Perceived Social Support, Cognitive Dysfunction and Recovery Among Patients with Schizophrenia

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ABSTRACT

Background: Schizophrenia is a psychotic disorder with a significant risk of impaired perceived social support and cognitive dysfunction, which negatively affects the level of recovery. **Aim of the study:** to examine the relation between perceived social support, cognitive dysfunction, and recovery among patients with schizophrenia. **Subjects and methods: Design:** a descriptive cross-sectional design was used. **Setting:** study was established at the psychiatric inpatient and outpatient clinic at EL-Azazy Hospital for Mental Health in Abo-Hammad City, Sharkia Governorate, Egypt. **Subjects:** A purposive sample of 140 schizophrenic patients. **Tools of data collection:** Four tools were used for data collection, including a structured interviewing questionnaire, composed of two parts: socio-demographic characteristics and clinical data, multidimensional perceived social support, a mini-mental state examination, and a recovery assessment scale-domains and stages. The domains are doing things I value, looking forward, mastering my illness, and connecting and belonging. **Results:** The study findings revealed that there was a highly statistically significant positive correlation between the patient's total recovery and total social support score (r = 0.417) and total mental state score (r = 0.560). Furthermore, there was only a statistically significant positive correlation between the patient's social support and total mental state score (r = 0.049). **Conclusion:** The overall perceived social support score, recovery score, and mental state score of the studied patients showed a highly statistically significant positive correlation. Furthermore, the overall mental state score and the total perceived social support score of the patients under study showed a statistically significant positive correlation. **Recommendation:** This study recommended psycho-motivational training for individuals with schizophrenia in order to enhance their recovery, cognitive function, and perceived social support.

Keywords: Cognitive dysfunction, Perceived social support, Recovery, Schizophrenia.

Introduction

Schizophrenia is a serious, long-lasting neurological disorder that affects all important areas of life. Patients with schizophrenia (PWS) face numerous challenges, including difficulties with time management, self-care, thriving in relationships, the workplace, education, and society **(Ata, Bahadir-Yilmaz and Bayrak, 2020).** Along with numerous therapeutic challenges and a limited chance of recovery, those clients also experience stress, stigma, and prejudice, which may negatively affect both their own and their families' life quality **(Özdemir and Kavak Budak, 2022).**

According to estimates from the National Institute of Mental Health (NIMH), between 0.25 and 0.64% of Americans suffer from schizophrenia, and the prevalence of the disorder is believed to be between 0.33 and 0.75% worldwide (for non-institutionalized individuals) **(Patel et al., 2020).** Since 1990, the frequency of occurrence of schizophrenic cases in North Africa and the Middle East has remained constant at 1.6 million prevalent cases and 97.7 thousand incident cases **(Safiri et al., 2024).**

Perceived social support is a multifaceted concept that can lessen the intensity of psychotic symptoms. It has been shown to support the recovery process and protect schizophrenic patients' quality of life and social functioning **(Fan et al., 2021).** It is described as the feeling or perception that others care about, love, respect, and revere you, and you are a member of a social group with receptive responsibilities and support. It can originate from a spouse, friends, family, coworkers, or social and communal connections. In the same way, it refers to how people understand love and the support they get from everyone around them **(Hailey et al., 2023).**

Cognitive dysfunction is a basic component of schizophrenia and a strong indicator of prognosis. It occurs before the psychotic episode begins **(Carrión et al., 2018).** It is found in eighty percent of people with schizophrenia, including those experiencing their first psychotic episode, who have never taken psychotic medication before. Reasoning/problem solving, verbal and visual learning, working memory, processing speed, and attention/vigilance were among the areas that were shown to be unique to schizophrenia **(Karyakina and Shmukler, 2021).**

Recovery can be characterized as a mindset, a style of living, and a strategy for handling the problems of the day in order to restore a new and valued sense of integrity that goes beyond the boundaries of the handicap **(Hofer et al., 2016).** Mentally ill people have described it as a travel of incremental, important actions, marked by a growing feeling of agency and autonomy **(Boucher, Groleau and Whitley, 2019).**

People with schizophrenia are more susceptible to interpersonal problems, social dysfunction, and weak social networks, which results in poor social outcomes. Typically, these result in a lack of social support, which has been linked to poor symptom control, length of hospital stays, and mortality. For PWS, improvements in treatment compliance and accessibility, along with a rise in perceived social support, have been crucial to clinical recovery **(Commey et al., 2023).**

In people with schizophrenia, the nurse actively promotes sociability.

Educating patients and their relatives on psychotic disease, the value of adherence to medication, monitoring strategies, and strengthening social support bonds between patients and their families are all examples of the help that psychiatric nurses provide. As a result, social support system mobilization is thought to be an inexpensive strategy to aid in recovery and enhance health outcomes, and it may be a significant component of nursing care **(El-Monshed and Amr, 2022).**

Significance of the study

Among mental illnesses worldwide, schizophrenia is the third most common cause of disability. Around 1% of people globally are affected at some point in their lives **(McCutcheon, Marques and Howes, 2020).** Schizophrenia is one of the most prevalent psychotic disorders in Egypt, affecting 1.1% of the population, as stated by the Egyptian National Institute of Mental Health **(Ella et al., 2024).** Furthermore, correlations between recovery and cognitive processes, including memory **(Cuesta et al., 2022).** and executive functions, have been documented, indicating that social outcomes and recovery may be supported by helping for cognitive dysfunction **(Van Aken et al., 2022).** Thus, this study conducted to examine the relationship between perceived social support, cognitive dysfunction, and recovery among patients with schizophrenia.

Aim of the study

The aim of this study was to examine the relation between perceived social support, cognitive dysfunction, and recovery among patients with schizophrenia.

Research questions

1- What is the level of perceived social support among patients with schizophrenia?
2- What is the level of cognitive dysfunctions among patients with schizophrenia?
3- What is the level of recovery among patients with schizophrenia?
4- What is the relation between perceived social support, cognitive dysfunction and recovery among patients with schizophrenia?

Subjects and methods

Study design

The study used a descriptive cross-sectional design.

Setting

The existing study was conducted at EL- Azazy hospital for Mental Health in Abo-Hammad City, Alsharkia governorate, specifically, inpatient and outpatient clinics for patients with schizophrenia.

Subjects

A purposive sample was used in the current study which composed of 140 psychiatric patients with schizophrenia in the above-mentioned setting.

Sample size

The percent of high recovery level of schizophrenic patients was 10.5% **(Mohamed, Barakat and Shams El-Din, 2024).** The total number of schizophrenic patients attending El-Azazy Psychiatric Hospital in Sharkia Governorate for 6 months is 5760; at a confidence level of 95%, the sample size was calculated to be 140 patients.

Inclusion criteria

Male and female patients who are at least 20 years old or more; being aware of time, location, and others; having the ability to communicate verbally.

Exclusion criteria

A persistent medical or neurological disease that would impair the patient's capacity for communication and history of drug or substance abuse, excluding nicotine.

Tools of data collection

The researcher gathered the data of this study by utilizing four tools as the following:

Tool I: Structured Interviewing Questionnaire:

Part I: Socio-demographic data, which included age, sex, educational level, marital status, job, residence, and income level, etc.

Part II: Clinical data, which included age at onset of the disease, frequency of hospitalization, frequency of visits to outpatient clinics, treatment compliance, family history of mental illness, etc.

Tool II: Multidimensional perceived social support (MPSS):

Zimet et al., (1988) created it to measure how much support one feels from three different sources: family (4 items), friends (4 items), and significant others (4 items). It consists of 12 items.

Scoring system:

A seven-point Likert-type scale was used to rate it, with 1 denoting "very strongly disagree" and 7 denoting "very strongly agree." The cutoff point is 50%, and the item ratings range from 12 to 84. A percentage score was created from the total score. Perceived social support is rated as poor if it is less than 50%, ordinary if it is between 50 and 75%, and good if it is 75% or higher. The reliability of this scale was 0.905.

Tool III: Mini-Mental State Examination (MMSE):

Flostein, Folstein and McHugh, (1975) developed it to measure the level of cognitive dysfunction. It consists of 30 items with five dimensions: orientation (10 items), memory (3 items), attention and calculation (5 items), recall (3 items), and language capacity (9 items).

Scoring system:

The highest possible score is 30. Cognitive impairment is indicated by a score of 23 or below. The reliability of this scale was 0.697. Questionably significant: 25-30, mild: 20-24, moderate: 10-19, and severe: 0-9.

Tool IV: Recovery Assessment Scale – Domains and Stages (RAS-DS):

Hancock et al., (2015) developed it to measure self-rated recovery in mental health. It has 38 items. The tool has 4 recovery domains: Doing Things I Value (6 items), Looking Forward (18 items), Mastering My Illness (7 items), and Connecting and Belonging (7 items).

Scoring system:

It is rated on a four-point scale: completely true (4), mostly true (3), a bit true (2), and untrue (1). The RAS-DS cutoff point is 50%, and the total score varies from 38 to 152. A percentage score was created from the total score. Perceived social support is rated as poor if it is less than 50%, ordinary if it is between 50 and 75%, and good if it is 75% or higher. The reliability of this scale was 0.955.

Content validity and reliability

The tools were revised by a three-person consulting committee. At Zagazig University, two assistant professors of psychiatric and mental health nursing as well as one assistant professor of community health nursing conducted each of these instruments' items' content validity. All modification that was requested was implemented. To confirm the scales' initial validity, the researcher translated each one into Arabic using the translate-back-translate technique. **The reliability** of the instruments was assessed using the Cronbach's alpha test.

Fieldwork

The researcher met with the hospital's management and head nurse after securing the necessary authorization to carry out this study. They described the study's objectives and methodology as well as the information assortment forms, and they got their approval and cooperation to begin collecting data. The chosen patients were then interviewed by the researchers, who also gave their introductions and described the nature and goal of the study. Selected patients were then asked to give their informed consent to take part in the trial.

To gather data, the researcher visited El-Azazy Hospital twice a week between 9:30 a.m. and 1 p.m. The data sheet was finished concurrently with the distribution. Mid-October 2024 marked the beginning of the three-month assessment period, which ended in mid-January 2024.

Pilot study

A pilot study involved 14 schizophrenic patients, around 10% of the entire sample size. The goals were to estimate the time required to finish the forms for gathering data and evaluate the practicality and clarity of the tools.

Administration and ethical consideration

The study request with code M.D.ZU.NUR/215/16/6/2024 was approved by the Zagazig University Faculty of Nursing's Ethical Committee. The goals of the study were described to the participants, and although participation was entirely voluntary, they were liberated to stop at any time and without giving an explanation. Furthermore, participants' privacy and anonymity were protected by the coding of all data.

An official permission to conduct this study was obtained by submitting an official letter issued by the Dean of the Faculty of Nursing at Zagazig University to the director of the General Secretariat of Mental Health and Addiction Treatment in Cairo City. Accordingly, approvals to conduct the study were obtained from the director of the General Secretariat of Mental Health and Addiction Treatment following the application of all required procedures and documentation, which took about 2 months. Then, approvals were obtained from the hospital director and the nursing director of El-Azazy Hospital for Mental Health.

Statistical analysis

In order to organize, tabulate, and statistically analyze the collected data, IBM-compatible PCs running SPSS version 25 for Windows were utilized. Descriptive statistics, including mean, standard deviation, frequency, and percentages, were used. The test of chi-square (X) 2 and P-value was used to compare qualitative variables and determine whether two variables were associated. To investigate the correlation between the variables being studied, the correlation coefficient test (r) was utilized. To ascertain the predicted values of the variables under investigation, multiple linear regression was employed. Cronbach's Alpha was used to evaluate the study tools' reliability. A significant level value was regarded as $p < 0.05$, and a highly significant level value as $p < 0.01$. When $p \geq 0.05$, no statistically significant difference was considered.

Results

Regarding the socio-demographic characteristics of the studied patients **(Table 1)**, 33.6% of the studied patients' ages ranged from 25 < 35 years old, with a mean of 41.05±10.78. Also, 85.0% of them were male, and 57.1% of them had secondary education. Moreover, 47.9% of them were

single and 76.4% of them were working. As well as 60.1% of them lived in rural regions, 88.6% of them had sufficient income, and 95.0% of them were living with family.

Regarding the clinical data of the patients under study in **(Table 2)**, 34.3% of the studied Patients' ages at disease onset varied from 20 to less than 25 years old, with a mean age of 17.61 ± 4.22. Regarding the frequency of visits to outpatient clinics, 90.0% of these patients had a one-month frequency of visits to outpatient clinics, and 48.6% of them had a frequency of hospitalization from 1 to 3 times. Also, 73.6% of them were taking psychiatric medications regularly. As well as, only 17.1% of them have a history of mental illness in their family. Meanwhile, 91.7% of this family member had schizophrenia, and 82.9% of the ill relatives were fathers or mothers.

Figure (1) illustrates that 66.4% of studied patients had high social support, 7.9% of them had moderate social support, and 25.7% of them had low social support.

Figure (2) demonstrates that 72.1% of studied patients had cognitive stability. Meanwhile, 27.9% of them had cognitive dysfunction. Moreover, the mini-mental state examination score was 24.92 ± 4.66.

Figure (3) clarifies that 61.4% of studied patients had a moderate level of recovery. Meanwhile, 31.4% of them had a high level of recovery. However, the recovery mean score was 106.0 ± 19.9.

Figure (4) demonstrates that the patient's overall recovery assessment score and their perceived social support score had a statistically significant positive correlation.

Figure (5) demonstrates a statistically significant positive correlation existed between the patient's mental state examination and the total recovery assessment score.

Table (3) reveals that a highly statistically significant positive correlation existed between the patient's total recovery and total social support score (r = 0.417) and total mental state score (r = 0.560). Also, only a statistically significant positive correlation (r = 0.049) was found between the patient's total mental state score and social support.

Discussion

Regarding the clinical data of the studied patients, the current study results revealed that slightly more than two-thirds of the studied patients had an age of onset of the disease ranging between 20 and less than 35 years old with a mean score of 17.61 ± 4.22. Also, many of them had one-month frequency of visits to outpatient clinics. Moreover, nearly half of the studied patients had frequency of hospitalization from 1-3 times. Also, nearly three quarters of them were taking psychiatric medication regularly. Moreover, the minority of them had family history of mental illness.

Based on their overall perceived social support level, most patients in the current study had a moderate level of perceived social support. According to the researcher, this outcome might be the result of the patients' adherence to their medication regimens; nearly three-quarters of the patients in the study were in compliance, which can lead to the best results for patients and enhance their perception of other people's social support. Additionally, the majority of them reside with their relatives, which facilitates the support system.

This finding aligned with a study by **(Mekonnen et al. 2019)** in Ethiopia and **(El-Monshed and Amr, 2022, pp. 1-6)** in Egypt,

which found that over 50% of patients had a medium level of perceived social support.

Conversely, this finding contradicted the findings of a study conducted by **(Eweida and Maximos, 2017)** in Egypt, which showed that half of the participants in the study said they lacked social support in their lives. Furthermore, a study by **(Gabal, 2017)** in Egypt, found that over half of the patients in the study had low levels of social support. Accordingly, a study by **(Xie et al., 2018)** in China discovered that social support was lower for patients with mental illnesses than for healthy controls.

Based on their overall level of cognitive dysfunction, the current study found that nearly three-quarters of the patients showed cognitive stability. According to the researcher, there are several possible reasons for this outcome, including the patients' medication compliance—nearly three-quarters of the patients in the study were compliant—which can enhance cognitive abilities and yield the best results for patients.

This is congruent with the findings of **(Yu et al., 2024)** in China, who found that lower cognitive performance at follow-up would be predicted by higher levels of social isolation at baseline.

This result contradicted several studies done by **Okasha et al., 2020)** in Egypt, **(Mascio et al., 2021)** in the United Kingdom, **(Goonathilake et al., 2022)** in Sir Lanka, and **(Khedr et al., 2023)** in Egypt, which showed a high prevalence of cognitive impairments in individuals with schizophrenia. The study environment, sample size, instrument, sociocultural differences, and analytical differences could all be contributing factors to the interpretation of these disparities in results.

Based on the overall level of recovery among the patients under study, many participants in the current study had moderate to high levels of recovery. According to the researcher, the patients' adherence to medications may be the cause of this outcome. Almost three-quarters of the individuals in the study took their medications as prescribed. Additionally, nearly three-quarters of the patients in the study exhibited cognitive stability, which increased their chances of making a full recovery. Additionally, over two-thirds of them had a high degree of social support, which aids in the recovery process.

This outcome was consistent with research by **(El-Monshed and Amr, 2022)** which revealed that the mean score of overall recovery for patients with schizophrenia was high. Additionally, this outcome was consistent with a study by **(Mahmoud, Ali and Hafez, 2021)** in Egypt, which showed that most patients with schizophrenia have a high level of functional recovery. In light of this, a different study by **(Castelein et al., 2021)** in Netherlands showed that patients with schizophrenia recovered more clinically, socially, and personally.

This result contradicted the findings of a study conducted by **(Abd Elghafar Harfush, Abd El-Nabi Moussa and Elnehrawy, 2022)** in Egypt, which found that most patients had poor recovery in terms of their overall score. This conclusion was therefore at odds with research by **(Mohamed et al., 2024)** in Egypt, which found that less than three-quarters of the patients in the study had a modest degree of recovery.

Based on the correlation between the patients' total scores of cognitive dysfunction, recovery, and perceived social support, the current study demonstrated a highly

statistically significant positive correlation between the total scores of perceived social support, mental state, and recovery for the patients under investigation. According to the study, this can be explained by the fact that social recovery is a crucial element of holistic recovery in schizophrenia.

This finding aligned with research conducted by **(El-Monshed and Amr, 2022; Skar-Froding et al., 2021)** in Norway, **(Fan et al., 2021)**, and **(Hamza, Berma and El-Said, 2022),** who reported that the overall score and the subscales of perceived social support showed a statistically significant positive correlation with recovery.

Conclusion

According to findings, more than two-thirds of the patients in the study had a high level of perceived social support. Cognitive stability was present in almost three-quarters of the participants in the study. Additionally, the results found that most of the patients under study recovered to a moderate to high degree. Additionally, a very statistically significant positive correlation was found between the total mental state score, recovery score, and perceived social support score of the patients under study.

Recommendations

- Nurses working in mental health services should use cognitive remediation approaches to enhance cognitive functions.
- Future research should be undertaken to better understand recovery from schizophrenia, factors affecting recovery and strategies to promote recovery.
- Applying psycho-motivational training for patients with schizophrenia to improve their social skills, and emotional regulation skills and reduce negative symptoms.

Authors' contributions

E.I.M. suggested the research concept, drafted the proposal, performed data collection and analysis, and drafted the manuscript. B.E.S., and M.M.E. contributed to the study by revising and assisting in developing the research methodology, data analysis and interpretation, discussion, comparison of results with recent literatures in the study field, writing, editing and summarizing of the manuscript. All parts in the manuscript have been revised and approved by all authors.

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Declaration of conflicting interest

The authors declare that there is no conflict of interest.

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Table (1): Socio-demographic characteristics of patients in the study sample (n=140)

Socio-demographic characteristics	No.	%
Age		
< 25 years	31	22.1
25< 35 years	47	33.6
35 < 45 years	41	29.3
45 < 55 years	17	12.1
55- 65 years	4	2.9
Mean ±SD	41.05±10.78	
Gender		
Male	119	85.0
Female	21	15.0
Educational level		
Illiterate	16	11.4
Basic education	29	20.7
Secondary education	80	57.1
University education	15	10.7
Marital status		
Single	67	47.9
Married	36	25.7
Widow	3	2.1
Divorced	34	24.3
Job		
Not work	33	23.6
Work	107	76.4
Residence		
Rural	86	61.4

Urban	54	38.6
Income level		
Sufficient	**124**	**88.6**
Insufficient	16	11.4
Living with		
Alone	7	5.0
With family	133	95.0

Table (2): Clinical data of patients in the study sample (n=140)

Clinical data	**No.**	**%**
Age of onset of the disease		
15 < 20 years	37	26.4
20 < 25 years	48	34.3
25 < 30 years	30	21.4
30 < 35 years	15	10.7
35 years and more	10	7.1
Mean ±SD	17.61±4.22	
Frequency of visits to outpatient clinics		
Once a month	126	90.0
Twice a month	2	1.4
3 times a month or more	8	5.7
Other	4	2.9
Frequency of hospitalization		
No hospitalization	18	12.9
From 1 to 3 times	68	48.6
From 4 to 6 times	29	20.7
More than 6 times	25	17.9

Do you take psychiatric medications regularly		
Yes	103	73.6
No	37	26.4
Is there anyone in the family suffer from mental illness		
Yes	24	17.1
No	116	82.9
If yes, what is the disease (n=24)		
Schizophrenia	22	91.7
Bipolar disorder	2	8.3
What is your relationship with this patient?		
Father/mother	116	82.9
Brother\ Sister	10	7.1
Uncle\ Aunt	12	8.6
Grandfather\ Grandmother	2	1.4

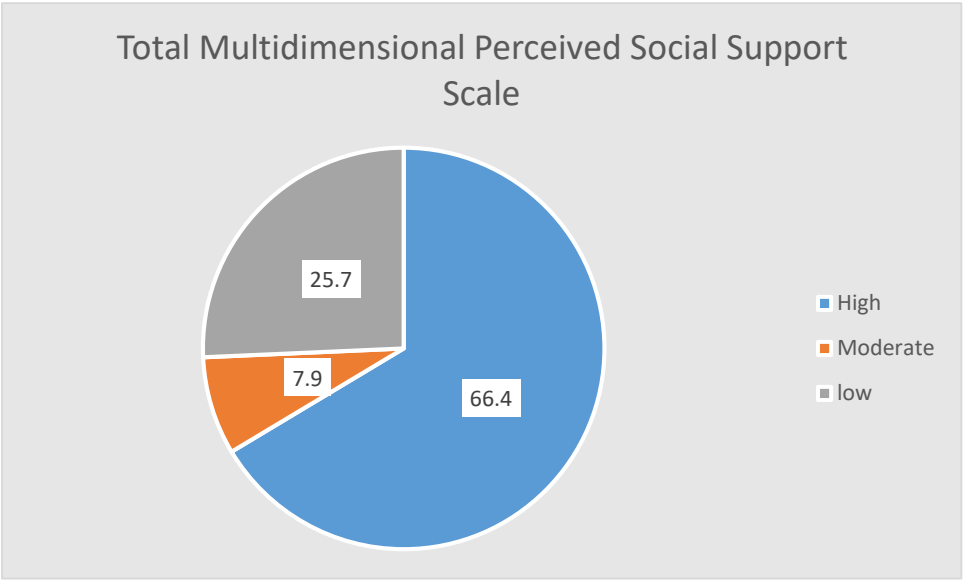

Figure (1): Percent of multidimensional perceived social support level of studied patients (n=140)

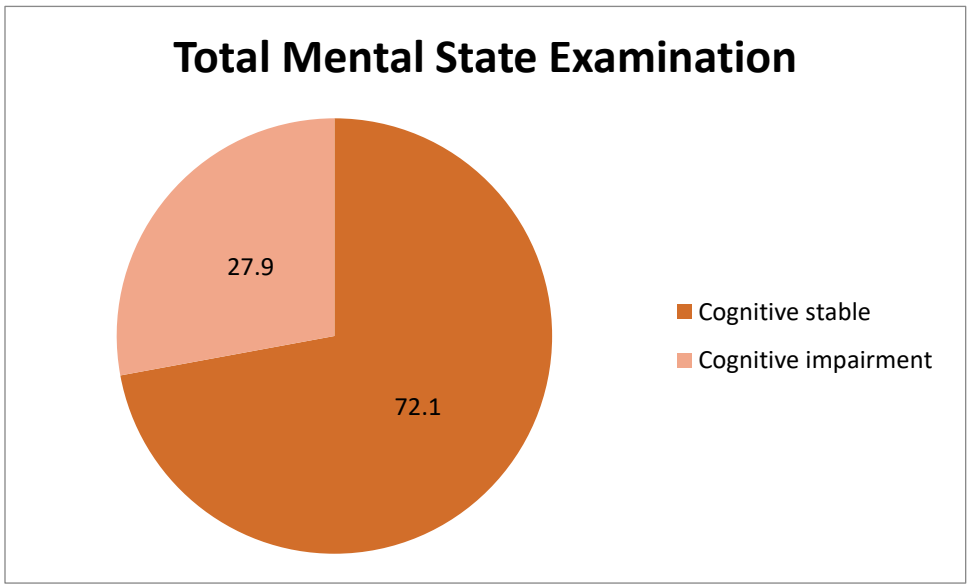

Figure (2): Percentage distribution of total level of mini mental state examination scale among studied patients (n=140)

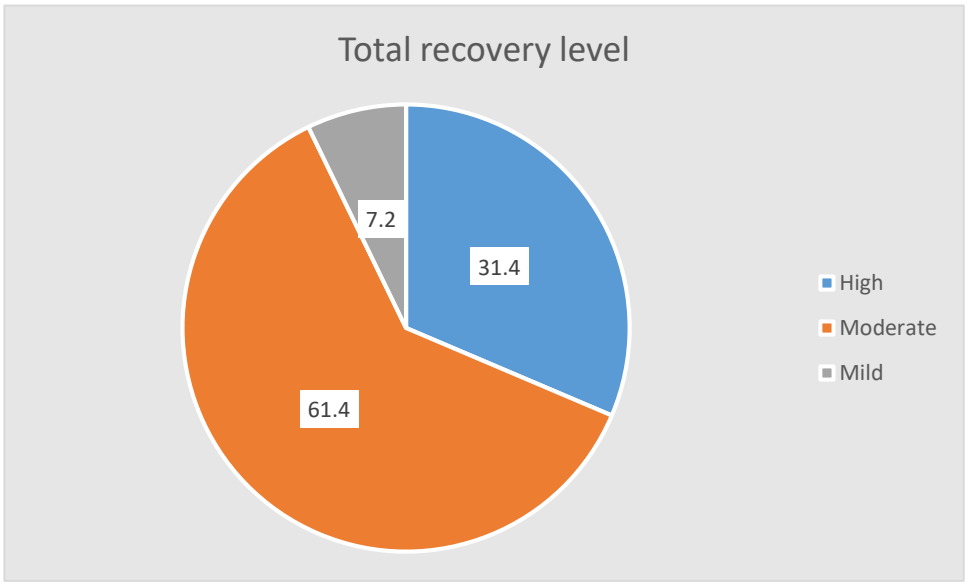

Figure (3): Percentage distribution of total recovery assessment scale (domains and stages)

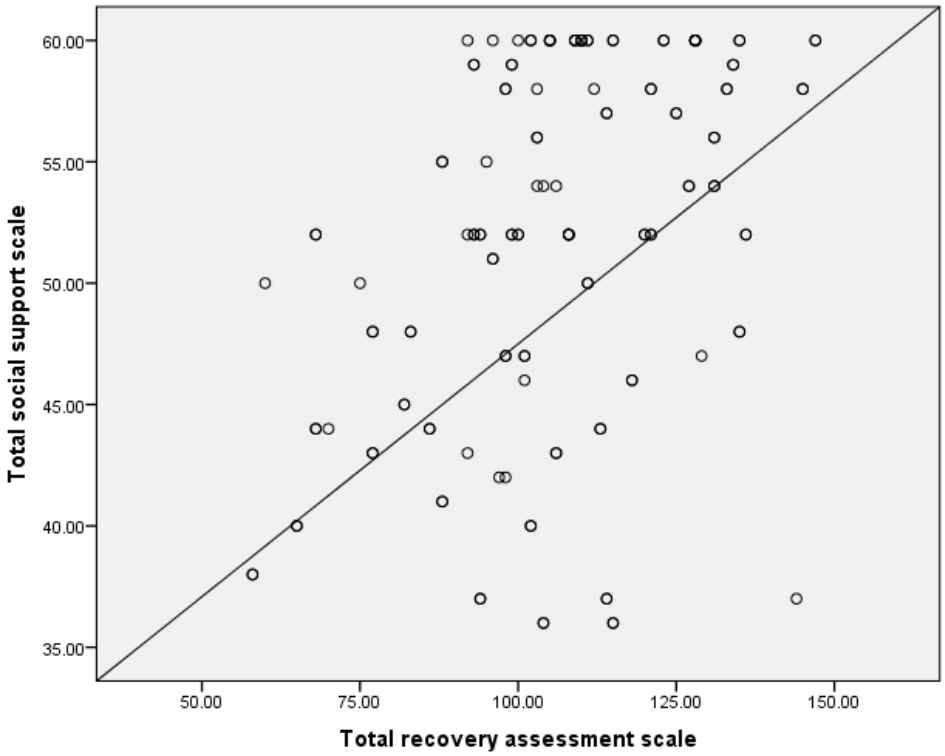

Figure (4): Scattered graph between total social support scale and total recovery scale among the studied patients (n=140).

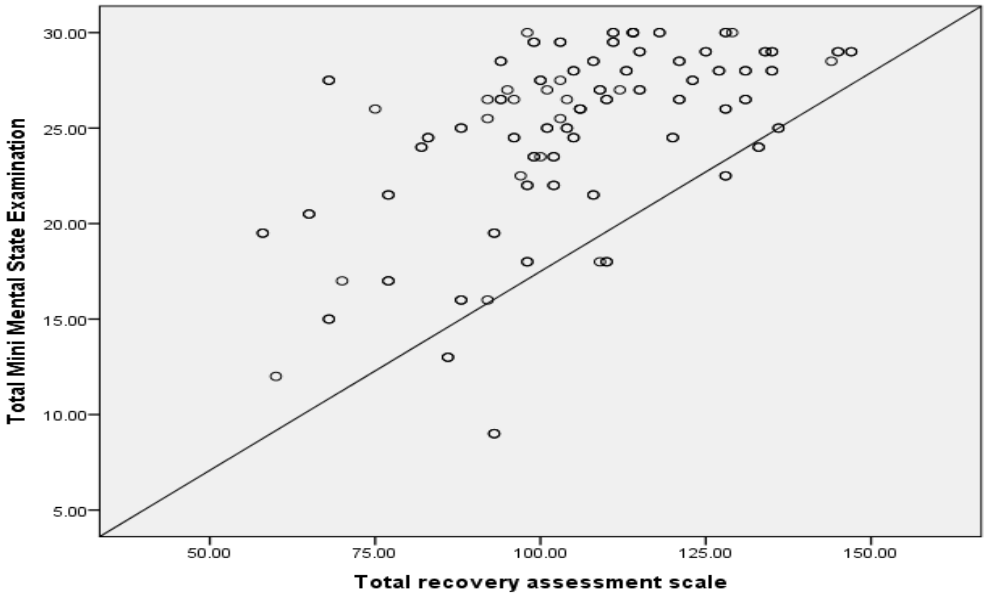

Figure (5): Scattered graph between total recovery scale and total mini mental examination scale among the studied patients.

Table (3): Correlation matrix between total perceived social support scale, total mini mental state, and Total recovery scale (n=140)

Scores	Total social support			Total mini mental state			Total recovery		
Total social support	**R**	**P**	**N**	**R**	**P**	**N**	**R**	**P**	**N**
	1	-	140	0.167	0.049*	140	0.417	0.000**	140
Total mini mental state	0.167	0.049*	140	1	-	140	0.560	0.000**	140
Total recovery	0.417	0.000**	140	0.560	0.000**	140	1	-	140

non-significant p>0.05 **** p< 0.05: significant***

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