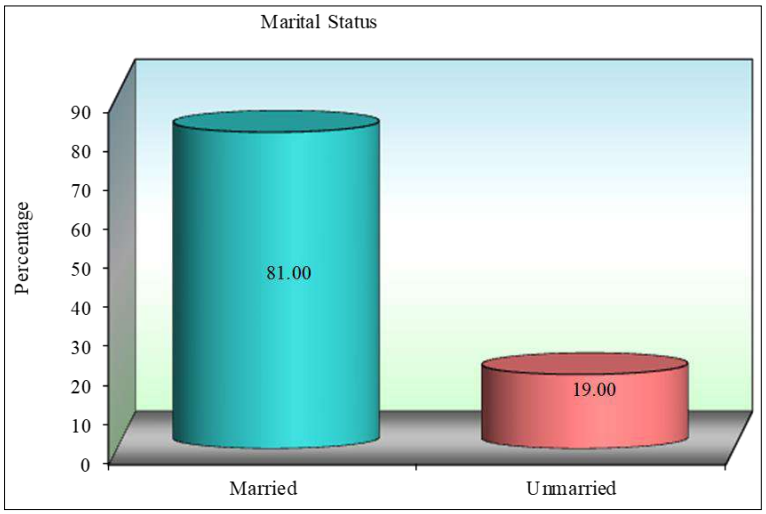

Fig 3: Distribution of caregivers according to marital status

Data present in table 2 and figure 3 shows that majority of sample (n=81, 81%) were married, 19% of sample were unmarried.

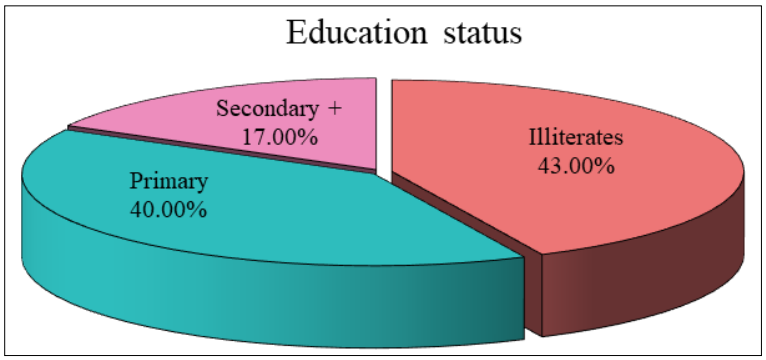

Fig 4: Distribution of caregivers according to education status

According Table 2 and figure 4 show that 43% of participants were illiterates, 40% of participants were primary education, remaining17% of participants were has secondary level and above education.

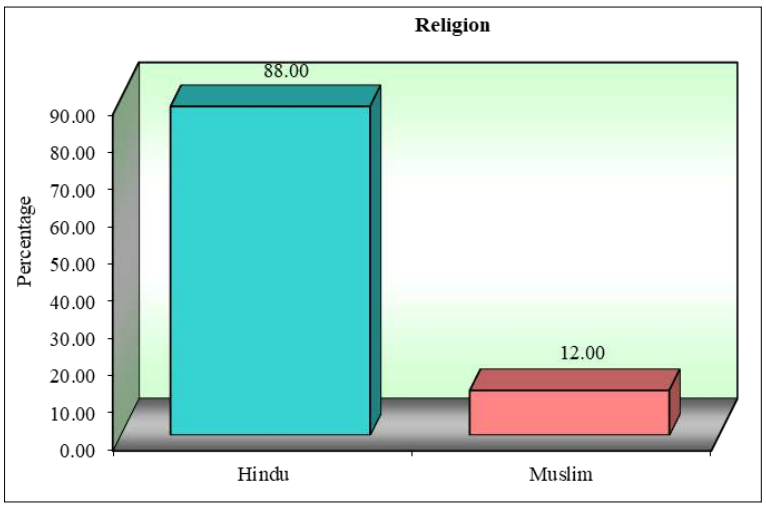

Fig 5: Distribution of caregivers according to religion

The data presented in Table 2 and figure 5 show that majority of participants belonged to Hindu religion; remaining 12% belongs to Muslim religion.

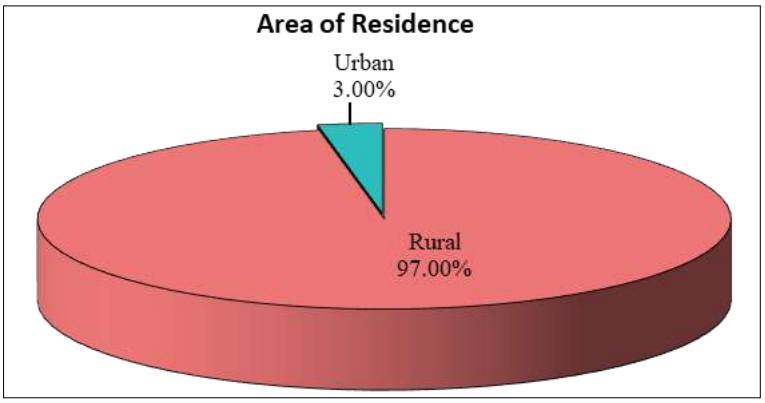

Fig 6: Distribution of caregivers according to area of residence

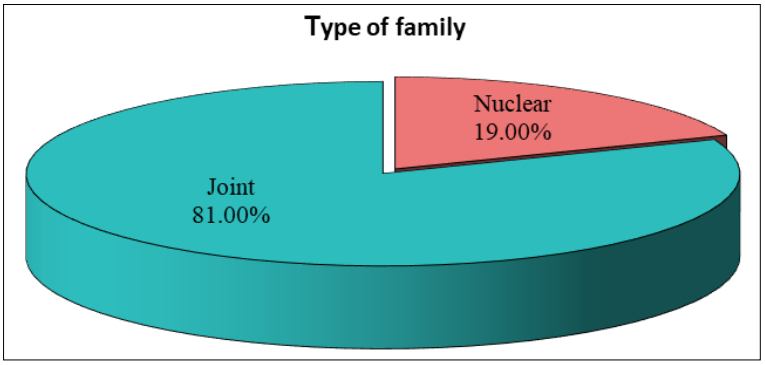

Fig 7: Distribution of caregivers according to type of family

The data presented in Table 2 and figure 7 shows that 81% participants were living in joint family, remaining 19% of participant were belongs to nuclear family.

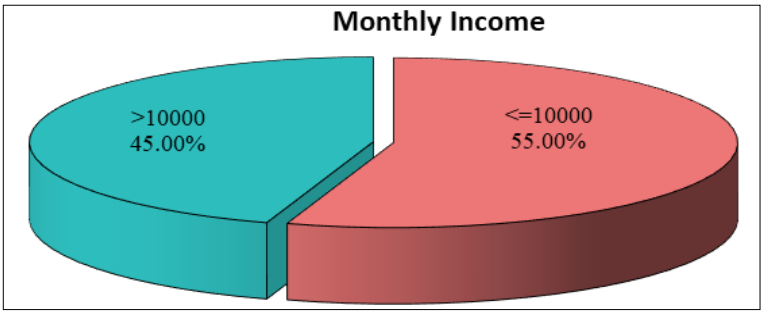

Fig 8: Distribution of caregivers according to monthly income

Regarding monthly income Table 2 and figure 8 shows that 55% participants were earning up to 10000 per month, remaining were earning more than 10000 per month.

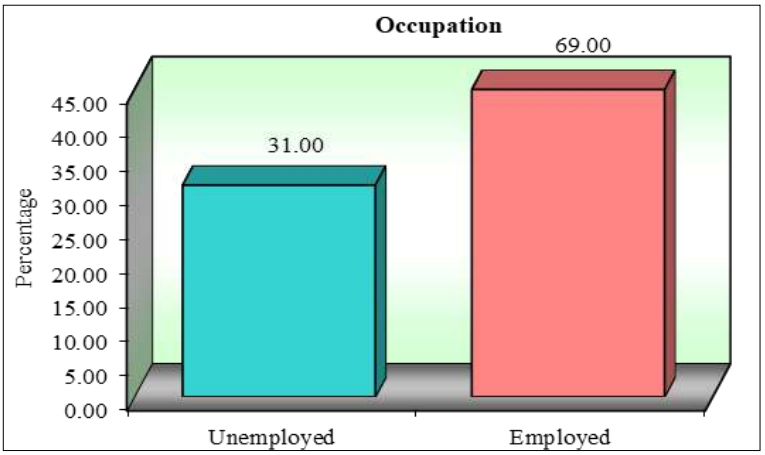

Fig 9: Distribution of caregivers according to occupation

Table 2 and figure 9 show that distribution of caregivers according to occupation 69% of the participants were employed and 31% were unemployed.

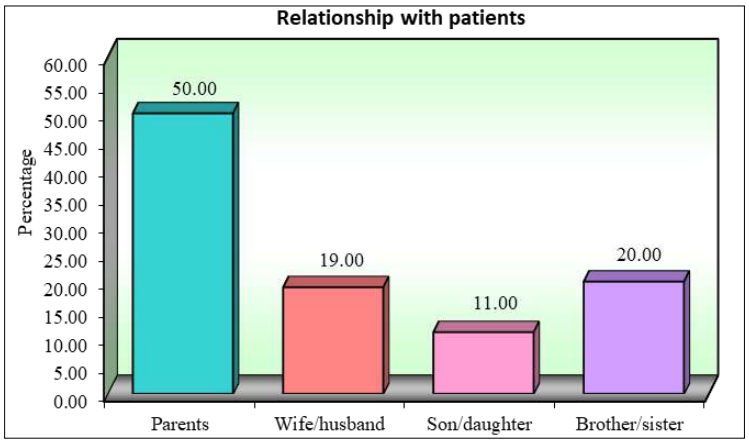

Fig 10: Distribution of caregivers according to relationship with patient.

Table 2 and figure 10 shows that half (n=50, 50%) of the participants were parents, 19% belongs to spouse category, 11% were children (son/daughter) and 20% belongs to sibling category.

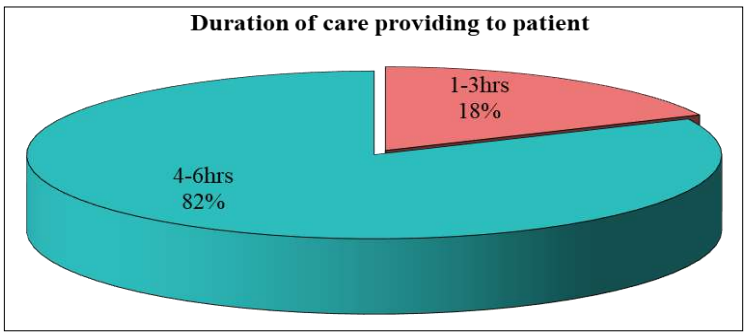

Fig 11: Distribution of caregivers according to duration ore providing to patient

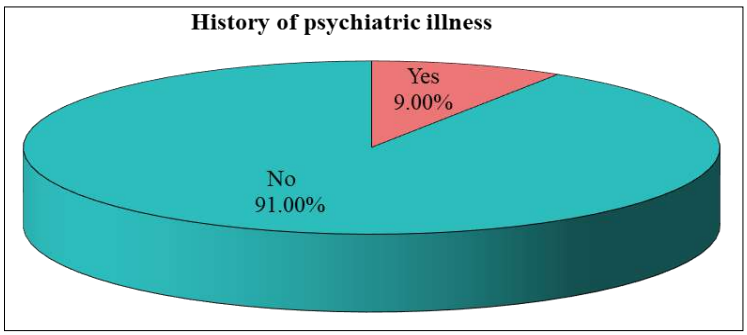

Fig 12: Distribution of caregivers according to history of psychiatric illness in the family

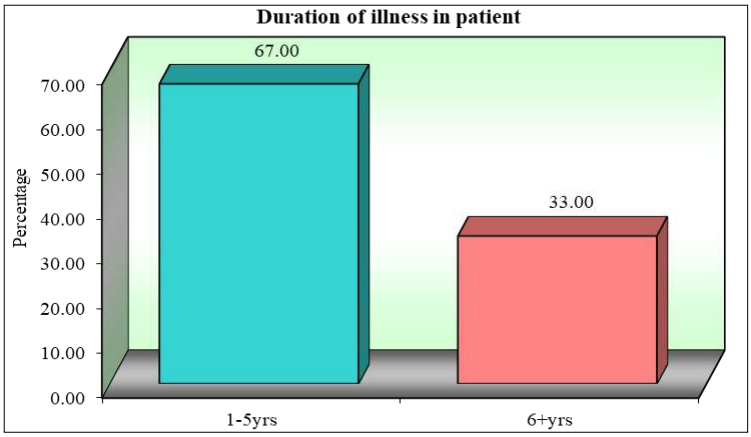

Fig 13: Distribution of caregivers according to duration of illness in patient

Section II: Description of burden and perceived stigma among caregivers of schizophrenia patient

Table 3: Distribution of caregivers based on burden scores

S. N	Burden	Items	Score range	Mean	SD
1	Impact on well being	4	4-12	6.84	1.00
2	Marital relationship	4	4-12	7.59	1.19
3	Appreciation for caring	4	4-12	7.80	0.89
4	Impact on relations with others	4	4-12	5.86	1.18
5	Perceived severity of disease	4	4-12	8.26	1.37
6	Total burden	20	20-60	36.35	3.68

Above Table 3 indicate that mean impact on wellbeing scores among caregivers of schizophrenia patients were 6.84, mean marital relationship score was 7.59, mean appreciation for caring was 7.80, mean impact on relationship with other were 5.86 and mean perceived severity of disease was 8.26. Total mean burden score for caregivers of schizophrenia patients were 36.35 with 3.68 SD.

Table 4: Distribution of caregivers based on levels of Burden

Burden	No of respondents (%)	% of respondents
Average Burden	22	22.00
High Burden	78	78.00
Total	100	100.00

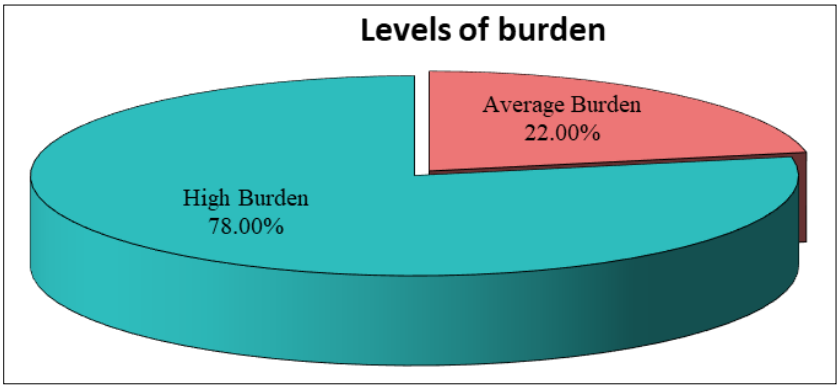

Fig 14: Distribution of caregivers according to level of burden

Above Table 4 and figure 14 shows that out of 100 participants 22% have average burden, 78% participants have high burden.

Table 5: Distribution of caregivers based categorical stigma score

Sl. No	Stigma	No. of Items	Score Range	Mean	SD
1	Affect	7	7-28	19.64	1.64
2	Behaviour	8	8-32	17.27	2.67
3	Cognition	7	7-8	17.03	1.95
4	Total stigma score	22	22-88	53.94	4.41

Above Table 5 indicates that mean affect stigma scores among caregivers of schizophrenia patients were 19.64, mean behaviour stigma score was 17.27 and mean cognitive stigma score was 17.03. Total stigma scores for caregivers of schizophrenia patients were 53.94.

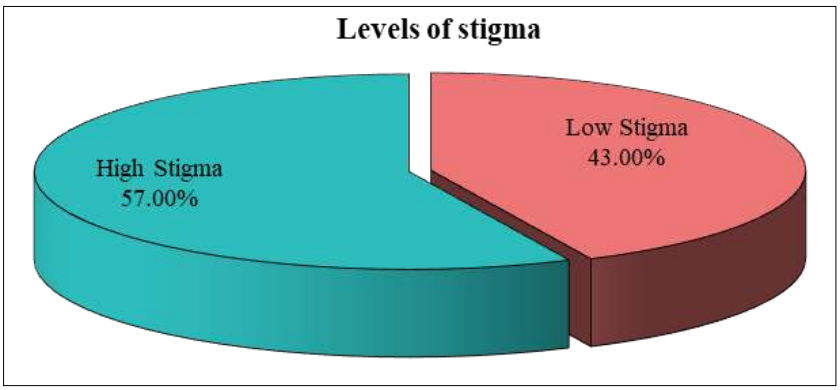

Fig 15: Distribution of caregivers according to level of stigma.

Section III: Outlines correlation between burden and perceived stigma among caregivers of schizophrenia patient

Table 7: Correlation between perceived stigma and burden among caregivers

Variables	Correlation between stigma		
	r-value	t-value	p-value
Burden scores	0.3991	4.3094	0.0001*

*p<0.05

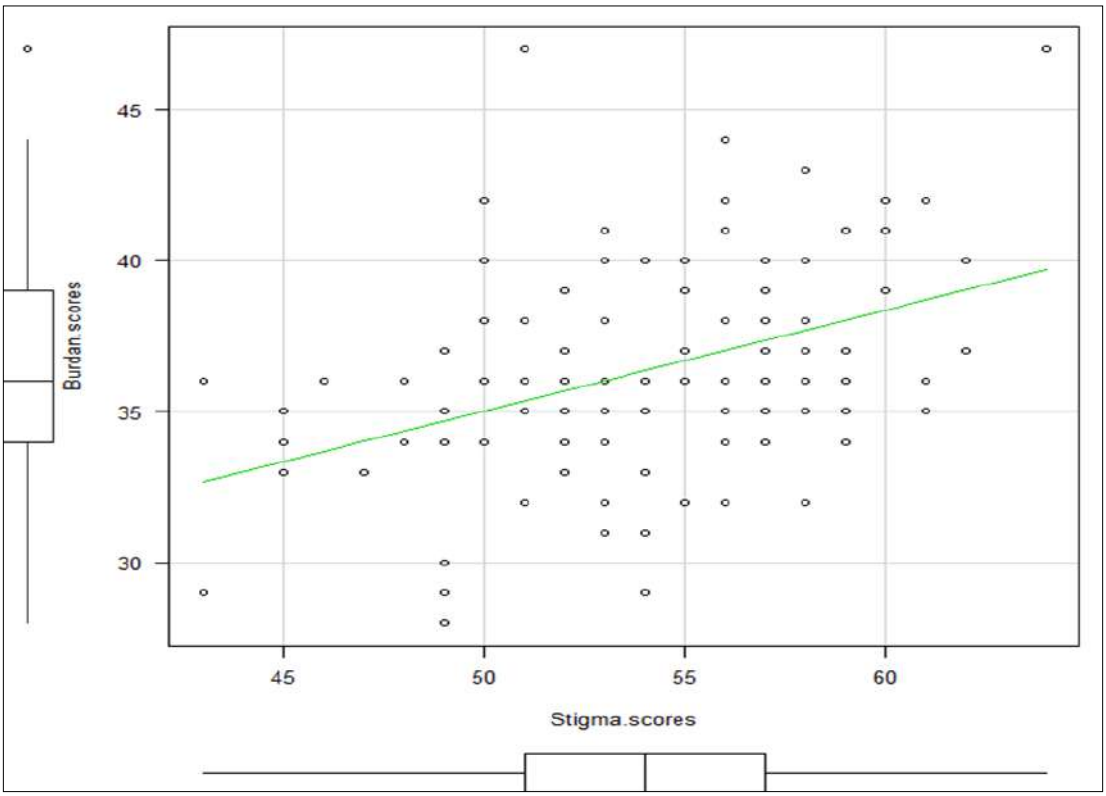

Fig 16: Correlation between burden and stigma among caregivers

Above Table 7 and figure 16 shows that Karl Pearson's correlation coefficient method was calculated to examine the relationship between burden and perceived stigma among caregivers of schizophrenia patient. Burden and stigma scores positively (r=0.39) correlated and correlation is significant at 0.05 level. This indicates that as burden scores increased, perceived stigma scores also increased.

Section IV: Association between socio-demographic characteristics with burden among caregivers of schizophrenia patient

Table 8: Association between levels of burden with socio-demographic characteristics of caregivers

Characteristics	Average burden	%	High burden	%	Total	%	Chi-square	p-value
Age groups								
20-29	1	5.00	19	95.00	20	20.00	5.6920	0.1280
30-39	4	20.00	16	80.00	20	20.00		
40-49	7	23.33	23	76.67	30	30.00		
50+	10	33.33	20	66.67	30	30.00		
Gender								
Male	10	15.63	54	84.38	64	64.00	4.2100	0.0400*
Female	12	33.33	24	66.67	36	36.00		
Marital status								
Unmarried	4	21.05	15	78.95	19	19.00	0.0120	0.9120
Married	18	22.22	63	77.78	81	81.00		
Education								
Illiterates	12	27.91	31	72.09	43	43.00	2.0050	0.3670
Primary	8	20.00	32	80.00	40	40.00		
Secondary +	2	11.76	15	88.24	17	17.00		
Religion								
Hindu	19	21.59	69	78.41	88	88.00	0.0720	0.7890
Muslim	3	25.00	9	75.00	12	12.00		
Residence								
Rural	22	22.68	75	77.32	97	97.00	0.8720	0.3500
Urban	0	0.00	3	100.00	3	3.00		
Type of family								
Nuclear	4	21.05	15	78.95	19	19.00	0.0120	0.9120
Joint	18	22.22	63	77.78	81	81.00		
Income groups								
<=10000	17	30.91	38	69.09	55	55.00	5.6530	0.0170*
>10000	5	11.11	40	88.89	45	45.00		
Occupation								

Unemployed	5	16.13	26	83.87	31	31.00	0.9020	0.3420
Employed	17	24.64	52	75.36	69	69.00		
Relationship with patients								
Parents	14	28.00	36	72.00	50	50.00	4.9290	0.1770
Wife/husband	5	26.32	14	73.68	19	19.00		
Son/daughter	0	0.00	11	100.00	11	11.00		
Brother/sister	3	15.00	17	85.00	20	20.00		
Care time in hours								
1-3hrs	3	16.67	15	83.33	18	18.00	0.3640	0.5460
4-6hrs	19	23.17	63	76.83	82	82.00		
History of psychiatric illness								
Yes	3	33.33	6	66.67	9	9.00	0.5460	0.3900
No	19	20.88	72	79.12	91	91.00		
Duration of illness in patient								
1-5yrs	9	13.43	58	86.57	67	67.00	8.6840	0.0030*
6+yrs	13	39.39	20	60.61	33	33.00		
Total	22	22.00	78	78.00	100	100.00		

*p<0.05

Table 8 shows that association between levels of burden with socio-demographic characteristics of caregivers of Schizophrenia patients. The data in the table shows that gender, income and duration of illness were significantly associated with level of burden. Male subjects have higher level of burden score compared to female subjects (chi-square=4.21, p=0.04).

Regarding monthly income participant who were earning up to 10000 had significant association with high level of burden scores compared to participant who were earning more than 10000 per month (p=0.017). Regarding duration of illness, patients who had 1-5 years duration had significant association with high level of burden scores compared to duration of illness in the patient more than 6 years (p=0.003).

Section V: Association between socio-demographic characteristics with perceived stigma among caregivers of schizophrenia patient

Table 9: Association between perceived stigma with socio-demographic characteristics of caregivers

Characteristics	Low Stigma	%	High Stigma	%	Total	%	Chi-square	p-value
Age groups								
20-29	10	50.00	10	50.00	20	20.00	3.0330	0.3870
30-39	10	50.00	10	50.00	20	20.00		
40-49	9	30.00	21	70.00	30	30.00		
50+	14	46.67	16	53.33	30	30.00		
Gender								
Male	28	43.75	36	56.25	64	64.00	0.0410	0.8400
Female	15	41.67	21	58.33	36	36.00		
Marital status								
Unmarried	7	36.84	12	63.16	19	19.00	0.3630	0.5470
Married	36	44.44	45	55.56	81	81.00		
Education								
Illiterates	18	41.86	25	58.14	43	43.00	0.1110	0.9460
Primary	18	45.00	22	55.00	40	40.00		
Secondary +	7	41.18	10	58.82	17	17.00		
Religion								
Hindu	37	42.05	51	57.95	88	88.00	0.2730	0.6020
Muslim	6	50.00	6	50.00	12	12.00		
Residence								
Rural	41	42.27	56	57.73	97	97.00	0.7070	0.4010
Urban	2	66.67	1	33.33	3	3.00		
Type of family								
Nuclear	4	21.05	15	78.95	19	19.00	4.6100	0.0320*
Joint	39	48.15	42	51.85	81	81.00		
Income groups								
<=10000	20	36.36	35	63.64	55	55.00	2.1960	0.1380
>10000	23	51.11	22	48.89	45	45.00		
Occupation								
Unemployed	12	38.71	19	61.29	31	31.00	0.3370	0.5610
Employed	31	44.93	38	55.07	69	69.00		
Relationship with patients								
Parents	20	40.00	30	60.00	50	50.00	3.0460	0.3850
Wife/husband	11	57.89	8	42.11	19	19.00		
Son/daughter	3	27.27	8	72.73	11	11.00		
Brother/sister	9	45.00	11	55.00	20	20.00		
Care time in hours								

1-3hrs	7	38.89	11	61.11	18	18.00	0.1510	0.6970
4-6hrs	36	43.90	46	56.10	82	82.00		
History of psychiatric illness								
Yes	3	33.33	6	66.67	9	9.00	0.6970	0.5390
No	40	43.96	51	56.04	91	91.00		
Duration of patient illness								
1-5yrs	31	46.27	36	53.73	67	67.00	0.8850	0.3470
6+yrs	12	36.36	21	63.64	33	33.00		
Total	43	43.00	57	57.00	100	100.00		

*$p<0.05$

Table 9 show that association between perceived stigmas with socio-demographic characteristics of caregivers of Schizophrenia patient. The data in the table shows there is significant association between types of family with perceived stigma. Participants who belonged to nuclear family had more stigma compare to joint family care givers (chi-square=4.61, p=0.032).

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