Effectiveness of Empowerment Intervention Program on Recovery and Perceived Discrimination among patients with schizophrenia

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Abstract

Background: For individual living with schizophrenia, Empowerment interventions focus on promoting autonomy, self-efficacy, and active participation in decision-making related to their treatment and daily lives. **Aim of the study:** To evaluate effectiveness of empowerment intervention program on recovery and perceived discrimination among patients with schizophrenia. **Subjects and Method:** Setting of the study: The study was conducted at the Psychiatric and Mental Health Hospital in Meet-khalf at Menoufia that affiliated to the ministry of health and population, Egypt. **Subjects:** A purposive sample of 50 patients with schizophrenia was approached to participate in the study. **Tools of the study:** Interviewing questionnaire, recovery assessment scale and Perceived devaluation and discrimination scale. **Results:** According to the study's findings, the recovery level of the study group was significantly higher than that of the control group prior to the intervention. Also, the post-intervention group exhibited a statistically significant decrease in discrimination in comparison to the pre-intervention group. **Conclusion:** Results showed that patients with schizophrenia who participated in empowerment interventions had better recovery rates and reported less discrimination. **Recommendation:** empowerment intervention program should be provided as intervention for patients with mental illness.

***Keywords*:** Patients with schizophrenia, Empowerment intervention, Perceived discrimination, Recovery

Introduction

Schizophrenia is a severe form of psychosis characterized by a wide spectrum of symptoms that negatively impact patients' recovery and increase their sense of helplessness. The recovery approach is a contemporary paradigm that advocates for a process of transformation that enables individuals with mental illness to improve their health and well-being, live independently, and aspire to realize their maximum potential. Rather than focusing solely on resolving symptoms, this approach highlights the ability to manage

and control mental health issues and life challenges (**Shalaby et al., 2023**). Debilitating symptoms of schizophrenia persist over time, necessitating protracted treatment. As one of the leading 15 worldwide causes of disability, it places a heavy financial strain on individuals, their families, and society as a whole. Disruptions in perception, cognition, and behavior, including hallucinations, delusions, disorganized speech, and impaired functioning, are symptoms (**Iswanti et al., 2024).**

Recently, "attunement disorder" and "integration dysregulation syndrome" have been used to describe schizophrenia formally (**Lasalvia et al., 2021**). Among the most mysterious and debilitating brain disorders, it is marked by severe and ongoing psychotic symptoms, fluctuating cognitive dysfunction, and significant psychosocial impairment. Schizophrenia affects around one percent of the world's population and has a devastating effect on people's health and life satisfaction (**WHO, 2023**). In Egypt, schizophrenia is the most common form of psychosis and constitutes the majority of inpatients in both mental hospitals and psychiatric wards in general hospitals, affecting about one million people **(Liu et al., 2020**).

Notably, recent meta-analyses and follow-up research have shown that recovery rates for people with mental disorders range from 13.5% to 37.9%. Additionally, recovery for patients with schizophrenia can lead to a reduction in medical expenses (**Martinelli & Ruggeri, 2020)**. Recovery is defined as the ability of individuals with psychiatric disorders to lead a satisfactory life. Therefore, fostering recovery among individuals with mental disorders, including schizophrenia, is urgently needed (**Lee et al., 2021**).

Beginning with the assignment of negative labels to human differences and the subsequent association of those labels with negative stereotypes, the stigma process culminates in discrimination. Behaviours that support and strengthen these preconceptions, by treating stigmatized people differently are examples of discrimination. Discrimination can manifest at two levels: the interpersonal, as in casual encounters between people, and the structural, as in the form of laws, regulations, and institutional practices. Discrimination against people can be based on stigmatized human differences, which are in turn socially constructed. Some possible markers of these differences are sex/gender, race/ethnicity, age, socioeconomic position (SES), handicap, and certain diseases. (**von dem Knesebeck & Klein, 2024).**

Empowerment is defined as having control over both the societal and organizational frameworks in which a person lives, as well as restoring control over one's own life. Key attributes of empowerment include the ability to make decisions, awareness of one's

potential to create change, improved self-image, assertiveness, gaining knowledge and expressing one's emotions, feeling connected to a group, not experiencing loneliness, recognizing one's rights, ongoing personal growth, self-initiative, and overcoming stigma (**Hsieh et al., 2023**). For patients with mental disorders, empowerment is crucial for achieving recovery. Schizophrenic patients, in particular, benefit from interventions that promote independence in all aspects of community life **(Jaiswal et al., 2020)**. For patients with schizophrenia, especially those in psychiatric inpatient settings, empowerment programs primarily focus on enhancing resilience and hope for recovery. Mental health nurses play a vital role in this process by reinforcing patients' confidence in their ability to make informed decisions about their medical care (**Mostafa et al., 2022**).

Psychiatric nurses help people with schizophrenia take an active role in their own healthcare and improve their quality of life. Important considerations include: At this level of empowerment, the most important factors are individual-centered behaviors and medications that influence the expression of needs, wishes, and desires. For individuals to feel safe enough to open up about their emotions, decisions, and desires, as well as to keep their self-esteem and trust in the therapeutic relationship strong, it is essential to establish a positive rapport. For this to be achieved, it is imperative to demonstrate respect for the individual, refrain from making them feel insufficient, and refrain from rendering judgment (**Ramadhani et al.,2024).**

Significance of the study:

Worldwide, there are around 21 million cases of schizophrenia, or 0.24 cases per 1,000 people (**Metrics , 2021**). Worldwide, there are around 21 million cases of schizophrenia, or 0.24 cases per 1,000 people (**Pothimas et al., 2020**). According to statistics from the Central Java Psychiatric Hospital, 765 people suffering from schizophrenia were receiving treatment in 2021, and 19% of those patients were readmitted within 30 days (**Regional Psychiatric Hospital of Dr. Amino Gondohutomo, 2021**). The family's incapacity to provide adequate care during relapse episodes is one reason why the readmission period is so short. Schizophrenia is a common and chronic psychotic condition affecting approximately 24 million people worldwide and constitutes the majority of patients in psychiatric facilities in Egypt (**Shanko et al., 2023**).

Schizophrenia, a major psychotic disorder, is recognized as a significant contributor to global health burden and disability. The costs associated with long-term treatment are significant, often exacerbated by the revolving door syndrome, where patients frequently return to hospitals. This cycle not only incurs high medical expenses but also impacts patients' potential productivity (**Arango et al., 2022**). Despite these challenges, evidence suggests that a

subset of patients with schizophrenia experiences a favorable prognosis, with symptoms potentially improving over time. These patients can achieve positive clinical and functional outcomes, including success in education, employment, and relationships (**Molstrom et al., 2022**). Therefore, identifying effective strategies to support these individuals in reaching such favorable outcomes is crucial.

Theoretical and operational definitions:

Recovery refers to a condition in which psychosocial treatment and psychiatric rehabilitation are employed to restore social function and maintain remission; recovery is the current goal of treatment for schizophrenia **(Leonhardt et al., 2017**). It will be measured by Recovery Assessment Scale (RAS) (**Giffort et al., (1995).**

Empowerment refers to taking back control of one's life and making a difference in the social and institutional institutions one lives in. There is never a limit to one's ability to make decisions, be assertive, feel like they can change things, learn about and express indignation, feel like they belong, and realize their privileges. The writers go on to say that some essential elements of empowerment include working to remove stigma, encouraging positive self-image, and engaging in personal development (**Hasan & Musleh, 2017**). In the present investigation, it pertains to the process of developing greater self-assurance and resilience, particularly in the context of asserting one's rights and assuming responsibility for one's life.

Perceived discrimination refers to "the ramifications of the subjective belief that one is subjected to discrimination in their daily life" (**Pengpid & Peltzer ,2021).).** In the current study, it refers to the unfair treatment of various groups of individuals, particularly because of a disability. It will be measured by Perceived Devaluation and Discrimination Scale (**Brohan et al., 2010),**

The aim of the study:

To evaluate the effectiveness of the empowerment intervention program on recovery and perceived discrimination among patients with schizophrenia.

Research Hypotheses:

- After the implementation of empowerment intervention program, patients with schizophrenia who participate in it will show better results on recovery measures.
- Participants in the empowerment program will decrease levels of reported prejudice compared to non-participants.

Design:

This study accomplished its goals by employing a quasi-experimental design with two groups: the study group and the control group. Both groups were given pre- and post-tests.

Setting:

The research was conducted at the Psychiatric and Mental Health Hospital in Meet-khalf at Menoufia, which is affiliated with the Ministry of Health and Population in Egypt. It is serving a large

group of patients with psychiatric disorders. It involves of five departments' three departments for male patients, one department for female and one department for addiction. The capacity of each one department is from 15- 25 patients. The psychiatric patient admitted to the ward for at least three weeks for discharge from the hospital. This study conducted during the period of 2 months from the beginning of October 2024 to the beginning of December 2024

Sample size:

A sample size of 50 has been chosen using the following equation: n = (z2×p × q)/D2 at power 80% and CI 95%, in order to examine the same result and detect significant differences.

Subjects:

The study included a purposive sample of 50 patients with schizophrenia who met the following inclusion and exclusion criteria: patient age between 20 and 40 years, male gender, and the ability to read and write. Patients who were mentally disabled or aggressive were excluded. Patients who met the eligibility requirements were randomly assigned to one of two groups: the intervention group (I) and the control group (II). In the intervention group (I), an empowerment intervention will be administered. The control group (ii) will receive routine care.

Tools of Data Collection:

In order to achieve the purpose of the study, the following three tools were utilized.

Tool (1): Interviewing questionnaire: Careful consideration of the relevant literature was given by the study team prior to its design in order to evaluate the socio-demographic characteristics of the patients, including their age, degree of education, marital status, work status, and place of residence. They also took into account their income and family history of mental illness.

Tool (2): Recovery Assessment Scale (RAS): This scale was developed by **Giffort et al., (1995).** Twenty-four items constitute the Recovery Assessment Scale (RAS), which assesses the extent of recovery in patients with mental disorders. Everything was assessed using the same five-point Likert scale, where one meant "strongly disagree" and five meant "strongly agree." To be more precise, the RAS assesses five areas via its subscales: "I am aware of when to ask for help." is one way to communicate a desire to ask for assistance, while "I have my own plan for how to stay or become well" is one way to convey personal confidence and hope, which include nine elements in total. 5. A focus on objectives and achievement (5 things), such as "I have life goals that I aspire to achieve," 4. Reliance on others (4 items), such as "I have individuals whose support I can rely on," and 3. Refrain from letting symptoms dominate, such as "Surviving my mental illness is no longer the primary focus of my life." Featuring a five-point agreement scale, the scale has an alpha coefficient of.970.

Scoring system:

Total score is ranged from 24 to 120. Obviously the higher the score points, the greater the recovery.

-24 to 56 indicate mild recovery.

- 57 to 88 indicate moderate recovery.

- 89 to 120 indicate high recovery

Tool (3): Perceived Devaluation and Discrimination Scale (PDD)

This is a 12-item scale was developed by **(Brohan et al., 2010)**, that has been extensively employed to assess an individual's conviction that others will discriminate against or undervalue an individual with a mental illness. The Liker scale was employed to evaluate all items, with a score of 4 being indicative of firm agreement, 3 of agreement, 2 of disagreement, and 1 of grievous disagreement. High scores suggest a significant public reproach. The tally was in reverse order for items 1, 2, 3, 4, 8, and 10.

The scale possesses exceptional psychometric properties. Internal consistency (Cronbach's alpha =.94) and content validity (88.8) are both higher for this scale.

Total score is ranged from 12 to 48. Obviously the higher the score points, the greater the discrimination.

-12 to 24 indicate low discrimination.

-25 to 36 indicate moderate discrimination.

-37 to 48 indicate high discrimination

Administrative and ethical consideration:

The faculty of nursing, the ethical and research committee all granted the researcher permission to carryout study (approved number is ERCNMA 1000/4/9/51/24). The head of the psychiatric and mental health hospital, meet khalaf, gave his official permission. Researchers contacted all individuals with a schizophrenia diagnosis who met the inclusion criteria for the trial. Once the nature and goal of the research were defined, approval was granted. The researcher made it clear that taking part in the study is completely optional and informed participants that they may stop at any moment if they so desired. The data coding technique ensured the privacy and secrecy of the participants. After the research was over, the control group was given the program.

Validity of the tools:

Following their translation into Arabic, the research team had the Recovery Assessment Scale and the Perceived Devaluation and Discrimination scale reviewed by a panel of five specialists in community health nursing, psychiatric medicine, and mental health nursing to determine whether the scales were comprehensive, relevant, and easy to understand.

Pilot study:

To ensure the tools were practical, easy to understand, and applicable, a pilot study was conducted with five patients, representing 10% of the overall sample . Estimating how long it will take to complete the study, materials will be useful.

Procedure of data collection:

The Dean of the Faculty of Nursing at Menoufia University formally requested

permission to conduct the research by sending a letter to the management of the Psychiatric and Mental Health Hospital in Meet Khalaf, Egypt, outlining the study's goals and the procedures used to gather data.

- After explanation of the purpose and nature of the study to patients, an individualized interview was conducted with the participants at psychiatric department (male department because there was only seven females patients in females section) to collect the necessary data using the instruments of data collection.
- Data for the investigation were collected over a two-month period, from the beginning of October 2024 to the beginning of December 2024.Pilot study was conducted with five patients and excluded from the main study sample because the patients in the pilot study made some modification for the tools. Assessment, planning, implementation, and evaluation comprised the four phases of data collection utilized in the present study.

Assessment Step: This phase involved the collection of baseline assessment data for the experimental and control groups using the study instruments previously mentioned. Assessment phases were implemented for both groups. 60 minutes were required to finish the instruments. The researcher will ask the nurse of psychiatric department to collect patients (50 patients) and prepare a waiting room that equipped with chairs, good lights and data show for the implementation of the program. Through a structured interview technique, the patients primarily were asked to complete the pretest Recovery Assessment Scale (RAS) and Perceived Devaluation and Discrimination Scale (PDD). Patients were given all the necessary information regarding the study's purpose, the meeting's date and location, and answers to any questions they may have had before giving their written informed permission. Two groups of patients, one receiving an intervention and the other serving as a control, were randomly allocated to the study by flipping a coin .The intervention group (I) consists of 25 patients, and the control group (II) consists of 25 patients. The intervention group attended 8 empowerment intervention sessions with one session per week for 60 minutes. The control group (II) didn't receive any intervention.

Planning Step:

After conducting a thorough review of electronic dissertations, books, articles, and journals, the researchers were developed a user-friendly and inspiring Arabic guide booklet. Each of the two groups had twelve or thirteen patients as volunteers. Eight weekly 45-60 minute intervention sessions were attended by each subgroup. The sessions were conducted by one researcher for each group, with two groups being accommodated per day. The sessions was conducted in the waiting room at the psychiatric department meet khalaf Hospital. The sessions were from 9 AM to 9:45 or 10 AM and from10:15AM

to11AM or11:15AM. The program was implemented over a period of 8 weeks, completing the sessions within two months. Discussions, lecture, demonstration, re-demonstration, and brainstorming, role-playing, modeling and giving examples were used as teaching methods. Booklet, data show, and pictures were used as media.

Implementation Step:

Implementation of the empowerment intervention for study groups were done at the waiting room in small groups each group about 12 or 13patients, each group attended (8) intervention sessions with one session a week in this phase, the control group received the standard routine care, whereas the intervention group participated in program sessions regarding schizophrenia.

First session: It was to underscore the importance of educating patients on the rules and regulations of treatment sessions, including the security of research data and the importance of adhering to meeting dates and times. Following this, they were administered a pretest using research instruments.

Second session: (Understanding recovery from mental illness), the major areas of discussion included the program's goals and principles, stigma, and the characteristics and progression of schizophrenia as a disease.

Sharing issue: How to free oneself from stigma as a schizophrenic patient

- Pursuing one's own goals in this program

Third session: (Doing and undoing: Efforts for recovery). Both the strength and the weakness of the ability to pursue recuperation. The purpose of this session was to assist patients in identifying their own strengths in order to achieve recovery. Looking for a supportive system that is beneficial. Design a daily schedule that capitalizes on the unique assets of each individual. I am in need of assistance from my family members. Learning how to perform household chores. Developing the ability to communicate one's experiences with family members.

Fourth session :(Taking the best for recovery). This session was designed to improve communication abilities. Practice assertive expressions and engage in verbal and nonverbal communication in scenarios. The goals of this session were to enhance long-term outcomes through the management of self-care and drug treatment. On an individual basis, maintaining general sanitation. Performing daily responsibilities. Being aware of the significance of adhering to one's medication regimen. List of the therapeutic effects and adverse effects of the medication. Learn strategies for adhering to medication.

Fifth session: (**Improve drug adherence, prevent worsening of the illness and apply crisis management)** . This session was designed to facilitate the exchange of personal experiences regarding the diverse adverse effects of a variety of antipsychotic medications. Gaining an understanding of the hazards and benefits of each medication. Seeking assistance from family members and

healthcare providers. Having knowledge of adverse effects that are life-threatening or severe. Rectifying problematic circumstances. Listing general precautionary measures.

Sixth session: (Satisfaction with sexual relationships)

This session was designed to assist patients in comprehending the sexual dysfunction that is associated with anti-psychotic medication. Conveying the challenges associated with sexual dysfunction. Discussing effective management strategies for sexual dysfunction

Seventh session (Plan ahead for employment):

- This session was designed to facilitate the self-assessment of one's aptitudes and abilities in order to facilitate career planning. The acquisition of coping mechanisms for the workplace. Obtaining employment: An overview. Assessment of the degree to which one has succeeded in accomplishing their objectives. Participating in the program and sharing personal experiences. Ceremony of conclusion

Eighth session: After sessions, the same instruments of data collection were used to re-assess and evaluate recovery assessment and perceived discrimination among schizophrenia patients in both the study and control groups.

Evaluation phase: The program concludes with this phase. Instant feedback from patients' designated duties was utilized to evaluate each session. The study instruments were employed to acquire post-program assessment data for the experimental and control groups during the final session, and the program was subsequently terminated.

Statistical Analysis:

For the purpose of tabulating, organizing, and statistically analyzing the collected data, an IBM compatible computer running the Statistical Package for the Social Sciences (SPSS) version 25 for Windows was used. In order to make sense of the data, which included frequency, percentages, standard deviation, and mean, we used descriptive statistics. To check whether the distribution was normal, the Shapiro-Wilk test was used. For qualitative variables, we used a chi-square test, and for parametric data, we employed an independent samples T test. The Wilcoxen test was used to compare two time periods that were part of the same group. We utilized the Mann-Whitney U test to compare the two sets of data. To compare several groups using non-parametric data, the Kruskal-Walli's test was used. We calculated the strength of the relationship between the study variables by running them through the Spearman correlation test. Using Cronbach's Alpha, the reliability of the study's instruments was assessed. It was considered significant when the level value of p was less than 0.05, and extremely significant when the level value of p was less than 0.01. For p-values greater than 0.05, statistical significance was disregarded.

Results

Table (1):shows that more than half of the two groups (56.0%, 60.0%) are aged between 30 and <40 years for the study group and control group respectively, (32.0%, 36.0%) of them have secondary education. Regarding marital status (56.0%, 76.0%) of them are married. Also (76.0%, 92.0%) of both groups are housewives for the study group and control group respectively. Regarding income (84.0%, 60.0%) of both groups respectively do not have sufficient income. Almost half of both groups (48.0%, 48.0%) have extended family. Also (84.0%, 68.0%) of both groups respectively have family history of the disease

Table (2): It indicates that there was a statistically significant difference at post-intervention between the study and control groups in the total personal recovery score ($p < 0.000$), as the mean total personal recovery score increased from 51.9 ± 11.9 before the interventions to 87.9 ± 11.8 (post-intervention) and compared this mean with the mean of the control group (51.6 ± 15.0, 56.9 ± 14.2).

Figure (1): Shows that there was statistically significant improvement in recovery level among the study group post intervention than pre intervention compared to control group; the high level of recovery among the study group increased to (72 %) after intervention .

Table (3); Reveals that there was a statistically significant difference between both groups (study group and control group) regarding total perceived discrimination score post intervention than pre intervention; the study group showed decreased in total perceived discrimination score from 40.3±6.55 to 24.4±6.51 post-intervention , while the control group had only decrease from 40.4±4.86 to 38.0±8.11 of the same level.

Figure (2): Illustrates that there was a statistically significant improvement in the level of discrimination between the study group after the intervention compared to the pre-intervention group, and the high level of discrimination between the study group decreased from (72%) to (4%) after the intervention.

Table (4): It shows that there was a highly significant negative correlation between the total perceived discrimination score and the total recovery scores before and after the intervention at P = 0.000 among the study group. This means that when patients have a high recovery level, their discrimination level will decrease.

Table (5): It shows that there was a statistically significant association between patients' age, monthly income and overall recovery level before and after the intervention among the study group. There was a statistically significant association between age, educational level, and overall discrimination score before and after the intervention. There was a highly significant association between monthly income, family history of the disease, and overall discrimination score before the intervention, and a statistically significant

association between them after the intervention. Additionally, there was a highly significant association between educational level and family history of the disease and overall recovery level.

Table (6): Elucidates that the control group had a statistically significant correlation between age, monthly income, educational level, and overall recovery score before and after intervention. In addition, the control group's total discrimination score was significantly higher after the intervention when there was a statistically significant correlation between age and education level, monthly income, family history of disease, and total discrimination score before the intervention. In addition, the control group's overall discrimination score after the intervention was significantly related to their educational level.

Table (1): Demographic data and family history of the study and control groups.

Demographic data	Study group (n=25)		Control group (n=25)		X^2	P-Value
	No.	%	No.	%		
Age (Years)					2.084	0.353
20-<30	7	28.0	9	36.0		
30-<40	14	56.0	15	60.0		
≥40	4	16.0	1	4.0		
Mean ± SD	33.04±5.57		31.20±4.17		t=1.322	0.193
Education level					2.114	0.549
Illiterate	5	20.0	2	8.0		
Basic education	7	28.0	6	24.0		
Secondary education	8	32.0	9	36.0		
University education	5	20.0	8	32.0		
Marital status					2.450	0.294
Married	14	56.0	19	76.0		
Widow	3	12.0	1	4.0		
Divorced	8	32.0	5	20.0		
Place of residence					1.282	0.258
Rural	15	60.0	11	44.0		
Urban	10	40.0	14	56.0		
Occupation					2.381	0.123
Work	6	24.0	2	8.0		
Housewife	19	76.0	23	92.0		
Income					3.571	0.059
Enough	4	16.0	10	40.0		
Not enough	21	84.0	15	60.0		
Type of family					0.000	1.000
Nuclear	13	52.0	13	52.0		
Extended	12	48.0	12	48.0		
Family history from illness					1.754	0.185
Yes	21	84.0	17	68.0		
No	4	16.0	8	32.0		

Notes: Independent t-test. No Statistically significant at p >0.05 **X^2:** Chi-square test.
SD: Standard deviation.

Table (2): Level of recovery among studied subjects pre and post implementation of the empowerment.

Personal recovery domains	Study group (n=25)		Control group (n=25)		Test of significance			
	Pre	Post	Pre	Post				
	Mean ± SD Mean Rank	Mean ± SD Mean Rank	Mean ± SD Mean Rank	Mean ± SD Mean Rank	(p_1)	(p_2)	(p_3)	(p_4)
Personal confidence and hope	19.6±5.39 26.16	32.9±4.48 35.72	19.1±6.76 24.84	21.2±5.79 15.28	**Z^1=3.770 p=0.000****	**Z^1=1.174 p=0.241**	**Z^2=0.322 p=0.747**	**Z^2=4.975 p=0.000****
Willingness to ask for help	6.48±1.98 25.68	11.1±1.34 35.68	6.56±2.16 25.32	7.04±2.15 15.32	**Z^1=3.889 p=0.000****	**Z^1=0.689 p=0.491**	**Z^2=0.092 p=0.926**	**Z^2=5.057 p=0.000****
Goal and success orientation	10.9±2.83 25.62	18.5±3.11 36.12	11.0±3.45 25.38	12.1±3.27 14.88	**Z^1=3.786 p=0.000****	**Z^1=0.879 p=0.379**	**Z^2=0.059 p=0.953**	**Z^2=5.215 p=0.000****
Reliance on others	8.56±2.16 25.52	14.4±2.51 35.30	8.44±2.55 25.48	9.60±2.58 15.70	**Z^1=3.819 p=0.000****	**Z^1=1.138 p=0.255**	**Z^2=0.010 p=0.992**	**Z^2=4.798 p=0.000****
Not dominated by symptoms	6.32±1.9 24.88	10.9±1.56 35.52	6.44±2.0 26.12	7.00±2.16 15.48	**Z^1=3.937 p=0.000****	**Z^1=0.735 p=0.462**	**Z^2=0.326 p=0.745**	**Z^2=4.979 p=0.000****
Total personal recovery score	**51.9±11.9 25.68**	**87.9±11.8 35.88**	**51.6±15.0 25.32**	**56.9±14.2 15.12**	**Z^1=3.728 p=0.000****	**Z^1=1.273 p=0.203**	**Z^2=0.088 p=0.930**	**Z^2=5.049 p=0.000****

SD: Standard deviation **P:** p-value. **Z^1:** Wilcoxen test. **Z^2:** Mann-Whitney Test**.**
No significant at p >0.05. ******Highly significant at p ‹ 0.01.

P_1: p value for comparing between the (**Study group**) in pre and post intervention.

P_2: p value for comparing between the (**Control group**) in pre and post intervention.

p_3: p value for comparing between the **(Study and Control group)** in pre intervention.

p_4: p value for comparing between the **(Study and Control group)** in post intervention.

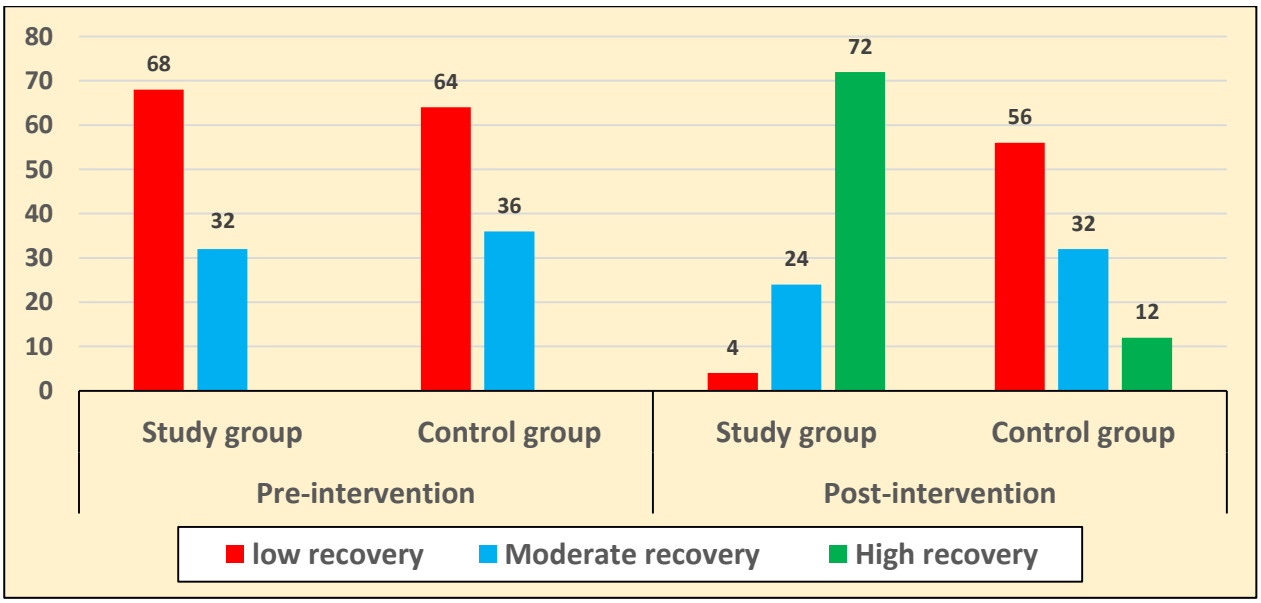

Figure (1): Percentage distribution of the study and control groups regarding to recovery level at pre and post intervention (N=25).

Table (3): Perceived discrimination score among studied subjects (study and control group) on pre and post intervention.

Personal recovery domains	Study group (n=25)		Control group (n=25)		Test of significance			
	Pre	Post	Pre	Post	(p_1)	(p_2)	(p_3)	(p_4)
	Mean ± SD Mean Rank	Mean ± SD Mean Rank	Mean ± SD Mean Rank	Mean ± SD Mean Rank				
Total perceived discrimination score	40.3±6.55 27.74	24.4±6.51 15.80	40.4±4.86 23.26	38.0±8.11 35.20	**Z^1=4321 p=0.000****	**Z^1=1.182 p=0.237**	**Z^2=1.093 p=0.275**	**Z^2=4.766 p=0.000****

SD: Standard deviation **P:** p-value. **Z^1:** Wilcoxen test. **Z^2:** Mann-Whitney Test.
No significant at p >0.05. **Highly significant at p ‹ 0.01.
P_1: p value for comparing between the (**Study group**) in pre and post intervention.
P_2: p value for comparing between the (**Control group**) in pre and post intervention.
p_3: p value for comparing between the **(Study and Control group)** in pre intervention.
p_4: p value for comparing between the **(Study and Control group)** in post intervention.

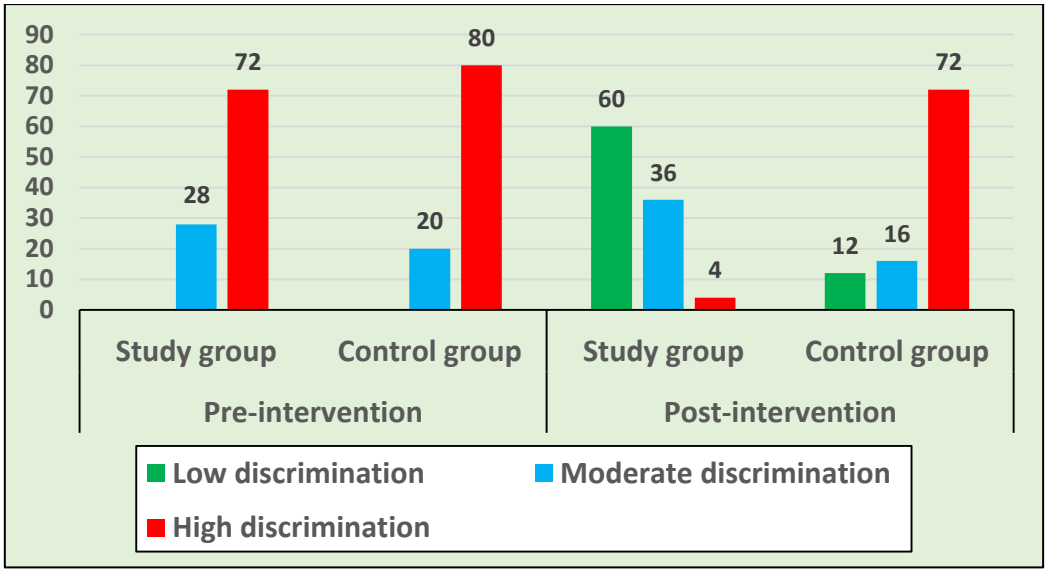

Figure (2): Percentage distribution of the study and control groups regarding to perceived discrimination level at pre and post intervention (n=25).

Table (4): Correlation between total recovery score and total perceived discrimination score pre and post intervention among studied subjects (study and control group).

Group	Variables		Total recovery score	
			Pre intervention	Post intervention
Study group	**Total perceived discrimination score**	**r** **p**	-0.621- 0.000**	-0.652- 0.000**
Control group	**Total perceived discrimination score**	**r** **p**	-0.578- 0.002**	-0.765- 0.000**

(-): Negative correlation.

r= Spearman correlation test**.**

Interpretation of r: **Intermediate** (0.25-0.74)

Strong (0.75-0.99).

******highly significant at p ‹ 0.01

Table (5): Relation between demographic characteristic and total recovery score and total perceived discrimination score at pre- and post-intervention among the study group (N=25).

Demographic characteristics		Total recovery score		Total perceived discrimination score	
		Pre Mean rank	Post Mean rank	Pre Mean rank	Post Mean rank
Age (years)	20 -< 30	18.79	19.29	7.07	7.14
	30-<40	10.36	10.50	15.43	15.18
	≥ 40	12.13	10.75	14.88	15.63
Kruskal-Wallis Test		**K=6.212 p=0.045***	**K=7.254 p=0.027***	**K=6.499 p=0.039***	**K=6.310 p=0.043***
Education level	Illiterate	6.60	10.00	18.60	15.40
	Basic education	9.64	10.57	14.86	16.00
	Secondary education	14.81	12.25	13.44	14.19
	University education	21.20	20.60	4.10	4.50
Kruskal-Wallis Test		**K=11.97 p=0.007****	**K=7.165 p=0.047***	**K=10.97 p=0.012***	**K=8.768 p=0.033***
Marital status	Married	12.54	14.96	11.43	10.61
	Widow	12.33	9.50	18.17	14.17
	Divorced	14.06	10.88	13.81	16.75
Kruskal-Wallis Test		**K=0.248 p=0.883**	**K=2.395 p=0.302**	**K=2.275 p=0.321**	**K=3.715 p=0.156**
Residence	Rural	13.57	12.37	12.47	12.93
	Urban	12.15	13.95	13.80	13.10
Mann-Whitney Test		**Z=0.472 p=0.643**	**Z=0.533 p=0.605**	**Z=0.056 p=0.978**	**Z=0.448 p=0.683**
Occupation	Working	12.00	15.58	14.25	11.25
	Housewife	13.32	12.18	12.61	13.55
Mann-Whitney Test		**Z=0.383 p=0.702**	**Z=0.997 p=0.319**	**Z=0.676 p=0.499**	**Z=0.482 p=0.630**
Monthly Income	Enough	21.63	21.13	3.38	4.63
	Not Enough	11.36	11.45	14.83	14.60
Mann-Whitney Test		**Z=22.5622 p=0.010***	**Z=2.436 p=0.011***	**Z=2.892 p=0.004****	**Z=2.511 p=0.012***
Type of family	Nuclear	11.92	12.81	13.50	12.85
	Extended	14.17	13.21	12.46	13.17
Mann-Whitney Test		**Z=0.763 p=0.445**	**Z=0.137 p=0.891**	**Z=0.358 p=0.720**	**Z=0.110 p=0.912**
Family history from illness	Yes	11.36	11.45	14.83	14.60
	No	21.63	21.13	3.38	4.63
Mann-Whitney Test		**Z=2.562 p=0.006****	**Z=2.436 p=0.011***	**Z=2.892 p=0.001****	**Z=2.511 p=0.012***

Notes:. **P:** p-value. * Significant at p ‹ 0.05 No significant at p >0.05. **Highly significant at p ‹ 0.01.

Table (6): Relation between demographic characteristic and total recovery score and total perceived discrimination score at pre- and post-intervention among the control group (n=25).

Demographic characteristics		Total recovery score		Total perceived discrimination score	
		Pre	Post	Pre	Post
Age (years)	20 -< 30	17.39	17.11	7.67	8.67
	30-<40	11.13	10.97	15.83	14.93
	≥ 40	1.50	6.50	18.50	23.00
Kruskal-Wallis Test		**K=6.643 p=0.036***	**K=6.449 p=0.045***	**K=7.646 p=0.022***	**K=6.045 p=0.049***
Education level	Illiterate	4.00	7.75	21.00	23.75
	Basic education	12.83	9.75	16.75	18.17
	Secondary education	10.44	11.33	14.67	12.00
	University education	18.25	18.63	6.31	7.56
Kruskal-Wallis Test		**K=8.794 p=0.042***	**K=7.393 p=0.048***	**K=11.19 p=0.011***	**K=11.84 p=0.008****
Marital status	Married	14.42	13.21	13.18	13.84
	Widow	23.00	25.00	3.00	1.00
	Divorced	5.60	9.80	14.30	12.20
Kruskal-Wallis Test		**K=7.650 p=0.022***	**K=3.654 p=0.161**	**K=2.051 p=0.359**	**K=2.988 p=0.224**
Residence	Rural	13.09	11.91	12.27	12.23
	Urban	12.93	13.86	13.57	13.61
Mann-Whitney Test		**Z=0.055 p=0.956**	**Z=0.660 p=0.509**	**Z=0.442 p=0.659**	**Z=0.467 p=0.640**
Occupation	Working	9.00	17.00	21.00	18.25
	Housewife	13.35	12.65	12.30	12.54
Mann-Whitney Test		**Z=0.804 p=0.422**	**Z=0.805 p=0.421**	**Z=1.617 p=0.106**	**Z=1.056 p=0.291**
Monthly Income	Enough	16.65	17.15	8.60	10.05
	Not Enough	10.57	10.23	15.93	14.97
Mann-Whitney Test		**Z=2.030 p=0.042***	**Z=2.313 p=0.021***	**Z=2.463 p=0.014***	**Z=1.642 p=0.101**
Type of family	Nuclear	13.35	12.65	14.00	14.35
	Extended	12.63	13.38	11.92	11.54
Mann-Whitney Test		**Z=0.245 p=0.806**	**Z=0.246 p=0.806**	**Z=0.714 p=0.475**	**Z=0.955 p=0.339**
Family history from illness	Yes	11.12	11.85	15.12	14.38
	No	17.00	15.44	8.50	10.06
Mann-Whitney Test		**Z=1.869 p=0.062**	**Z=1.141 p=0.254**	**Z=2.116 p=0.034***	**Z=1.374 p=0.169**

Notes: No significant at p >0.05. **Highly significant at p ‹ 0.01 * Significant at p ‹ 0.05. **P:** p-value.

Discussion

Individuals with schizophrenia often face significant perceived discrimination, stemming from societal stigma and misconceptions about the illness. This perceived discrimination can hinder recovery by exacerbating feelings of isolation and self-stigmatization. Empowerment-based interventions that focus on reducing stigma, fostering social support, and encouraging active community engagement have shown promise in mitigating these negative effects, thereby promoting a more holistic and sustainable recovery process. By addressing both the clinical and social dimensions of schizophrenia, such approaches offer a comprehensive path to improved mental health outcomes and overall well-being.

Aiming to determine how well the Empowerment intervention program helped schizophrenia patients recover and cope with prejudice, this study set out to answer such questions. Positive effects on participants' perceptions of discrimination and recovery were confirmed by the findings of the Empowerment intervention program. As evidenced by the investigation's findings, the mean score of recovery among the subjects under investigation experienced a significant increase following the empowerment intervention program. This could be due to a variety of factors, one of which is that the Empowerment interventions in the context of schizophrenia recovery are intended to assist patients in regains control of their lives, enhancing their self-esteem, and become more involved in their own recovery process. These interventions often involve promoting autonomy, increasing decision-making capacity, and enhancing social and psychological support. Another explanation is that the empowerment intervention increased social engagement helps reduce isolation and can provide patients with a supportive network, which is crucial for mental well-being.

Additionally, one of the most critical attributes of empowerment interventions as a recovery agent for individuals with schizophrenia is that they frequently involve the instruction of coping strategies, self-management techniques, and problem-solving skills that assist patients in overcoming the obstacles of living with schizophrenia. These skills can help individuals manage stress, deal with symptoms, and recover more effectively. Feeling empowered can restore hope for recovery, which is often a key element in mental health recovery. The more control individuals feel over their lives and their treatment, the more likely they are to stay motivated in the face of adversity. Empowerment can help patients shift from a passive

mindset of being "treated" to an active one of "managing" or "recovering."

The current study finding is consistent with **Mojtahedi et al., (2024)** found that patients who took part in a structured empowerment program had more success in managing their symptoms, were more invested in their treatment, and had higher quality of life overall. These results support the premise that recovery is more than just a lack of symptoms; it also entails reclaiming control over one's life, and that patient empowerment in treatment may improve recovery outcomes. These findings also agreed with those of a randomized controlled experiment conducted by **Wykes et al., (2023**) demonstrated that individuals with schizophrenia who participated in an empowerment-based program showed significant improvements in both perceived recovery and quality of life, compared to those receiving standard care. This study highlighted the importance of active involvement in one's own recovery process as a crucial element in achieving better mental health outcomes.

When comparing the study groups before and after the intervention, the results showed a statistically significant decrease in prejudice. The research group's elevated level of discrimination decreased following the intervention. This is may be due to the empowerment programs that enhance resilience, encourage self-advocacy, and provide social support have proven effective in aiding individuals with schizophrenia to better manage external stigma. A significant achievement of these interventions is the reduction of internalized stigma, which refers to the self-stigmatization that arises when individuals adopt negative societal attitudes as their own. Additionally, empowerment intervention frequently includes educational components for both patients and their communities, which are crucial in shifting public perceptions of mental illness. This educational approach can result in a significant decrease in discrimination and stigma, ultimately promoting greater social integration and acceptance of individuals with schizophrenia.

This finding was in the same line with A study conducted by **Johnson et al. (2022)** demonstrated that empowerment programs significantly reduced both internalized and perceived external stigma in participants with schizophrenia. The program aimed to improve social skills, offer psycho-education about mental illness, and promote active engagement in community life. These elements enabled participants to confront negative stereotypes and establish social networks, thereby diminishing feelings of

discrimination. Also, a recent study conducted by **Gulliver et al., (2021)** emphasized that participants in empowerment-based programs experienced reduced levels of perceived stigma and increased social support. Engaging with peers who have similar experiences helps to alleviate the isolation often linked with schizophrenia, fostering greater social inclusion and enhancing mental health outcomes.

Similarly, a longitudinal study by **Zhang et al., (2023**) explored the impact of an empowerment program incorporated into routine psychiatric care. Findings revealed that patients who participated in the empowerment intervention experienced notable enhancements in recovery-related outcomes, such as improved symptom management and increased social participation, along with reduced levels of perceived discrimination, compared to those receiving only traditional care. These results suggest that integrating empowerment strategies with conventional psychiatric care might offer a more comprehensive approach to treating schizophrenia.

The current study found that a statistically significant association between patients' age, monthly income and overall recovery level before and after the intervention among the study group, this means when age increases the total recovery increase. These findings are similar to **Villasenor et al., (2023**) highlighted that although older patients may experience fewer positive symptoms, they often contend with cognitive impairments and physical health issues that impede their recovery. Thus, while advanced age may confer certain recovery benefits, it also introduces unique challenges that must be addressed in clinical settings. Also, the study done by **Jung et al., (2023)** demonstrated that older adults are more likely to have strong social support networks and coping strategies, which may help them recover more quickly. As symptoms gradually lessen over time, older people may be able to adjust to the illness and regain social roles that were disrupted earlier in life.

Age as a factor in total discrimination means that both younger and older individuals can experience compounded challenges depending on their other identity characteristics. The present investigation showed that there was a statistically significant correlation between age and the total discrimination score both before and after the intervention, and the level of discrimination increased as the individual aged. This result may be due to older individuals with schizophrenia often experience age-related health issues, which can exacerbate their vulnerability to discrimination in medical

environments. For instance, they may encounter healthcare professionals who have misconceptions about their mental health, leading to suboptimal care. This result is congruent with **Gustavsson et al., (2023)** found that older patients with schizophrenia experienced more significant discrimination in healthcare contexts. These patients may also feel marginalized in treatment settings due to their age, with healthcare providers potentially focusing more on age-related physical issues than on addressing their psychiatric needs and also, **Rosenberg et al., (2024)** found that older individuals with schizophrenia often face a double stigma: one related to their mental illness and another related to their age. This "double stigma" can affect their sense of self-worth and contribute to feelings of exclusion, particularly in healthcare and social settings.

Moreover, the result of current study indicated that, that there was a statistically significant correlation between age and the total discrimination score both before and after the intervention This finding was contradicted by **Lee et al., (2024)** fand ound that younger patients with schizophrenia may be more likely to internalize societal stigma due to a lack of coping strategies, resulting in heightened perceived discrimination. These experiences can lead to a cycle of avoidance, reduced engagement in social activities, and reluctance to seek employment or educational opportunities, further reinforcing their sense of marginalization.

The current study found a negative association between total perceived discrimination score and total recovery that was highly statistically significant. It suggests that the overall recuperation increases as the perceived discrimination decreases. This outcome was in accordance with **Schnittger et al., (2020)** showed that patients who perceived discrimination from healthcare providers had less trust in the mental health system, which led to decreased adherence to treatment and worsened recovery trajectories. Discrimination within the healthcare system often leads to poorer therapeutic outcomes, exacerbating feelings of alienation and hopelessness. Also, **Schmidt et al., (2019)** found that patients who felt discriminated against in mental health settings were more likely to disengage from treatment and report worse recovery experiences. They found that discrimination not only increases psychological distress but also limits access to healthcare, which is crucial for recovery.

Conclusion

The Empowerment intervention program was determined to be beneficial in the enhancement of recovery and the reduction of perceived discrimination among

schizophrenic patients, as indicated by the results.

Recommendations

-The effect of utilize Empowerment program as intervention for patients with schizophrenia should be included in student's nurses' curriculum.

-In services training program for nurses about the importance of Empowerment intervention program and how to use it to reduce perceived discrimination and improve recovery.

-Establishing of workshop for nurses about utilize empowerment program as effective intervention for patients.

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