

## Disability levels among outpatients with schizophrenia: effect of medication adherence

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### Abstract

**Background:** In order to sustain adherence to mental medication regimens, clients must begin therapy and continue taking their medications at the proper time, with the correct dosage, for longer periods of time. However, increasing adherence in individuals with schizophrenia may have a positive impact on both their overall state of life and society as a whole. **Aim:** was to investigate the severity of disability in outpatients with schizophrenia and to see its relationship with medication adherence at outpatient clinic in Beni Suef Psychiatric Hospital. **Subjects and Methods:** descriptive correlational design was used with a purposive sample of 50 Patients with Schizophrenia who were attended at outpatient clinic including follow up treatment patients at Beni Suef psychiatric Hospital, Beni Suef city, Egypt. The Brief Psychiatric Rating Scale, The Medication Adherence Rating Scale and The World Health Organization Disability Assessment Schedule version 2.0 were used for data collection. **Result:** 32% of patients were adherent, while 68% were non-adherent. 52% of patients suffered from a severe psychiatric disorder, while 40% suffered from a moderate disorder. **Conclusion:** Schizophrenia can lead to disability in various areas of life, including social functioning, occupational functioning, independent living skills, cognitive functioning, and self-care. Nearly half of schizophrenic patients in the study have high disability level and have suffered from severe psychiatric symptoms. **Recommendations:** It recommends that Practitioners in health care find real-life techniques to increase medication adherence in order to improve the therapeutic results, reducing or minimizing impairment.

**Keywords:** *Disability level, Medication adherence & Schizophrenia.*

### Introduction

According to (Shanko et al., 2023), schizophrenia is a serious and pervasive mental illness that impairs a person's capacity to think effectively, behave clearly, express their emotions, and interact with others. Schizophrenia can manifest as positive or negative as well as declined cognitive abilities. In addition, social functioning problems are a prevalent symptom of schizophrenia and are frequently named as one of the illness' key traits (Merikangas et al., 2022).

(Shehu et al, 2023) has adopted on the term of "Compliance to continuous treatments", which is "the extent to that a person's conduct, taking medications, following to a diet, and/or applying modifications to their lifestyles and corresponds with acceptable instructions from their healthcare provider." Medication adherence, traditionally also referred to as "compliance," is defined as "the extent to which the patient's behaviors correspond with the treatment recommendations given." This could include missing appointments with the doctor, starting or stopping a treatment program early, or refusing to comply with the doctor's advice completely. These behaviors have a detrimental impact on the prognosis of the disease, increase the chance of hospitalization and relapse, worsen signs and symptoms, as well as elevate hospital expenses.

The study of (Philip et al, 2020) noted that disability is a severe global health issue during an individual's life span. Chronic mental disease, such as schizophrenia, causes obvious functional impairment in the sufferer. It has a huge detrimental impact on a person's daily activities and had a significant impact on a variety of areas of life. Disability is recognized as a significant but neglected the general health concern. It is multidimensional and experienced at various points along the spectrum ranging from little to major issues in a person's life. Furthermore, it inhibits a person's ability to accomplish a work in a method or in a range of abilities that is believed to be usual. Disability is a broad term that encompasses impairments, activity restrictions, and participation restrictions. Schizophrenia is a chronic, severe mental disorder that increases the risk of death, reliance, and disability.

According to the study of (Semahegn et al, 2020) reported that 31.7% of people with major psychiatric issues have long-term disability and dependency. Individual qualities, social resources, cultural norms, social security, housing conditions, and other environmental factors have all been related to psychiatric illnesses. Noncompliance with medication is defined as "a condition that occurs when an individual's behavior in taking drugs is not in accordance with provided guidelines from health

providers." Individuals with substantial mental health difficulties are more likely than other clients to refuse treatment due to faulty thinking and an insufficient level of knowledge about their illness and therapy.

Low drug adherence is one of the leading reasons of disease recurrence in patients with schizophrenia. As a result, promoting medication adherence is critical to the recovery and restoration of those suffering from schizophrenia. According to the findings, between 41 and 53 percent of patients with a diagnosis of schizophrenia failed to take their medications. Though adhering to medication requirements in schizophrenic patients has always been critical to the well-being and rehabilitation of those persons with schizophrenia (Fereidooni et al, 2023).

According to (Giordano et al, 2022) research, the primary goal of the treatment of schizophrenia has largely been on the reduction in the intensity of positive symptoms along with an improvement in the negative and cognitive manifestations of the illness (clinical recovery); however, in recent years, a greater focus has also been put on improving clients functioning as well as quality of life. Impaired cognition is linked to impairment and non-adherence to medications, and it has been used to predict drug cessation and patient relapse. As a result, cognitive impairment is extremely important in in-patient care, particularly obligatory psychiatric care, because it is linked to poor compliance with medications, worsening symptoms, and a lack of insight (Karanikola et al., 2023).

### Significance of study

Schizophrenia ranks as one of the most prevalent and serious mental illnesses, which accounts for 1% of all cases globally, and is considered among the top ten worldwide reasons of permanent disability. Schizophrenia is a long-term disorder with serious psychological, social and physical consequences (Makwan et al., 2022).

(Lestari et al., 2020) stated that improving medication adherence in schizophrenic patients is a complex process that demands numerous interventions. Certain aspects of non-adherence were influenced by sociocultural challenges, financial constraints, humiliation, care malfunctioning, and poor insight. Medication noncompliance can result in symptom deteriorating greater recurrence rates, and increased utilization of healthcare services. Medication and psychological therapy have been proven to be successful treatments for schizophrenia; however they do not address the underlying reasons of the disorder. In addition to medical care, involving assistance from community-based organizations helps improve drug adherence.

Drugs Non-adherence has serious ramifications for the individual, the medical system, as well as society, since it is associated with worse outcomes and increased health-care expenses. About half (50%) of people with schizophrenia are not taking their medicine as recommended, which typically results in worsening symptoms and elevated recurrence rates, resulting in adverse effects such as functional impairment (Taru et al., 2022). So the present study was designed to evaluate the relationship between medication non-adherence and disability in patients with Schizophrenia attending the outpatient clinic at Beni Suef Psychiatric Hospital.

### Aim of the study

The current study was aimed to investigate the severity of disability in outpatients with schizophrenia and to see its relationship with medication adherence at outpatient clinic in Beni Suef Psychiatric Hospital.

### Subjects and Methods:

#### Research Questions:

Is there disability among schizophrenic outpatient clinic at Beni Suef psychiatric Hospital?

Is there medication non-adherence between schizophrenic outpatient clinic at Beni Suef psychiatric Hospital?

Is there a relationship between disability levels and medication adherence among schizophrenic outpatient clinic at Beni Suef psychiatric Hospital?

#### Research design:

It was utilized a descriptive correlational study design to evaluate the relationship between medication non-adherence and disability in patients with schizophrenia attending the outpatient clinic at Beni Suef psychiatric Hospital.

#### Study setting:

The study was conducted at outpatient clinic at Beni Suef psychiatric Hospital, Beni Suef city, Egypt.

**Study subjects:** Non probability (purposive) sample was used consisted of 50 Patients with Schizophrenia who were attended to the outpatient clinic at Beni Suef psychiatric Hospital for follow up.

#### Inclusion criteria

1. Aged 20 years or over
2. Diagnosed with schizophrenia, according to DSM- 5
3. Taking antipsychotic medications for at least the last 12 months
4. Receiving outpatient care from a mental health clinic.
5. Accepted to participate in the study.

#### Exclusion criteria

1. Patients who have mental retardation,
2. Patients who have neurological or physical illness
3. Patients who refuse to share in the study.

**Sample size determination:****Sampling:**

A purposive sample, the estimated sample size is 50 patients at confidence level 90% and precision rate at 0.05 by using Steven equation (Steven, 2012). Since the total number was 134 patients with Schizophrenia While;

$$n = \frac{N \times p(1-p)}{\left[ \frac{N-1}{d^2} + z^2 \right] + p(1-p)}$$

P= 0.5

N= Total population

Z= Z value "1.96"

D= Standard Error

n= sample size

**Tools of data collections:****The socio-demographic questionnaire**

The researchers developed a semi-structured instrument that included data on age, sex, educational attainment, marriage status, job, income, place of residence, support system, and health-related characteristics (age of onset of disease, length of disease, and number of hospitalizations).

**The Brief Psychiatric Rating Scale (BPRS)**

It had been developed by Lukoff, et al. (1996). It is an almost structured questionnaire that is commonly used to assess psychotic and non-psychotic characteristics in schizophrenia and other serious psychiatric illnesses. Each item on the BPRS achieved a score ranging from 1 (not present) to 7 (very severe) and 0 (not evaluated). The reliability scores for psychiatric rating scale were 0.826 (good).

**Scoring system**

Severe > 70

Moderate 50-70

Low < 50

**The Medication Adherence Rating Scale (MARS)**

It is a 10-item self-reported test used to assess antipsychotic drug adherence. (Thompson et al., 2000) developed it by incorporating two previous assessments: the 30-item Drug Attitudes Inventory and the four-item Morisky Medication Adherence Assessment. MARS has 10 elements that provide information on medication adherence, medication attitudes, and undesirable reactions to the medication. The questionnaire permits yes or no replies, as well as a non-adherence reply marked as 0 and a compliance answer marked as 1. As a result, a "no" response is recorded as 1 for elements 1 - 6 and 9 - 10, while a "yes" response is recorded as 1 for elements 7 and 8. The reliability scores for medication adherence scale were 0.869 (good).

**Scoring system**

Non-adherence ≤ 70

Adherence ≥ 70

**The World Health Organization Disability Assessment Schedule version 2.0 (WHODAS 2.00).**

It was invented by (Frick et al., 2000). This scale measures the impairment through the preceding month. The questionnaire measured the difficulties in six areas: cognition, movement, self-care, social interaction, living activities, and interaction, specifically job-related disability. The scoring method assigns scores ranging from 0 to 4, with 0 representing nothing, mild to moderate to severe and extreme. The reliability scores for disability scale were 0.807 (excellent)

**Scoring system**

High > 70

Moderate 50-70

Low < 50

**Pilot study:** A pilot study has been carried out on the first 11 individuals in the sample. The pilot study's goal was to identify any specific issues with the tools' clarity, feasibility, and application. Because no changes were made to the assessment sheet, the patients chosen for the pilot trial were participated in the main research.

**Content Validity:**

Three panels of professionals in the fields of psychiatry and psychiatric nursing revised the tools. To ensure the authenticity of the original translations, each scale was translated into Arabic using the translate-back-translate method. By analyzing the internal consistency of the scales used for data collection, the pilot study evaluated the validity of the scales.

**Field work:**

After receiving approval to move forward with the study, the researcher introduced themselves to the schizophrenic patients, explained the nature and purpose of the study, voluntary participation and guaranteed confidentiality were ensured. The researcher also explained the study's aim, procedures, and information-gathering forms to the administrator of outpatients clinic at Beni Suef psychiatric Hospitals. After receiving their oral consent, the researcher interviewed the schizophrenic patients and filled the questionnaire according to the answers of the patients for the questions in about 40 to 45 minutes. The fieldwork for this study took place over a period of three months at January, 2023 until the end of March, 2023.

**Administration and Ethical consideration:**

Official permissions to conduct the study were obtained by submission of an official letter issued from the Dean of the Faculty of Nursing at Beni Suef University to the director of in Beni Suef psychiatric hospitals. Firstly, approval was obtained from ethical approval from research Committee of the General Secretariat of Mental Health in Abbacy, Cairo and finally the ethical approval was obtained from the Health Research Ethical Committee from faculty of medicine at Beni Seuf University. There's is no danger to the research patients

during its implementation. After clarifying the goal of the study, oral agreement was gained from the participant as well as informed family members who were willing to be involved in the research. Patients may reject to participate in and/or disengage at any time during the study. Then the researcher contacted the patient individually and explained the purpose of the study and also the characteristics of the tool used for information assessment. Before beginning data collection, each studied sample's confidentiality will be protected and assured.

### Statistical Analysis:

The results were displayed in tables once the data was categorized and sorted. Data were analyzed using the

Statistical Package for the Social Sciences (SPSS Inc; version 21; IBM Corp., Armonk, NY, USA) on a compatible personal computer. The mean scores before, after, and after the follow-up intervention were compared using the ANOVA test. A measure of various types of correlation, or a statistical link between two variables, in terms of numbers is called a correlation coefficient. A variable's value can be predicted using linear regression analysis depending on the value associated with another variable. When the chance of error was less than 5% ( $p < 0.05$ ), the results were regarded as significant, and when it was less than 0.1% ( $p < 0.001$ ), they were regarded as very significant. The Cronbach's alpha test was used to assess the produced tool's reliability.

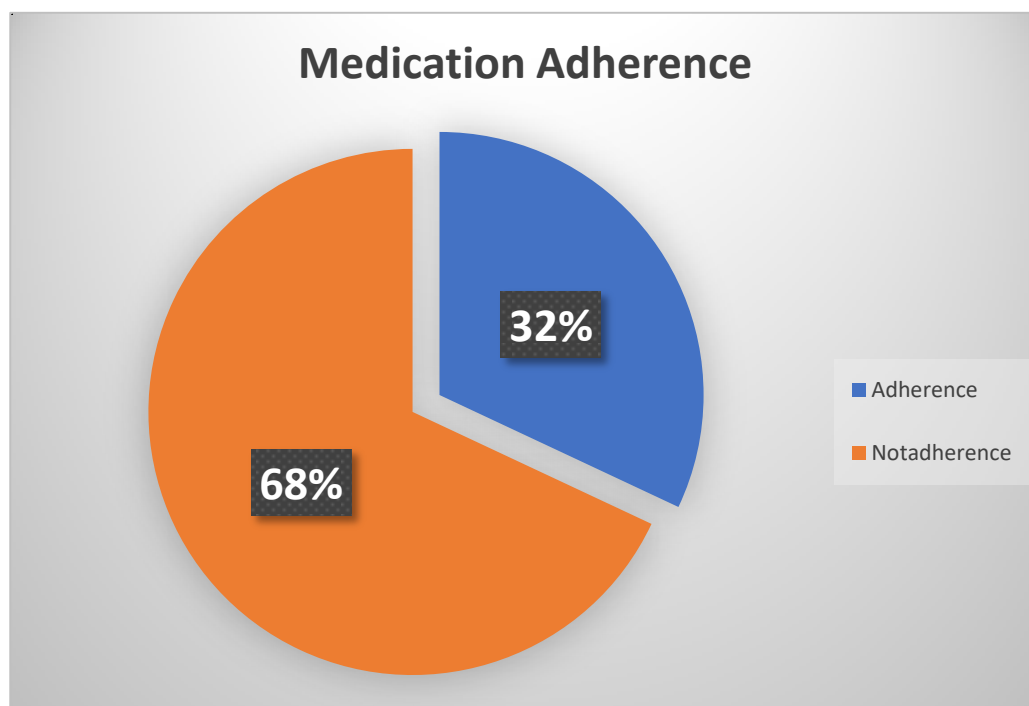
## Results

**Table (1): Distribution of studied patients according to their characteristics (n=50)**

Items	n	%
<b>Age:</b>		
25 - <35	27	54
35 - <45	13	26
>45	10	20
Mean (SD)	36.6 (6.7)	
<b>Gender:</b>		
Male	23	46
Female	27	54
<b>Marital status:</b>		
Single	29	58
Married	12	24
Divorced	9	18
<b>live with whom.</b>		
Alone	0	0
Parents or relatives	38	76
Husband	12	24
Friends	0	0
<b>Residence</b>		
Urban	34	68
Rural	16	32
<b>Educational level</b>		
Not read and write	7	14
Preparatory	16	32
Secondary	27	54
Bachelor	0	0
<b>Occupation</b>		
Not work	40	80
Work	10	20
<b>Income average</b>		
<2000 pound	35	70
2000 to 3000	15	30
>3000	0	0

**Table (2): Distribution of studied patients according to their social support and clinical data (n=50)**

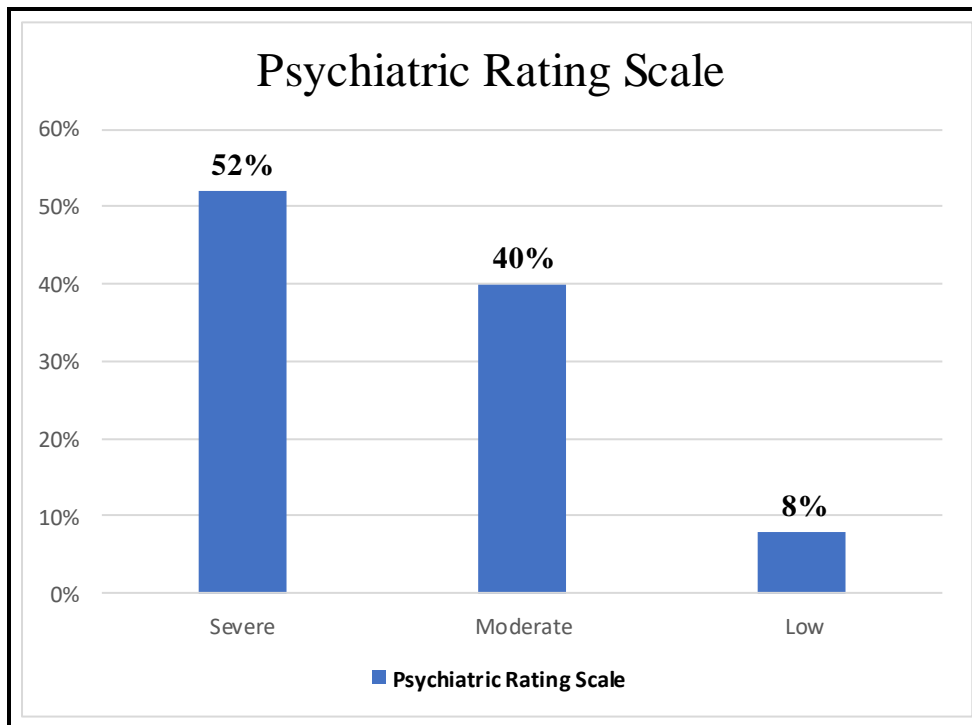
Items	n	%
<b>Have someone can trust or talk to about feelings or concerns.</b>		
Yes	18	36
No	32	64
<b>Have someone you can truly rely on in times of crisis.</b>		
Yes	15	30
No	35	70
<b>Have someone make feel loved and cared for</b>		
Yes	23	46
No	27	54
<b>Feel rejected by people.</b>		
Yes	31	62
No	19	38
<b>Age onset of disease</b>		
20 - <25	18	36
25 - <30	25	50
30 – 35	7	14
Mean (SD)	26.33 (4.9)	
<b>Duration of disease</b>		
3 – 9	24	48
10 – 16	22	44
>16	4	8
Mean (SD)	9.96 (2.4)	
<b>No of hospitalizations</b>		
Once	4	8
2 -7	30	60
8-13	11	22
>14	5	10
Mean (SD)	6.29 (1.7)	



**Figure (1): Distribution of studied patients related medication adherence (n=50)**

**Table (3): Distribution of studied patients according to Disability Assessment (n=50)**

	High		Moderate		Low	
	n	%	n	%	n	%
Cognition Domain	14	28	28	56	8	16
Mobility Domain	18	36	22	44	10	20
Self-care Domain	23	46	20	40	7	14
Getting along with people Domain	26	52	19	38	5	10
Life activities Domain	20	40	24	48	6	12
Participation in community Domain	22	44	21	42	7	14
Total	23	46	22	44	5	10



**Figure (2): Distribution of studied patients related psychiatric rating scale (n=50)**

**Table (4): Correlation between psychiatric rating scale, Disability Assessment, and medication adherence**

		Psychiatric rating scale	Disability Assessment	Medication adherence
psychiatric rating scale	r.		0.516	-0.622
	p		<0.01**	<0.01**
Disability Assessment	r.			-0.598
	p			<0.01**
medication adherence	r.			
	p			

\*Significant at  $p < 0.05$ .

\*\*Highly significant at  $p < 0.01$ . Not significant at  $p > 0.05$

**Table (5): Multiple Linear regression model for Disability Level (n=50).**

Predictors	Disability Level		T	P. value
	Unstandardized Coefficients	standardized Coefficients		
Age	.199	.112	2.054	<0.05*
Duration of disease	.230	.192	2.600	<0.05*
Age onset of disease	.276	.235	3.990	<0.01**
No of hospitalizations	.204	.157	2.871	<0.05*
Live with whom "Husband"	-1.661	1.001	2.134	<0.05*
Psychiatric rating scale	.279	.231	4.556	<0.01**
Medication adherence	-.376	.301	6.225	<0.01**
<b>Model</b>	<b>R<sup>2</sup></b>	<b>Df.</b>	<b>F</b>	<b>P. value</b>
<b>Regression</b>	<b>0.61</b>	6	9.135	.000**

\*Significant at p <0.05.

\*\*Highly significant at p <0.01.

Not significant at p>0.05

**Table (6): Multiple Linear regression model for medication adherence (n=50).**

Predictors	Medication adherence		T	P. value
	Unstandardized Coefficients	standardized Coefficients		
Age	-.200	.153	2.100	<0.05*
Duration of disease	-.210	.163	2.310	<0.05*
Age onset of disease	.199	.126	2.701	<0.05*
Have someone you can truly rely on in times of crisis	.280	.219	4.612	<0.01**
live with whom "Husband"	.240	.187	2.134	<0.05*
psychiatric rating scale	-.339	.280	4.810	<0.01**
Disability Level	-.302	.251	3.998	<0.01**
Occupation "work"	.184	.115	2.012	<0.05*
Income	.213	.167	2.090	<0.05*
Education level "secondary"	.318	.251	4.213	<0.01**
<b>Model</b>	<b>R<sup>2</sup></b>	<b>Df.</b>	<b>F</b>	<b>P. value</b>
<b>Regression</b>	<b>0.67</b>	9	11.234	.000**

\*Significant at p <0.05.

\*\*Highly significant at p <0.01.

Not significant at p>0.05

**Table (1):** Shows that the mean age of patients was 36.6 (6.7) years, with 54% of them being female. Additionally, 58% of the patients were single, and 76% of them lived with their parents or relatives. Moreover, 68% of the studied patients were from urban areas, and 54% of them had a secondary education. Furthermore, 80% of the patients did not work, and 70% of them had an income below 2000 pounds.

**Table (2):** Displays that 64% of patients did not trust or talk about their feelings or concerns, and 70% of them did not truly rely on anyone in times of crisis. Additionally, 62% of them reported feeling rejected. The mean age at the onset of the disease was 26.33 (4.9) years. Furthermore, the mean duration of the disease was 9.96 (2.4) years, and the average number of hospitalizations was 6.29 (1.7) times. According to medication adherence, 32% of patients were adherent, while 68% were non-adherent, as shown in **Figure (1)**.

**Table (3):** Reveals that 28% of patients had a high disability related to the cognition domain, while 36% had a high disability related to the mobility domain. In terms of the self-care domain and getting along with people domain, 46% and 52% of patients, respectively, had a high disability. For the related life activities domain, 48% of them had a moderate disability. Additionally, 44% of patients had a high disability according to their participation in the community. Furthermore, according total disability 46% and 44% of patients had high and moderate disability.

According to the psychiatric rating, 52% of patients suffered from a severe psychiatric disorder, while 40% suffered from a moderate disorder, as shown in **Figure (2)**.

**Table (4):** Shows a high positive correlation between disability assessment and psychiatric rating at a p-value of <0.05\*. Additionally, there was a high negative correlation between psychiatric rating and medication adherence at a p-value of <0.01\*\*.

Furthermore, there was a high negative correlation between disability assessment and medication adherence at a p-value of <0.01\*\*.

**Table (5):** Reports that the F-test value for the high significant model was 9.135, with a p-value of 0.000. This model explains 61% of the variation in Disability Level, as indicated by the R2 value of 0.61. Additionally, the table highlights that age onset of disease, psychiatric rating had a high frequency of positive effects on Disability Level, with a p-value of <0.01\*\*. While, medication adherence had high frequency of negative effects on Disability Level, with a p-value <0.01\*\*. Additionally, age, duration of disease, no of hospitalizations had a slight frequency of positive effects on Disability Level, with a p-value of <0.01\*\*

**Table (6):** Reports that the F-test value for the high significant model was 11.234, with a p-value of 0.000. This model explains 67% of the variation in medication adherence, as indicated by the R2 value of 0.67. Additionally, the table highlights that secondary education, have someone can truly rely on in times of crisis had a high frequency of positive effects on medication adherence, with a p-value of <0.01\*\*. While, disability level, psychiatric rating scale had high frequency of negative effects on medication adherence, with a p-value <0.01\*\*. Additionally, income, work, living with husband had a slight frequency of positive effects on medication adherence, with a p-value of <0.05\*. Furthermore, age and duration of disease had slight frequency of negative effects on medication adherence at p-value <0.05\*.

## Discussion

Schizophrenia is a persistent, debilitating mental illness that has an impact on a person's thoughts, feelings, and actions. Significant cognitive impairments as well as disabilities are frequently the results (Keepers et al., 2020). In outpatient clinics with schizophrenia, adherence to medication is crucial for controlling symptoms and lowering impairment. While taking prescription medications as directed is linked to better functional results, non-adherence can result in higher impairment and worse overall performance. Comprehensive therapies that aim to increase medication adherence can assist people with schizophrenia raise their general state of life while accomplishing better results (Karow et al., 2022).

**Regarding sociodemographic characteristics of the studied patients,** According to the current study, the average client age was 36.6 (6.7) years and 54% of the participants were female. In addition, 76% of those surveyed stayed with their parents as well as other relatives, and 58% of the patients being single.

Additionally, 54% of the patients in the study had a high school diploma or higher, and 68% of them came from cities. Additionally, 70% of those surveyed had incomes under 2000 pounds, and 80% of these individuals did not work. These findings were in agreement with a study by (Sathiadevan et al., 2023) which found that the respondents' average age (standard deviation) was 38.413.3 years. Most of the respondents were female (n=52; 56.52%), and most of them had completed secondary school (n=41; 44.57%). More than half of those who participated (n=49; 53.26%) and those who were jobless (n=61; 66.3%) had been married. These results may be due to that the patients having symptoms of an illness and having weak social skills are thought to be obstacles to employment and to practice their lives naturally. Another cause may be that, in men, symptoms usually begin to appear in the early to mid-twenties while, in women, symptoms usually begin in the late twenties. Schizophrenia is uncommon in children and rarely diagnosed in people over 45 years of age.

According to a study (Shilbayeh et al., 2023) 55.6% of the participants had been men (n=25), 64.4% were unmarried, 51.1% had a high school education, and 55% were jobless. The average age of the participants was 33.98 7.43 years. These findings were in contrast to a research by (Hassan et al., 2019) which reported that 64% of participants were men and 36% were women, with an average age of 40.58 9.5 years and a range of 22 to 57 years old. Between 2 and 37 years, the disease endured an average of 15.02 8.6 years. The average length of hospitalization was discovered to be 3.46 2.28 months. 29 patients (58%) had medium support from their families, 19 patients (38%) had support that was less than moderate, and only 2 patients (4%), had no family support. Due to decreased social functioning of schizophrenic patients may lead to substance use disorder, poverty and homelessness. People with untreated schizophrenia may lose contact with their family and friends and often find themselves living on the streets of large cities. This condition can last a lifetime, with poor psychosocial functioning throughout life in most cases.

The results of (Samuel et al., 2022) which were in conflict with those of the current study, also showed that the participants' ages ranged from 18 to 6 years. Only 21.7% of the respondents had higher degrees of education, while 70.5% of respondents lived in urban areas. The majority of participants nearly 90.7% live with their families right now. 29 percent of the study's subjects got married, or about one-third. 35.6% of people were identified to be working right now. Respondents' mean monthly earnings at home was 5,197.50. These variations could result from the differences in tools, the number of participants, and



culture could all be contributing factors. Numerous variables, including the patients' poor level educational attainment, their frequent hospitalizations, and the stigma associated with schizophrenia, could be responsible for this.

**According to their social support and clinical data**, the current study results indicated that more than two thirds of patients did not actually depend upon anyone in periods of disaster and that less than two thirds of individuals did not trust or speak about their thoughts or concerns. Furthermore, more than 50% of them claimed to have faced rejection. At the time of the disease's beginning, the average age was 26.33 (4.9) years. Additionally, the disease had a mean length of 9.96 (2.4) years and was hospitalized 6.29 (1.7) times on average. Because of that people with schizophrenia require lifelong treatment. Early treatment can help control symptoms before serious symptoms appear and improve appearance in the long term.

These findings were in disagreement with a research by (Shehu et al, 2023) that revealed the medical histories of patients undergoing treatment for schizophrenia at hospitals in Nigeria. Approximately fifty percent of the research's participants had illnesses that lasted between one and five years (mean: 7.8 years). The majority of them 50% have spoken with a psychiatrist. Two thirds of the research respondents have family relatives with identical diseases, and 75% of the patients have previously been hospitalized admissions.

The findings of the current study, which showed that the mean age of developing sickness was 25.348.81 years, were in contrast to those of a study by (Sathiadevan et al, 2023) the average length of the sickness was 156.63100.4 months, while the average length of the therapy was 134.63100.9 months. This could cause by insufficient social support could raise the likelihood of recurrence by promoting social disengagement, slowness, underactivity, and visible lack of enthusiasm, all of them can significantly impair social as well as occupational performance.

These findings are corroborated by a study done by (Adrien et al, 2023) who reported that the average age of the initial symptom was 20 (7.6) years, and the average number of admissions was 7.7 (1.3). Additionally, according to (Addington et al, 2017) study, almost all of patients with schizophrenia reported feeling rejected by society and other persons.

**Regarding disability levels among the studied patients**, the present study concluded that reveals that 28% of patients had a high disability related to the cognition domain, while 36% had a high disability related to the mobility domain. In terms of the self-care domain and getting along with people domain, 46% and 52% of patients, respectively, had a high

disability. For the related life activities domain, 48% of them had a moderate disability. Additionally, 44% of patients had a high disability according to their participation in the community. Furthermore, according total disability 46% and 44% of patients had high and moderate disability.

These findings corroborate the study of (Schulz & Murray, 2016) which found that the vast majority of individuals with schizophrenia had cognitive impairment. Approximately two thirds of the patients in the study had significant levels of impairment and interaction with others, according to (Chen et al, 2019) study. (Stefanatou et al, 2023) also claimed that persons with schizophrenia had high disability-related needs for self-care. In addition, (Harvey & Strassnig, 2019) showed that among individuals with schizophrenia, the severity of disability increases with disease duration and no history of hospitalizations. This may be because of that the schizophrenia-related outcomes can impair interactions with others, professional functioning, daily living abilities, cognitive functioning, and care for oneself, among other aspects of life.

Additionally, these findings were at variance with those of a recent study (Fakorede et al., 2020), which found that 78.0% of the subjects had disabilities generally. The majority (77.0%) had slight or moderate disabilities. According to individuals with disabilities (i.e., 234 was used as the denominator), proportions of those in different categories of disability have been identified. Only 1.3% of respondents claimed a disability in the "work/school tasks" domains, while 69.7% of respondents indicated a disability at their "societal involvement" domain. Variations in utilization of psychological services, insufficient wellness seeking practices, particularly in Africa, that have resulted in a later diagnosis, and various views of illness, where a few believe that it is a symbol of religion along with curse, family participation in care, as well as differences in the completeness and package of behavioral health services delivered that are not consistent may all be utilized to explain the variation in the frequency of those with functional disabilities between the present study along with other studies. Emotional problems would have been caused by patients feeling stigmatized from the community as well.

**Regarding adherence medication levels among the studied patients**, the present study concluded that 32% of patients were adherent, while 68% were non-adherent. These findings are corroborated by a study conducted by (Phan,2016) who found that nonadherence to medications is widespread in people with schizophrenia and is influenced by a number of variables, including not having insight, psychopathology, drug abuse, treatment-related

difficulties, stigma, fragmented care, contextual factors, and financial status. A large proportion of individuals with schizophrenia have issues with taking their medications, according to studies by (Loots et al, 2019) & (Dufort & Zipursky, 2021).

(Li et al, 2020) stated that the research outcomes were similar with the findings of the current study and that the level of compliance with medication in western rural China prior to COVID-19 was 63.6%. Results of a study by (Yao et al, 2022) showed that individuals with schizophrenia in Yingshan County throughout the COVID-19 pandemic had a medication adherence level of 41.5%, which was less than what was suggested by the current study. Between this study and earlier ones, there is a fair amount of consistency in the demographic traits, indicators definitions, as well as methods used for surveys. In light of this, the disparities between the results of the earlier studies and those of the current one show that the COVID-19 pandemic's effects may be a plausible cause for schizophrenia patients' intermittent medication compliance.

In contrast to the findings of the current study, a study by (Amira, 2023) found that just around 50% of the outpatients with schizophrenia had appropriate medication adherence, with high medication adherence coming secondly (39.6%) and poor compliance with medications coming last (10.4%). Furthermore, the finding of the current study contradicted the findings of the (Sathiadevan et al., 2023) study, which found that (20.65%) of participants had MARS scores below six, showing poor medication adherence, (26.09% had MARS scores between six and seven, demonstrating medium compliance, and (53.26% had MARS scores of eight or higher, demonstrating high adherence.

In addition, a study by (Shilbayeh et al., 2023) indicated that 64.4% of the participants assessed their degree of adherence as low, which was similar to the findings of the present research. Most individuals stated they had either minor symptoms or not at all. This is due to the reason that there are several variables which could affect an individual's compliance to medication, including side effects, which are the most significant consideration, the prices of medicines, antipsychotic drug dosage, the intensity of symptoms, the medical system, and lack of understanding among patients and their families. For example, once patients start feeling better, they discontinue treatments because they do not understand the significance of the treatment.

(Gudeta, 2023) study revealed that respondents' medication compliance score in Ethiopia was less than that of the present study's findings, with (37.7%) of them being non-adherent and (62.3%) of participants being adherent. The variations may result

from patient-related variables like insufficient comprehension of their illness, ignorance of the necessity to take drugs to lessen the effects of the disease on their personal lives, or not remembering to take their prescribed drugs. This outcome can be caused by negative drug side effects, the absence of social assistance and financial constraints because the majority of patients are unemployed, or it might be associated with schizophrenic patients' absence of insight.

**Regarding psychiatric symptoms severity levels among the studied patients**, the present study concluded that 52% of patients suffered from a severe psychiatric disorder, while 40% suffered from a moderate disorder. These findings support a study by (Arafa et al, 2017) found that almost all of the sample under examination had positive signs of schizophrenia. Furthermore, (Das & Devi, 2019) came to the conclusion that fewer than half of the sample under study showed mild positive signs of schizophrenia, and close to one-third had extreme positive symptoms.

These findings weren't consistent with a research by (Alam et al, 2023) demonstrates that by the end of the program, the proportion of study participants who had serious symptoms at baseline fell from 74.6% to 33.3%. Furthermore, the percentage of the study group who experienced moderate to severe symptoms before the program jumped to 37.3% after it. (Abou Tahoun et al, 2022) study results presented that two thirds (66.9%) of the patients investigated have minimal positive & negative syndrome scale (PANSS) levels, while approximately one third (33.1% of them) had moderately positive & negative syndrome levels (PANSS), which is significantly greater than the outcomes of the present research, these findings are consistent with present study results. Although can't able to examine them, further significant variables such psychiatric co-morbid conditions and late hospital admission that resulted in an extended time of untreated schizophrenia may possibly have contributed to these discrepancies in this research.

**Regarding Disability levels , adherence medication levels** medication adherence had high frequency of negative effects on disability Level, with a p- value <0.01\*\*. In contrast to the findings of the current study, the (Okasha et al, 2022) research for assessing impairment in bipolar patients throughout remission phase found no significant relationship between compliance with treatment as well as disability.

The results of the (Iuso et al, 2023) study also acknowledged that there were no statistically significant variations in basic cognition, psychopathology, expressive emotions, aggressiveness, social interaction, overall state of life,

or compliance with therapy, which was in contrast to the findings of the current investigation. The findings could be attributed to a two-way relationship between functioning and adherence, whereby better functioning at beginning of treatment can boost adherence, and good compliance with treatment would subsequently favorably impact functional outcomes, positively influencing the degree of disability when the course of therapy progressed.

In addition, the (Taru et al, 2022) study discovered that poor medications adherence had a negative correlation ( $r = 0.314$ ,  $P 0.001$ ) with the total disability sum scores and each of the other domains of impairment, suggesting that the severity of disability worsens with poor medications adherence. Through a variety of circumstances, including lack of understanding, a bad attitude against medication, and substance usage, drugs non-adherence may indirectly alter patients' levels of disability, leading to inequitable relief of symptoms and recurrence and the long-lasting type of schizophrenia. Furthermore, over two thirds of the participants reported having an illness for not less than 5 years. The small link may indicate that, despite the longstanding nature of this disease, non-adherence to medicine has an adverse effect on disability.

However, a study by (Ghosh et al, 2022) indicated a substantial correlation between the prevalence of non-adherence to medication and the degree of severity of the individual's illness among those with schizophrenia. Among individuals who had schizophrenia and delusional disorders, the MARS scores had a negative correlation with BPRS score ( $p = 0.0001$ ).

**Regarding Disability levels and psychiatric symptoms severity levels** the present research pointed that there was a high negative correlation between psychiatric symptoms severity and medication adherence at a  $p$ -value of  $<0.01^{**}$ . (Jones et al., 2020) study demonstrated a strong association between symptoms of illness and disability. A study by (Reddy et al, 2019) shown that schizophrenia is associated with disability across every aspect of life. Along with the present research findings, it was discovered that the variety of symptoms and their severity substantially correlated with disability. This may explained by symptoms can vary in type and severity over time, with periods of worsening and remission of symptoms, some symptoms may persist.

**Regarding adherence medication levels and psychiatric symptoms severity levels**, the present research pointed that there was a high negative correlation between psychiatric symptoms severity and medication adherence at a  $p$ -value of  $<0.01^{**}$ . These findings were in line with a study by (Yang et al, 2012) which discovered that mental symptoms

significantly impacted compliance with medication in those with schizophrenia. Additionally, a study conducted on 100 schizophrenia patients by (Ansari & Mulla, 2014) revealed that those who had higher PANSS scores exhibited low compliance.

Additionally, it was found that (Hsieh et al., 2022) that developing psychological symptoms in individuals with schizophrenia have negative effects on compliance with medications when the  $p$  value is less than 0.05. Furthermore, the study (Harvey et al., 2019) found that while there are few cross-sectional relationships between psychotic symptoms and daily functioning, there is growing indication that permanent clinical stability, which is frequently achieved through the use of long-lasting antipsychotic drugs, is also linked to enhancements in daily functioning. Non-adherence to medications can aggravate the degree of severity of a patient's illness, which can then result in a lack of understanding of the condition and poor clinical results.

Additionally, the results of the study (Leijala et al., 2022) were consistent with the current understanding that non-adherence is also associated with psychotic symptoms. However, a study by (Ghosh et al, 2022) indicated that individuals with schizophrenia and delusional diseases had MARS scores that adversely linked with BPRS scores ( $p = 0.0001$ ), which is identical to the current findings. This discrepancy in the outcomes can be explained by using various assessment techniques. Poor adherence among participants using antipsychotic drugs other than clozapine was associated with the more negative views toward antipsychotic treatment.

**Regarding Disability levels and sociodemographic characteristics among the studied patients**, the present study concluded that age, duration of disease, no of hospitalizations, onset of disease had a slight of positive effects on disability Level with a  $p$ -value of  $<0.01^{**}$ .

These results was Consistent with a study by (Philip et al, 2020) reported that the age of beginning, the length of the illness, sex, marital ,job, level of severity and nature of symptoms, period of unresolved psychosis, category and satisfactory of treatment, and absence of support from others all have an impact on disability. This may be explained by the young age of initiation and the occurrence of more severe symptoms predicted greater disability in people with schizophrenia.

On the other hand, mental ability as well as additional clinical variables (such as illness length, mental health comorbidities, medical management, disabilities level, and level of emotional function) had no impact on adherence, according to research by (Zarbo et al, 2023) & (Fekadu et al, 2019) study concluded that the most important patient-related

characteristics included the specific type of disease, the degree of severity, and symptomatic description, and that other aspects which include the age of beginning, duration of disease, number of admissions to hospitals, and present functioning were significantly associated with the degree of severity. All of these characteristics have also been observed in Ethiopia, in which the degree of burden has been linked to symptoms intensity, disabilities, and recovery.

According to the study (Sharma et al, 2020) reported that not any of the sociodemographic characteristics were associated with disability. This can be seen in light of the fact that the expression of disability means a gap in a specific individual's anticipated level of working properly. The predicted degree of functioning for each person is determined by the sociodemographic characteristics, which includes parameters for example age, sex, level of education, as well as residence. Any diminution in ability will be assessed and reported in terms of the premorbid/accepted levels and is unlikely to be affected by the sociodemographic characteristics.

**Regarding medication adherence and sociodemographic characteristics among the studied patients,** the present study concluded that income, work, living with husband had a slight frequency of positive effects on medication adherence, with a p-value of  $<0.05^*$ . Also age and duration of disease had slight negative effects on medication adherence at p-value  $<0.05^*$ . According to the findings of (Guo et al, 2023) study found that, illness factors, behavioral problems, poor income as well as quality of life, and demographic traits seem to be indicators of risk for adhering to medications among patients with schizophrenia, while support level, a favorable viewpoint, and conduct seem to be protective variables, which is consistent with the findings of the current study.

Besides (Dou et al, 2020) study results showed that the individual's age, educational background, and phase of disease comprised significant determinants of adherence, which was consistent with present study findings. These findings are consistent with the findings of (Mohamed et al, 2021) study showed that there were no significant variations between adherence to treatment and demographic characteristics.

While a study of (Hassan et al, 2019) indicated no significant relationship between compliance with medications and their age, length of disease, number of admissions to hospitals, sex, social state, or support from the family, that contrasted current study findings. Furthermore, these findings contradicted a study (Ali et al, 2023), which found that characteristics including age, sex, occupation, marital

status, levels of education, socioeconomic status, and the length of the illness had no effect on MARS scores ( $p>0.05$ ). The results are based depending on an analysis of multiple variables.

(Ghosh et al, 2022) study in India was also found that compliance did not vary among demographic characteristics. A variety of factors could explain the reason why there were no significant relationships between compliance with medicines and marital status, sex, years of age, or the educational backgrounds in this study. The results of a study by (Yu et al, 2021) revealed that there weren't a significant variations in adherence to medication related to individuals' gender, marital statuses, or levels of education ( $p > 0.05$ ) which was disagreed with the results of the current study. variances in sample traits, and discrepancies in the methods of assessment, the multidimensional nature of compliance with medications, and the likelihood of chance or randomization are all examples. The demographic characteristics of the study population differed from that of earlier studies, which influenced the outcomes. The methodologies and the instruments used in this study may have differed, influencing the observed associations.

### Limitations

This study had a small sample size, lack of longitudinal assessment and consecutive sampling due to the selection criteria which was determined, only outpatients from psychiatric hospital were taken up for the study and rate of flow at the outpatient clinic who have schizophrenia at Beni Seuf psychiatric Hospital was little.

### Conclusion

The results of the current study suggested that Schizophrenia can lead to disability in various areas of life, including social functioning, occupational functioning, independent living skills, cognitive functioning, and self-care. Nearly half of schizophrenic patients in the study have high disability level and have suffered from severe psychiatric symptoms.

### Recommendation

We recommend that

- Psycho-education programs are recommended to be given to chronic schizophrenic individuals as well as their family members at least periodically every two to three years; which will act as reinforcement of the treatment and to improve medication adherence and decrease disability levels.
- All patients with schizophrenia disorders who have recently received a diagnosis, as well as at least one

the caregiver, need to receive psycho-education as an integral component of the treatment plan.

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