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Original article

Relationship between Psychological Resilience and Frequency of Relapse and Rehospitalization in A sample of Schizophrenic Patients Visiting Port-Said Mental Health and Addiction Treatment Hospital

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ABSTRACT

Background: Relapse is common and causes a high burden in schizophrenic patients. Stress is a main factor in relapse, so stress-resistant factors are proposed to have an important role to prevent it and improve outcomes in schizophrenia. One of these factors is Resilience.

Aim of the work: To find the relationship between resilience and frequency of relapse among schizophrenic patients, and to help in developing new therapeutic programs that may lead to decrease the frequency of relapse in schizophrenic patients.

Patients and Methods: This is a cross-sectional study. Eighty schizophrenic patients were selected among patients attending Port-Said Mental Health Clinic; 56 were males and 24 were females. Psychotic state was assessed using Positive and Negative Syndrome Scale (PANSS); Medication adherence was assessed using Morisky-8 scale. Resilience was assessed using The Resilience Attitude Scale.

Results: There were generally no age, gender, work type, educational or social state differences in relation to frequency of admission. In addition, there was no statistical relation to frequency of admission as regards to education and marital state. On the other side, patients who were admitted less than or equal twice have generally high resilience level than who were admitted more than twice.

Conclusion: Resilience is a very important protective factor against relapse in patients with schizophrenia.

Keywords: Schizophrenia; Relapse; Resilience; Stress; Rehospitalization.

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INTRODUCTION

Relapse can be defined as ***"The return of a disease after partial recovery"*** [1], and in Schizophrenia, Hospitalization was widely used as a proxy for relapse or a component of definition [2]. It is common and causes a high burden in schizophrenic patients, and may lead to stay for long period on medications. It also associated with medication side effects, substance use and comorbid medical illness[3]. Schizophrenia is characterized by frequent relapse of psychosis, which in turn leads to frequent hospitalization. 40% of patients experience relapse at least within one year following hospitalization, which cause a heavy human and financial burden[4]. Studies suggest that chronic stress is a very important risk factor in schizophrenia development and relapse. On the other hand adapting will against stressors may be a protective factor against stress related disorders[5]

Resilience is one of important stress resistant factors as The American Psychological Association define it as "The process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress — such as family and relationship problems, serious health problems or workplace and financial stressors. It means, "bouncing back" from difficult experiences." [6] Many studies were performed to study resilience in many mental disorders as PTSD, MDD and schizophrenia. Most of these studies revealed that resilience in patients with mental disorders is generally less than resilience in healthy patients.[7]. According to "Diathesis stress model"[8] and "Allostasis and Allostatic Load model"[9], stress is highly related to schizophrenia development and prognosis. Therefore, we performed our current study to reveal the relationship between a very important stress resistant factor as resilience and remission maintenance of schizophrenic patients, hoping that may open the door for future researches to understand many aspects of schizophrenia and its recovery.

PATIENTS AND METHODS

It is a Cross-Sectional study that (80) Schizophrenic Patients were selected to participate from the outpatient clinic of Port-Said Mental Health and Addiction Treatment Hospital, Port Said, Egypt. (Confidence level: 95%, Power: 90%, Odds ratio: 0.5). The psychiatry specialists and consultants, depending on *the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, performed the diagnosis. Further Inclusion criteria were (a) Patients that were diagnosed with schizophrenia before 2016. (b) Outpatient status, (c) Age 18-55 years. Further Exclusion criteria were (a) Patients who suffer from serious central nervous system disease or other medical conditions, (b) Patients with Substance Use Disorder, (c) Patients who cannot read or write, (d) Patients with low medication adherence level, (e) Patients with Active Psychotic State.

Patients were categorized into two groups, Group A (Tested group) included patients who were hospitalized more than twice during 2016 and 2017 (53 Patients). Group B (Controlled group) included patients who were hospitalized twice or less during 2016 and 2017 (27 patients). The study were performed in 2018. Resilience was measured and compared in patients of both groups.

Measures: Sociodemographic data, that is, age, educational state, marital state, year of diagnosis with schizophrenia, Frequency of admission during the last 2 years (2016,2017) and working status were recorded based on a semistructured interview. Psychotic state was assessed using the *Positive and Negative Syndrome Scale (PANSS)*[10]. Medication Adherence was assessed using *Moriskey-8 Scale*.[11]. Resilience was assessed using *The Resilience Attitude Scale by* Mekhaemer[12]. The scale contains 47 items covering the resilience characteristics of Ability of Commitment (15 items), Internal Feeling of Control (16 items) and Willing to take Challenges (16 items). Patients were instructed to evaluate, on six-point scale, how well the feelings and thoughts describes theirs: Not at all (1 point), To some extent (2 points), and Very well (3 points). The total score ranges from 47-141, with higher score reflecting greater resilience. The Resilience Attitude Scale has been validated in Arabic Culture in Egypt and has been reliable among Egyptian adult Patients (Cronbach's alpha= 0.84)[13].

Statistical Analysis: Data were collected, coded, refined and analyzed using ***the 20th edition of IBM SPSS***. Data were presented as numbers and percentages for qualitative data, median, standard deviation and ranges for quantitative data with a parametric distribution and median with the interquartile (IQR) set of quantitative data with a non-boundary distribution***.*** ***The Chi-Square test*** was used to compare the two groups with qualitative data, and ***Fisher test*** was used instead of Chi-Square when we found the expected number in any cell less than 0.5. ***The independent t test*** was used to compare the two groups with the quantitative data and the parameter distribution. ***Mann-Whitney*** was used to compare the two groups with the quantitative data and the non-standard distribution. The confidence level was set to 95 % with accepted margin of error 5%, and ***the P value*** as considered significant as follows: P>0.05: insignificance, P<0.05: significance, P<0.01: high significance.

Ethical Considerations: The Study was approved by Research and Ethics Committee, Faculty of Medicine, Al Azhar University in Cairo. All the study steps was explained to the participants and previous written informed consent was taken from them.

RESULTS

Patients' sociodemographic characteristics: 80 schizophrenic patients participated in the study, 70% were males and 30% Females, age 20-50 year (Mean 30.5 +/- 7.66) , 10% was unemployed, all of them were educated, 17.5% were married, 17.5% divorced, 10% widowed and 55% single. All Patients were highly adherent to medication as regards to **Moriskey-8 scale**, and in a fully remission state at the time of interview as regards to **PANSS**.

Sociodemographic characteristics and frequency of relapse: There was no statistical significant correlation between age, sex, marital state or working state and Frequency of relapse as shown in Tables [1, 2 and 3].

Resilience and frequency of Relapse: There was high significant statistical correlation between Level of Resilience and frequency of relapse and admission (P value<0.001) as shown in Table [4]. Also there was significant statistical Correlation between the Three Resilience Characteristics and frequency of relapse as shown in Table [5].

Table [1]: Relation of Sex and Age to Frequency of Relapse

		Relapse ≤2 (No.=27)		Relapse >2 (No.=53)		Chi square test/ Independent t test	
		No.	%	No.	%	X^2/t	P value
Sex	Females	9	33.3%	15	28.3%	0.216	0.642
	Males	18	66.7%	38	71.7%		
Age	Mean ±SD	32.70	9.93	29.38	6.01	1.865	0.066

Table (2): Relation of Education and marital state to frequency of relapse

		Relapse ≤2 (No.=27)		Relapse >2 (No.=53)		Chi square test	
		No.	%	No.	%	X^2	P value
Education State	High Education	8	29.6%	4	7.5%	***9.252***	***0.099***
	Intermediate Education	9	33.3%	23	43.4%		
	Primary Education	6	22.2%	10	18.9%		
	Preparatory Education	2	7.4%	8	15.1%		
	Religious Secondary Education	2	7.4%	4	7.5%		
	General Secondary education	0	0.0%	4	7.5%		
Marital State	Divorced	5	18.5%	9	17.0%	***12.319***	***0.260***
	Married	3	11.1%	11	20.8%		
	Single	14	51.9%	30	56.6%		
	Widowed	5	18.5%	3	5.7%		

Table (3): Relationship between working state and frequency of relapse

		Relapse ≤2 (No.=27)		Relapse >2 (No.=53)		Chi square test	
		No.	***%***	***No.***	***%***	***X^2***	***P value***
Working State	Unemployed	3	11.1%	7	13.2%	4.455	0.879
	Baker	2	7.4%	5	9.4%		
	Builder	5	18.5%	6	11.3%		
	Cooker	0	0.0%	4	7.5%		
	Driver	6	22.2%	7	13.2%		
	Fish seller	2	7.4%	5	9.4%		
	Attorney	3	11.1%	4	7.5%		
	Seller	2	7.4%	4	7.5%		
	Waiter	2	7.4%	5	9.4%		
	Worker	2	7.4%	6	11.3%		

Table (4): Relationship between resilience and frequency of relapse

		Relapse ≤2 (No.=27)		***Relapse >2 (No.=53)***		***Chi square test***	
		No.	%	No.	%	***X^2***	***P value***
Resilience	Low Resilience	0	0.0%	32	60.4%	*30,984*	*<0.001*
	Moderate Resilience	8	29.6%	15	28.3%		
	High Resilience	19	70.4%	6	11.3%		

Table (5): Relationship between Resilience Characteristics and Relapse

		Relapse ≤2 (No.=27)		Relapse >2 (No.=53)		Chi square test	
		No.	%	No.	%	X^2	P value
Ability to Commitment	Low	2	7.4%	19	35.8%	25.512-	<0.001
	Moderate	5	18.5%	25	47.2%		
	High	20	74.1%	9	17.0%		
Willing to Take Challenges	Low	0	0.0%	18	34.0%	23.591	<0.001
	Moderate	15	55.6%	32	60.4%		
	High	12	44.4%	3	5.7%		
Internal Feeling of Control	Low	0	0.0%	29	54.7%	15.354	<0.001
	Moderate	13	48.1%	15	28.3%		
	High	14	51.9%	9	17.0%		

DISCUSSION

This cross-sectional study applies both person and variable-based concepts of resilience among schizophrenic patients. First, we assessed resilience based on the person-based classification, and then we compare the results in both groups (control and tested group). The study showed no significant statistical correlation to frequency of relapse regarding to sex, age, education, working or marital state.

As regards to resilience in all study participants, there was 40% of patients had low resilience, 28.75% had moderate resilience and 37.5% had high resilience. That may be consistent with results of many studies which revealed that resilience is generally low in schizophrenic patients [7,13,14], but we cannot ensure these results as we did not compare resilience with healthy individuals.

Relapse can be defined as ***"The return of a disease after partial recovery"***[1], and in Schizophrenia, Hospitalization was widely used as a proxy for relapse or a component of definition[2].

Regarding to comparison of resilience among patients of both groups with frequency of relapse, the study revealed a strong relationship between level of resilience and frequency of relapse (P value < 0.001). Among patients with frequent relapse more than twice, low resilients were 60%, Moderate resilients were 28.3% and high resilients were only 11.3%.Among patients with relapse frequency twice or less, High resilients were 70.4%, Moderate resilients were 29.6% and there were no patients with low resilience.

Our study shows that the more the resilience level is, the less the relapse frequency will be. This revealed that resilience is a very important factor that can maintain remission and decrease relapse in schizophrenic patients. This is consistent with Bernadetta and her colleagues' study that revealed that resilience has a very important role in improvement of schizophrenia symptoms; hence, it helps in schizophrenia recovery[15]. In addition, it consistent with Porcelli opinion that resilience is one of important protective factors that if it got strengthen in schizophrenic patients it may decrease the severity of symptoms and may be frequency of relapse too [16].

As regards to resilience characteristics of Ability of Commitment, Internal Feeling of Control and Welling to Take Challenges, results shown high significant relationship between them and frequency of relapse as (P value < 0.001), so their high level may help in remission maintenance**.** This may be consistent with a recent study[17] revealed that the ability to be committed may help in maintain remission. Other studies concluded that internal feeling of control can decrease the severity of psychotic symptoms[18], and the more the patient feels control over his life, the more the remission could be maintained longer[19]. Patients with moderate level of Willing to Take Challenges is nearly similar in both groups (60.4% in group A and 55.6% in group B) and this is may be consistent with Thabet and Abadsa study which concluded that level of these characteristic is not high in psychotic patient[13],[14].

Therefore, we can conclude that resilience - and its main three characteristics - may be considered as a protective factor against relapse in schizophrenia, as our study shows that resilience in patients with frequent relapse is less than resilience in patients with less relapse frequency. So psychotherapeutic programs that aim to improve resilience may help in prevent or at least decrease schizophrenia relapse.

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