Factors Associated with Relapse of Psychosis among Patients Attending Tertiary Hospital of Tamil Nadu, India

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***Abstract*- Introduction:** Psychotic illness constitutes the highest burden of disease in the world with relapse being one of the most pertinent barriers to recovery and rehabilitation. Relapse leads disability among the psychotic patients; thus, it is an issue of global concern. This study aimed to analyse the factors associated with relapse in patients with psychosis.

Methods: Hospital-based case control study was conducted at a tertiary hospital of Tamil Nadu, India. Purposive sampling technique was used to select the sample for both the cases (70) and controls (70) in a 1:1 ratio. Data were collected through face-to-face interview using Drug Attitude inventory, Presumptive Stressful Life Events Scale and Multi-dimensional Scale of Perceived Social Support. Descriptive and inferential statistics (Pearson Chi-square and odds ratio) were used for analyzing the data. P value was set at 0.05.

Results: Researcher found that there were significant differences in drug attitude, perceived stressful life events and social support in between cases and controls, p=<0.05. Favourable attitude towards drug intake (OR=.132, 95% CI=.059-.294), more stressful life events (OR=2.803, 95% CI=.1.393-5.641) and high social support (OR=.398, 95% CI=.187-.850) in between cases and controls were the significant factors of the relapse in patients with psychosis.

Conclusion: Based on the findings of this study, it can be concluded that the unfavourable attitude towards drug intake, more stressful life and low to moderate social support are the significant factors associated with relapse of psychosis suggesting that there is need to take consideration in order to prevent relapse in psychosis. Psychiatric nurse plays an important role in relapse prevention.

***Index Terms*-** Case-control study, drug attitude, perceived stressful life events, psychosis, relapse, social support

I. Introduction

Psychosis is a severe type of mental illness in which functions of the body and mind are severely disturbed, lacks touch with reality and unaware of own illness and can refuse to take treatment [1]. Relapse is very common in psychotic disorders, and it leads to increase disability among the psychotic patients [2] and the effect of high relapse rate increases economic burden, high morbidity, high readmission rate and a high burden on the health care system and community services [3]. Thus, the relapse in psychosis is issues of global concern[4].

Relapse refers to a return of symptoms after a period of improvement or recovery [5]. Relapse may be expressed in terms of functionality which needs greater interventions [6]. Globally over 20 million people are affected by schizophrenia [7], with relapse rate of 28.0%, 43% and 54% have been reported during the first, second and the third year respectively [8] resulting in increased functional, social, and occupational disability [9]. Relapse in patients with psychosis is a major challenge in the field of mental health service worldwide. [10].

Clients with psychotic disorders are at great risk for relapse and re-hospitalization. The risk is magnified by poor adherence to medications and refusal to accept optimal treatment as prescribed [11]. Individuals with psychotic disorders fails to take prescribed medications are one of the most serious problems in psychiatric care. Failure to take medications often leads to relapses, re-hospitalization and episodes of violence [12].The response to medication tends to decrease with each relapse and the individual becomes more disabled, requiring more support. With each relapse, patients lose their abilities to take care of themselves and enjoy their lives. [13]Medication side effects are reason for medication non-adherence is in fact a less important reason compared to the other factors cited [12].Poor treatment compliance, stressful life events and poor social support are the factors associated with relapse of psychotic disorder.[14, 15]

In a study conducted on impact of life events on the relapse of schizophrenic patients revealed that more than half of the patients had 30% chance of relapse related to the exposure to recent life events. [16] It has been suggested that stressful life events and subsequent psychotic illness. Thus, stressful life events are positively related with subsequent psychotic illness. [17]. In a study conducted on relationships between social support and life events in the relapse of 42 schizophrenic patients found that the patients contented with low social integration in the 9 months of follow up had a higher relapse rate [18].

A large study conducted in ten psychiatric hospitals of China among 876 schizophrenic outpatients aged 18 to 65 years showed that 33.4% had at least one relapse within one year after discharge and 18.8% were re-hospitalized. The most important factor contributing to relapse was poor medication adherence (50.7%), 30% had negative attitude towards medication. Among non-adherent patients 37.9% had a relapse rate was 2.5-fold higher than adherent patients (54.5% versus 20.7%, p<.001). Relapse

with non-adherence to medication (OR=4.602, 95% CI 3.410-6.211)[19].A study conducted at national institute of mental health and neurosciences, Bangalore, India in 2004 for 1 year with the first episode of 57 diagnosed ATPDs, the relapse was recorded in 47.4% and 54.4% at the end of first and second year respectively[20].

Relapse in the early phase of psychosis is associated with increased probability of further relapse and persisting symptoms. Early relapse prevention is therefore most important in patients with psychosis to prevent further damage and deterioration of patient functioning and mental health [21].It is important responsibility of the psychiatric nurse to educate patients and their families about these aspects to prevent relapse in a patient with psychosis [13].Hence, there is a need for a scientific study to explore the relapse factors. Finding out the relapse factors would help the psychiatric nurse to educate patients and their families with a view to prevent relapse in patients, which will enhance a better quality of life. Therefore, the aim of this study was to analyse the factors associated with relapse in patients with psychosis among patients with psychosis.

II. MATERIALS AND METHODS

This study was a hospital-based case control design study carried out on factors associated with relapse in psychosis attending tertiary hospital of Tamil Nadu, India among adult inpatients and outpatients with psychosis. The study was conducted in Mental Health Centre, Christian Medical College, Vellore. The Mental Health Centre provides treatment for all varieties of mental and emotional disorders. It provides all modern forms of psychiatric treatment i.e., Drug Therapy, Electro Convulsive Therapy (ECT), Psychological Therapies and Group Therapy. The purposive sampling technique was used to collect data from relapse and non-relapse groups of psychotic patients. As the case control ratio was kept 1:1, the final sample consisted of 140 psychotic patients; 70 were with relapse symptoms included in case group and 70 patients were with no relapse symptoms at least for the past six months in the control group.

Selection criteria for cases and controls

Patients with psychosis who were diagnosed as schizophrenia/mania with psychosis/ depression with psychosis, above 18 years of age, inpatient or outpatient with a history of at least one episode of psychosis in past and with relapse symptoms who were cooperative and willing to be interviewed and could converse in English/Hindi/Tamil were selected as cases.

Patients with psychosis who were diagnosed as schizophrenia/mania with psychosis/ depression with psychosis, above 18 years of age, inpatient or outpatient with a history of psychosis without relapse symptoms at least within the past six months and on regular treatment who were cooperative and willing to be interviewed and could converse in English/Hindi/Tamil were selected as controls.

Patients with mental retardation, psychosis other than schizophrenia, mania with psychosis, depression with psychosis and organic psychosis excluded.

Data collection instruments

Data collection instrument used for this study was consisted of four parts:

Part-I consisted of self-developed structured questionnaire to assess socio-demographic and clinical characteristics that included age, gender, marital status, educational status, occupation, family income, living, locality, state of residence, diagnosis, age of onset of illness and duration of illness.

Part-II consisted of Drug Attitude Inventory (DAI-10).[22]DAI-10 is a brief drug attitude standardized; validated screening scale which aimed to gain understanding of what people think about medications and what experiences people have of them.DAI-10is considered to be the best predictor of poor adherence in psychosis. The test–retest reliability of DAI-10 was (0.79) [23]. DAI-10 is an easy-to-use instrument seemingly assessing a unique clinical dimension relevant to non-adherence. DAI-10 might be preferred for its simplicity and good psychometric properties. This scale consists of a total of 10 items; six items were scored as true and four scored as false. All the correct responses were scored as "1" and all incorrect responses were scored as "0". The higher score on DAI scale indicated good compliance. [24]

Part-III consisted of Presumptive Stressful Life Events Scale (PSLES).[25] PSLES is a new standardized stressful life events scale developed as suitable scale for assessing stressful life events for Indian patients in 1981 by using open-ended questionnaire on a sample of 200 adult subjects. It was based on fruitful collaborations of Holmes and Rahe, who believed that some kind of a list of commonly encountered stressors would be more useful than the relatively unregulated process of taking an unstructured history. After considerable research, they developed a list of 51 life events, ranging in severity from death of a spouse to going on a pleasure trip/pilgrimage. For each stressful life events item, the mean stress score is given.

Part-IV consisted of Multi-dimensional Scale of Perceived Social Support (MSPSS).[26]MSPSS is a standardized, brief, and free to use research tool designed to measure perceptions of support from 3 sources: Family, Friends, and Significant Others. The scale is comprised of a total of 12 items, with 4 items for each subscale. This is a 7-point rating scale, which ranges from one (very strongly disagree) to seven (very strongly agree). The minimum score is 12 and the maximum is 84. Higher the score shows better social support. Across many studies, the MSPSS has shown to have good to excellent internal consistency and test-retest reliability with a Cronbach's alpha of 0.81 to 0.98 in nonclinical samples, and 0.92 to 0.94 in clinical samples.[27]For categorization, the Significant Other Subscale sum across items 1, 2, 5, & 10; Family Subscale sum across items 3, 4, 8, & 11; Friends Subscale sum across items 6, 7, 9, & 12, and then divide by 4 in each of the sum. For total scale sum across all 12 items, then divide by 12. Any mean scale score ranging from 1 to 2.9 could be considered low support; a score of 3 to 5 could be considered moderate support; a score from 5.1 to 7 could be considered high support.

All the above questionnaires were translated into Tamil and Hindi languages were translated back and tested during pilot study conducted with 20% of the proposed sample size and found suitable to use in the Indian setting.

Data were collected through face-to-face interview using printed questionnaires in English/Tamil/Hindi according to the

respondents speaking language. The investigator used an interpreter throughout the study to administer the Tamil translated questionnaire to the respondents who speak Tamil and investigator rated their responses as per the interpreter. English and Hindi speaking respondents were interviewed by the investigator herself. All the respondents who fulfilled the inclusion criteria were included in the study. The total of 140 (equal number of relapse 70 and non-relapse 70) were interviewed from inpatient and outpatient department. It took about 45 minutes to complete the interview for each respondent.

Ethical Consideration

Psychotic patients were used as respondents of the study, so great care was exercised to protect their rights. Ethical consideration was maintained by obtaining written permission from the Dissertation Committee of College of Nursing, Christian Medical College, Vellore, South India for the study. Informed verbal consent was obtained prior to information collection after explaining the objective of the study to all the participants before collecting the data. Only interested participants were included in the study. Privacy of the participants was assured by collecting data in a separate room. Confidentiality of the respondents was maintained by coding and decoding and explaining the participants as the obtained data were used only for study purpose. Anonymity of the respondents was assured by not writing participants' name on the questionnaires and by keeping the collected information confidential.

Statistical analysis:

Data cleaning and analysis was done using Statistical Package of Social Sciences (SPPS) software version 16. Descriptive statistics was used to describe the sample socio-demographic and clinical characteristics. For analyzing the factors associated with relapse in patients with psychosis, inferential statistics (Pearson Chi-square) was used and to identify the odds, risk estimation was done. P-value was set at 0.05.

III. RESULTS

Table 1: Socio-demographic information of Case and Control groups, N=140

Characteristics	Case Group n=70		Control Group n=70	
	No	%	No	%
Age in years				
≤ 29	30	42.9	23	32.9
30 – 39	24	34.3	23	32.9
40 – 49	9	12.9	14	20.0
50 – 59	5	7.1	9	12.9
≥ 60	2	2.9	1	1.4
Mean age ± SD	33.51±10.94		35.79±11.12	
Gender				
Male	38	54.3	46	65.7
Female	32	45.7	24	34.3
Marital status				
Single	32	45.7	27	38.6
Married	34	48.6	37	52.9
Widowed/Separated	4	5.7	6	8.6
Educational status				
Illiterate	8	11.4	9	12.9
Primary school	12	17.1	21	30.0
Secondary school	18	25.7	19	27.1
Higher Secondary school	15	21.4	14	20.0
Graduate and above	17	24.3	7	10.0
Occupation				
Daily labour	11	15.7	17	24.3
Homemaker	14	20.0	19	27.1
Business	3	4.3	2	2.9
Service	9	12.8	6	8.6
No job	23	32.8	21	30.0
Any other (student, retired)	10	14.3	5	7.1
Family Income per month (in Rs.)				
< 5000	37	52.9	52	74.3
≥ 5000	33	47.1	18	25.7
Living				

Alone	1	1.4	2	2.9
With family	69	98.6	68	97.1
Locality				
Rural	34	48.6	33	47.1
Urban	36	51.4	37	52.9
State				
TamilNadu	43	61.4	59	84.3
West Bengal	12	17.1	2	2.9
Andhra Pradesh	4	5.7	4	5.7
Karnataka	2	2.9	4	5.7
Others (Assam, Chhatisgath, Jharkand, Kerala, Meghalaya, Orissa, Vihar)	9	12.8	1	1.4

Table 2: Clinical variables of Case and Control groups, N=140

Clinical variables	**Case Group n=70**		**Control Group n=70**	
	No	**%**	**No**	**%**
Diagnosis				
Schizophrenia	46	65.7	50	71.4
Mania with psychosis	14	20.0	12	17.1
Depression with psychosis	10	14.3	8	11.4
Age of onset in years				
≤ 20	19	27.1	12	17.1
21 – 30	30	42.9	26	37.1
31 – 40	14	20.0	22	31.4
> 40	7	10.0	10	14.3
Mean age of onset ± SD	26.73±9.04		30.77±9.78	
Duration of illness in years				
<1	5	7.1	6	8.6
1-5	33	47.1	44	62.9
6-10	18	25.7	11	15.7
>10	14	20	9	12.8
Mean duration of illness ± SD	6.80±6.01		5.00±5.43	

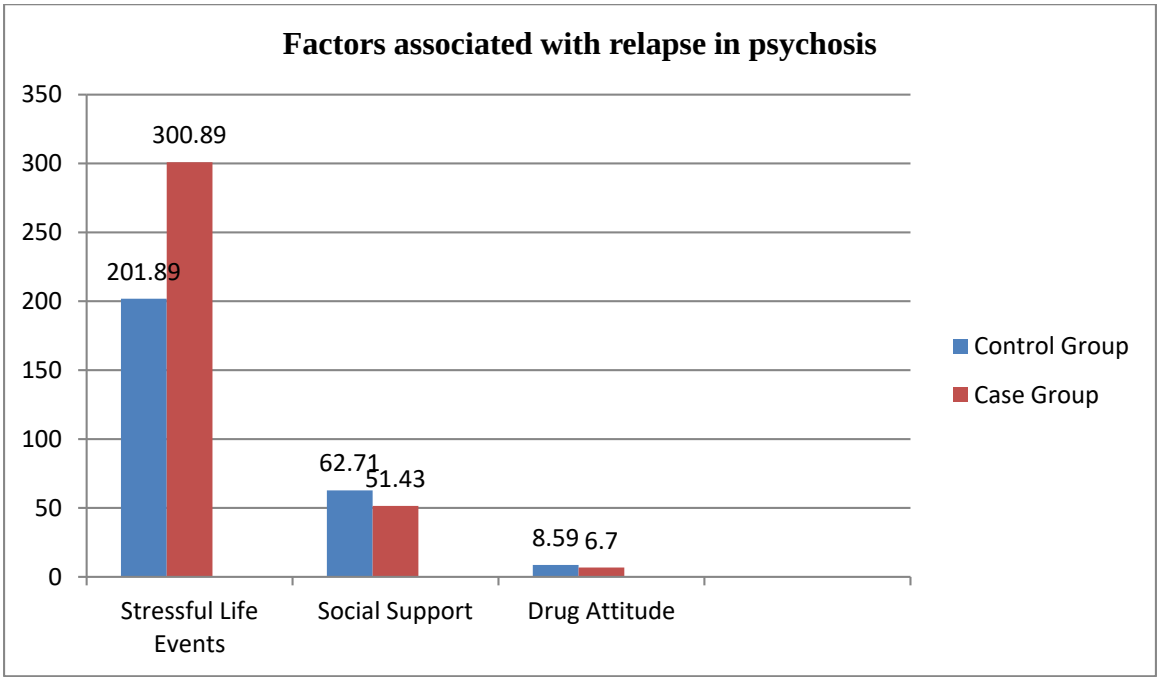

Figure 1. Mean score of factors associated with relapse in psychosis among patients with psychosis

Table 3:Perceived social support of Case and Control groups, N=140

Perceived Social support	Case Group n=70		Control Group n=70		Odds Ratio	95% CI	p-value*
	No	%	No	%			
Family support							
Low to moderate support	61	87.1	51	72.9	.109	.036-.335	.000
High friends support	9	12.9	19	27.1			
Friends support							
Low to moderate support	25	35.7	4	5.71	.396	.165-.951	.028
High family support	45	64.3	66	94.3			
Significant others support							
Low to moderate support	28	40	5	7.1	.115	.041-.322	.000
High significant others support	42	60	65	92.9			

***P value set as <0.05**

Table 4: Factors associated with relapse in psychosis among Relapse and Non-relapse group, N=140

Factors of relapse	Case Group n=70		Control Group n=70		Odds Ratio	95% CI	p-value *
	No	%	No	%			
Attitude towards drugs							
Unfavourable attitude	41	58.6	11	15.7	.132	.059-.294	.000
Favourable attitude	29	41.4	59	84.3			
Stressful life events							
Less stressful life events	33	47.1	50	71.4	2.803	1.393-5.641	.003
More stressful life events	37	52.9	20	28.6			
Perceived Social support							
Low to moderate support	56	80	43	61.4	.398	.187-.850	.013
High social support	14	20	27	38.6			

***P value set as <0.05**

IV. RESULTS

The mean age of the respondents was 33.51±10.94 in cases and 35.79±11.12 in the control group. About 54.3% in case and 65.7% in control group were male and 48.6% in case and 52.9% in control group were married. Regarding education, 25.7% in cases had secondary school education and control group 30% had primary school education with about 1/3rd of the respondents were jobless in both the groups. About 52.9% in case and 74.3% in control group had a family income less than Rs. 5000. Considering the living details, 98.6%in the case and 97.1% in control were living with their family. In relation to locality, 51.4% of the participants in case and 52.9% in control group were from urban background. Regarding the State of residence, 61.4% in case and 84.3% in control group were from Tamil Nadu (Table 1). About 65.7% in case and 71.4% in control group were diagnosed to have schizophrenia and 42.9% in case and 37.1% in control group had the onset of illness at the age between 21-30 years with the mean age of onset of illness was 26.73±9.04 and 30.77±9.78 years. Considering the duration of illness, 47.1% in the case and 62.9% in control group had one to five years duration of illness with mean duration 6.80±6.01 and 5.00±5.43 years (Table 2). Mean score ± SD of stressful life events in case was 300.88±193.62 and 201.88±119.93 in control group; social support in case group was 51.43±12.35 and 62.76±9.76 in control; drug attitude in case group was 6.70±1.95 and 8.58±1.16 in control group (Figure 1). Low to moderate family support was greater in case 87.1% compared to 72.9% in control group and high friends support was 94.3% in control group and 64.3% in case group. High significant others support was 92.9% in control group and 60% in case group. There were significant differences in family, friends and significant others support with relapse in psychosis in between case and control groups (OR=.109, 95% CI=.036-.335, p=.000; OR=.396, 95% CI=.165-.951, p=.028; and OR=.115, 95% CI=.041-.322, p=.000). It shows case group had low family, friends and significant others support and psychotic patients have high social support, they less likely to have relapsed (Table 3).

Unfavourable attitude towards drug intake were more (58.6%) in case group as compared to control group 15.7%.

Regarding stressful life events, more stressful life events were more (52.9%) in case group than in control group 28.6% and low to moderate social support were more (80%) in cases in comparison to control group 61.4%. Researcher found that there were significant differences in drug attitude, perceived stressful life events and social support in between cases and controls, p=<.05. Favourable attitude towards drug intake (OR=.132, 95% CI=.059-.294), more stressful life events (OR=2.803, 95% CI=.1.393-5.641) and high social support (OR=.398, 95% CI=.187-.850) in between cases and controls were the significant factors of the relapse in patients with psychosis. It reveals cases had less favourable attitude towards drug intake, more stressful life events and less high social support in comparison to control group (Table 4).

V. DISCUSSION

This study was designed as a hospital-based case control study aimed to analyse the factors associated with relapse in psychosis among patients with psychosis in a tertiary hospital of Tamil Nadu, India.

In present study, mean age of the participants in cases was 33.51±10.94 and 35.79±11.12 in control group which was higher to the cross-sectional study conducted among the one hundred relapse and one hundred non-relapse cases of schizophrenia attended in three psychiatry outpatient departments of Dhaka, Bangladesh showed 28.7±7.4 in relapse and 27.9±6.0 in non-relapse group. [28]

This study findings revealed that the low to moderate family support was greater in case 87.1% compared to 72.9% in control group and high friends support was 94.3% in control group and 64.3% in case group. High significant others support was 92.9% in control group and 60% in case group. There were significant differences in family, friends and significant others support with relapse in psychosis in between case and control groups (OR=.109, 95% CI=.036-.335, p=.000; OR=.396, 95% CI=.165-.951, p=.028; and OR=.115, 95% CI=.041-.322, p=.000). It shows case group had significantly low family/friends/significant others support and if psychotic patients have high social support; they are less likely to have relapsed. This study finding was contrasted to a cross sectional study conducted among352 patients with schizophrenia in northern, central, and southern regions of Thailand which showed the finding of family support was at a moderate level in both psychotic relapse and non-relapse groups and thus there was no significant difference with p=0.35.[29]

This study findings regarding attitude towards drug showed that unfavourable attitude towards drug intake were more (58.6%) in case group as compared to control group was 15.7%. There was a significant difference in attitude towards drug intake with relapse in psychosis between the two groups (OR=.132, 95% CI .059-.294, p=.000). It means unfavourable attitude towards drug intake leads to poor adherence to treatment and increases the risk of relapse in patients with psychosis. This study finding is similar to a cross sectional study conducted among 386 patients with psychotic disorder in Jimma University Specialized Hospital, Southern Ethiopia which showed the odds of developing psychotic relapse among patients compliant to medication was 69% lower than that of patients with not compliant to medications (OR=.310, 95% CI=0.12- 0.80).[14] Another cross-sectional study conducted among one hundred relapse and one hundred non-relapse cases of schizophrenia who attended three psychiatry outpatient departments of Dhaka, Bangladesh presents the similar findings where non-compliance was higher among the relapse group (80.0%) than the non-relapse group (14%) and was statistically significant p=<.001.[28]in addition, similar finding was found in the study conducted among 217 schizophrenic patients in Johannesburg that showed that two-third of the study population were poor adherent to treatment in relapse with p=<.001.[10]furthermore, in a retrospective observational study conducted among 876 people of Republic of China also revealed similar findings in which 30% of respondents had negative attitudes towards medicine with 2.5times more relapse than adherent to medicine 54.5% versus 20.7%with (OR=4.602, p=<.001).[30]

Regarding stressful life events in this study, more stressful life events were higher(52.9%) in case group than in control group 28.6% with a significant difference in between two groups (OR=2.803, 95% CI=.1.393-5.641p=.003). This study finding was similar to findings of a cross sectional study conducted among the one hundred relapse and one hundred non-relapse cases of schizophrenia attended in three psychiatry outpatient departments of Dhaka, Bangladesh showed that occurrence of stressful life events was 10% in relapse and 1% in non-relapse cases which was statistically significant with p=<.001.[28]

Present study findings revealed that low to moderate social support were higher (80.0%) in relapse group in comparison to non-relapse group (61.4%) with a significant difference in perceived social support in psychosis between two groups (OR=.398, 95% CI=.187-.850, p=.013). It means lower social support is one of the factors associated with relapse in patients with psychosis. This study findings are consistency with a cross sectional study conducted among 386 patients with psychotic disorder in Jimma University Specialized Hospital, Southern Ethiopia showed the odds of developing psychotic relapse among patients having high score on social support was 48% lower than that of patients who were having low social support (OR=.52, 95% CI=.28, .95)[14]A study conducted in Germany on predictors of medication adherence among 127 patients with severe psychiatric disorders revealed having social support significantly helped to decrease relapse with (OR=1.02, p=<.001).[31]A qualitative study conducted, involving in-depth interviews of seven people with schizophrenia and their seven family caregivers in Tanzania perceived no adherence to antipsychotic medication as a leading risk factor of relapse; other risks included poor family support and stressful life events. Family support and adherence to antipsychotic medication were viewed as protective factors.[32]

VI. CONCLUSION

Based on the findings of the study, majority of patients in the relapse group were having unfavourable attitude towards drug intake, more stressful life events and lower perceived social support. There was strong statistically significant association between relapse and attitude towards drug intake, stressful life events and perceived social support. It suggests that there is a need to take consideration to prevent relapse in psychosis. Psychiatric nurse plays an important role in relapse prevention. Assessment of

drug attitude, life events, and perceived social support during nursing intervention and discharge time might be helpful for the prevention of relapse.

VII. LIMITATIIONS

Because of the nature of cross-sectional study causality association could not be made. Also, purposive sampling technique restricts the generalizability of the findings.

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