

The impact of auditory hallucinations severity on social skills and depressive symptoms among schizophrenic patients



1Azza Ibrahim Abdelraof, 2Samia Gamal Awad Hamed , 3Eman Sameh Abd ELhay

1,2,3 Lecturer, Department of Psychiatric and Mental Health Nursing, Faculty of Nursing, Mansoura University

1.ABSTRACT

Background: Previous research has shown that auditory hallucination severity affects social skills and depressive symptoms among schizophrenic patients in various ways. However, few studies have focused on examining the relationship between auditory hallucinatory severity, social skills, and depressive symptoms. **Aim:** explore the impact of auditory hallucinatory severity on social skills and depressive symptoms among schizophrenic patients. **Research design:** A descriptive correlation research design was used in this study. **Subjects & Methods:** Purposive sample of 151 schizophrenic patients was obtained from Mansoura University hospital psychiatric inpatient wards and outpatient. Data were collected from patients by using three tools in addition to socio-demographic and clinical characteristics, Beck depression inventory II, Social skills assessment screening scale, and Phenomenology of hallucinations scale. **Results:** There is a positive relation between severity of auditory hallucination, depressive symptoms and social skills deficits among schizophrenic patients. **Conclusion:** The results confirmed that auditory hallucination severity has effect on social skills and depressive symptoms. **Recommendations:** This work shows that psychiatric nurses should teach persons with schizophrenia how to employ auditory hallucination management strategies to avoid being engaged in auditory hallucinations and diminishing social connection with the real world, in order to ameliorate depressive symptoms.

KEYWORDS: auditory hallucinations, depressive symptoms, schizophrenia, social skills.

2.Introduction:

Schizophrenia is a chronic illness that affects a person's cognitive, emotional, and psychosocial functioning (DeTore et al., 2018). It is one of the world's most severe and debilitating diseases, as well as one of the top 20 causes of disability (Vigo et al., 2016). The disorder has a significant impact on the individual's family relationships and working capacity, as well as his psychosocial functioning, which includes self-care skills and all other skills required for an independent and competent lifestyle, as well as the quality of social relationships, family life, and occupational performance (Keepers et al., 2020).

Delusions, hallucinations, disorganised speech, highly disorganised or aberrant motor activities, and negative symptoms are all symptoms of schizophrenia. It affects 1% of the population and is linked to personal, social, and familial stress. It is one of Egypt's most common psychotic diseases. A constellation of signs and symptoms associated with decreased occupational or social functioning are used to diagnose schizophrenia (Abdelgelil et al., 2022).

Auditory hallucinations or hearing voices are typical symptoms of people who are experiencing an acute episode of schizophrenia (Larøi, 2006). AHs are most typically observed in serious psychotic disorders, with lifetime incidence rates of

60-80% in schizophrenia spectrum disorders and 50-70 % in schizophrenia specifically (Shao et al., 2021). AHs tend to be frequently persistent despite remission of other psychotic symptoms (Lim et al., 2016).

Auditory hallucinations are stressful and demoralising experiences that have a detrimental influence on mental health and social functioning. Individuals with unpleasant voices are more likely to have negative affect, such as depression, and to withdraw socially (Larøi et al., 2019). Researches has linked AHs to depression and suicidal thoughts in those who hear voices, also known as voice hearers (Ma et al., 2016).

Depression is a prevalent symptom of schizophrenia, and it can manifest itself at any stage. It is one of the most common prodromal symptoms, and it can happen before psychotic symptoms appear. People with schizophrenia are unable to achieve a sense of accomplishment from self-realization and environmental feedback because of negative sensations that develop during the adaptation process. This encounter frequently leads to depression as well as feelings of loneliness and isolation (Liu et al., 2021).

Clinically, 50% of patients with schizophrenia exhibit depressive symptoms. The clinical signs of depressive symptoms and negative

symptoms are frequently the same. People with schizophrenia may appear unmotivated, suffer from anhedonia, or be socially alienated. It is widely recognised that social function impairment is a prevalent hallmark of schizophrenia and can be seen as early as the first stages of the illness (Hou et al., 2016).

Social skills are micro-components of social functions that include everyday interactions, encounters, and relationships. People with schizophrenia have obvious social skills deficiencies because they either never learned them or missed them while suffering from a significant mental illness (Abdelaziz et al., 2017). They also struggle to meet their basic needs, adapt, and maintain a stable social existence within society. A lack of spontaneity or clarity in discourse, as well as an improper manner of communication and connection with people, are all signs of a lack of essential social skills (Yadav, 2015).

Many people with psychiatric disorders have either a state-dependent reduction in social skills or lifelong deficiencies in these abilities. Patients with social skills deficiencies, such as difficulties communicating with others, social retreat, or difficulties doing daily activities, should be referred to social skills training (Videbeck, Shella, 2001).

Significance of the study

Schizophrenia is one of the most serious psychiatric diseases, with a lifetime frequency of about 4.0 per 1000 people. Positive to negative symptoms, as well as cognitive impairment, might be seen in the clinical presentation. In people with schizophrenia, hallucinations were shown to be the most common positive symptom. People who have auditory hallucinations may try to communicate with the source of the hallucinations and form a relationship with them. Serious auditory hallucinations can damage a person's emotions and produce a lot of stress, which can lead to depression and suicide ideation (Janaki et al., 2017). It should be noted that the majority of previous research studies concentrated on the link between social interaction and depression or the link between auditory hallucinations and depressive symptoms. Little research has investigated whether auditory hallucinations could play a role in this connection. Nurses working in psychiatric health care facilities do need to recognize and comprehend the important relationship between auditory hallucinations and schizophrenic patients' depression and poor social skills. Therefore this study aims to disclose such relationship which in many occasions can be life threatening to

schizophrenic patients who may commit suicide in response to the auditory hallucinations.

Aim of the study

This study aims to explore the impact of auditory hallucinations severity on social skills and depressive symptoms among schizophrenic patients.

Research Questions

- What is the relationship between auditory hallucinations severity, social skills, and depressive symptoms among schizophrenic patients?
- How the severity of auditory hallucinations affects the social skills and the depressive symptoms of schizophrenic patients?

Subjects and Methods

Study design: A descriptive correlation research design was used in this study.

Setting:

The study was carried out in inpatient and outpatients psychiatric care units at Mansoura university Psychiatric hospital. The capacity of the psychiatric department was 60 beds divided into one ward for men (20 beds), one ward for women (20 beds), and one ward for children and adolescent (20 beds). The outpatient clinic worked 2 days/ a week and served around 30 patients with schizophrenia/per week this clinic was run by (30) consultant psychiatrists and (35) psychiatric nurses.

Study sample

Purposive sampling was utilized to obtain the participants included in this study given the limitations in recruiting research subjects. The study sample included 151 patients with chronic schizophrenia diagnosed according to Diagnostic and Statistical Manual of Mental Disorders, 5th ed. The participants who satisfied the following criteria were included:

Inclusion criteria

- Age from 18 or more.
- Both sex.
- Patients who willing to participate in the study and able to give oral informed consents.

Exclusion criteria

- Mental retardation.
- Absence of organic disorders and substance abuse.

Sampling type

Anon- probability purposive sample technique was used. Based on data from literature (Wang, 2019), considering level of

significance of 5%, and power of study of 80%, and based on data from literature, the sample size can be calculated using the following formula:

$$n = \frac{\left(Z_{1-\alpha/2} - \frac{\alpha}{2}\right)^2 \cdot SD^2}{d^2}$$

Where, $Z_{1-\alpha/2}$ = is the standard normal variate, at 5% type I error it is 1.96, SD = standard deviation of variable and d = absolute error or precision. So,

$$n = \frac{(1.96)^2 \cdot (8.75)^2}{(1.4)^2} = 150.1$$

Based on the above formula, the sample size needed for the study is 151.

Tools:

Three tools were used to collect the study data, in addition to a socio-demographic and clinical data, including items related to gender, age, marital status, educational level, occupation, and clinical data which include the onset of illness, and duration of current hospitalization etc. Plus, a question about patient's reaction toward auditory hallucination was developed by Elhay et al., (2017), these includes:

1- Beck depression inventory II (BDI-II)

Ghareeb (2000) translated the standardised Arabic version of the short - form of the Beck Depression Inventory, which was used to determine the degree of depression. Ghareeb (2000) tested the reliability and concurrent validity of the Arabic version on a sample of the Egyptian population. The test was dependable. The scale has 13 items, each of which consists of four alternative statements rating the intensity of a certain symptom from 0 to 3. Sadness, pessimism, feelings of failure, dissatisfaction, guilt, self-hatred, suicidal thoughts, social retreat, hesitancy, body image, job retardation, fatigability, and loss of appetite are all measured on the scale. The total score varies between 0 and 39. The severity of depression was graded as follows: non-depression ranging from 0-4, mild depression ranging from 5-7, moderate depression ranging from 8-15, and severe depression ranging from 16 and higher. Cronbach's alpha value of the reliability (internal consistency) of the Beck depression inventory score in the present study was 0.894.

2- Social skills assessment screening scale

Bhola et al. (2016), developed this scale to assess the social skills deficiencies in patients based on observations and interviews. It consists of

20 items, each of which is scored on a three-point scale. This scale is divided into three subscales to facilitate the examination of social abilities, as follows: nonverbal communication (four items), verbal communication (six items), and social behavior (ten items). The scale's total score was calculated by summing the scores for each item, with lower scores indicating more social skill impairments. The total score ranged from 0 to 40, with 40 being the highest and 0 being the lowest (Wang, 2019). Cronbach's alpha value of the reliability (internal consistency) of the social skills assessment screening scale in the present study was 0.872.

3- Phenomenology of hallucinations scale" modified version"

The scale was developed by Lowe, (1973)& modified by Miller et al (1993). Translated into Arabic version by Abd Elhay et al. (2017), and proved to be strongly reliable (rs =0.972). The scale measures various parameters of auditory hallucinations which are "frequency", "duration", "location", "reality", "sensory intensity", "overt behavior", "causality", and "content-noun", "content-verb". each of which is scored on a three point likert scale from 1 to 3 with one indicating the lowest severity and three indicating the highest severity. Mainly, The auditory hallucination severity scores ranged from 9 to 27. Cronbach's alpha value of the reliability (internal consistency) of the Phenomenology of auditory hallucinations scale in the present study was 0.851

• Validity and reliability

The researchers translated Tool II (Social skills assessment screening scale) into the Arabic language, and they were tested for content validity by a panel of five psychiatric care nursing experts to ensure that the incorporated items are clear and appropriate for achieving the current study's aim. The test-retest method was used to assess the tools' reliability Pearson coefficient correlation $r = (0.87)$.

Pilot Study

It was carried out on 10% of the total study sample. It was conducted to evaluate the applicability and clarity of the tools, assess the feasibility of fieldwork, and detect any obstacles that might face the researcher and interfere with data collection. Also, it helped to figure out the time needed for filling up the questionnaire. The time needed to fill out the sheet was 15-20 minutes. The pilot subjects were not included in the main study sample.

- **Ethical considerations:**

Ethical approval was obtained from the Research Ethics Committee of the Faculty of Nursing- Mansoura University. Verbal consent was obtained from the patients after providing them with details about the study's aim, and nature of the study. they were assured that the data would be reserved confidential and that they had the right to withdraw from the study with no responsibility.

Fieldwork

The actual study data was collected during a four-month period, began in January and ending in April of 2022. The fieldwork was achieved through:

- An official approval was obtained from the head of the department of psychiatry care units at Mansoura university hospitals after explanation of the purpose of the study and requesting their permission for data collection and participation of the patients in the research process.
- Patients with schizophrenia who were documented on inpatient wards and on the follow-up sheets of outpatient units in psychiatric care units at Mansoura university psychiatric hospital and met the inclusion and exclusion criteria were eligible to take part in the study.
- The researchers interviewed patients individually to explain the purpose of the study as well as the aspects of the questionnaire that are related to auditory hallucinations severity, social skills, and depressive symptoms.
 - Data Analysis

All statistical analyses were performed using SPSS (Statistical Package for Social Sciences) for windows version 23.0 (SPSS, Chicago, IL). Continuous data were normally distributed and were expressed in mean \pm standard deviation (SD). Categorical data were expressed in numbers and percentages. The Chi-square test was used for the comparison of variables with categorical data. The reliability (internal consistency) test for the questionnaires used in the study was calculated. Statistical significance was set at $p < 0.05$.

Results

Table (1): Presents the distribution of the socio-demographic and clinical data of schizophrenic patients, Among the 151 patients,

and 64.2% were male, and 35.8% were Female. One-third of them (34.4%) were single, and 28.5% were married. Their average age was 38 years (SD 11.6). One-third of them had an elementary school education which was equivalent to a secondary-school education. Thirty-one of them were unemployed, (29.8%) were employed, (26.3%), and (18.5% & 19.9%) participants were students and housekeepers, respectively.

The mean of onset of schizophrenic disease 26.7 years (SD 5.5), the average number of admission times in hospitals were 3.4 (SD 1.7), the duration of stay in hospital was 5.5 weeks (SD 2.8). The average number of the onset of hearing voices 5 years (SD 3).

Figure(1): illustrates that severity distribution of Phenomenology of auditory hallucinations scale scores, (46.3%) of participants had severe hallucinations and (41.1%) had moderate level of severity and only (2.6%) had low level of auditory hallucinations.

Figure 2: shows the patient's reactions toward auditory hallucinations, participants were feel discomfort (18.5%), fear and anxiety (13.9%), sad (17.9%), and angry (12.6%). While (17.9%) of them were cheerful pleased and enjoyed voices.

Table (2) and Figure (3) Shows that nearly half (47.0%) of the studied patients had severe levels of depression.

Figure (4): shows that more than one-third (35.8%) of the studied patients had moderate deficits in social skills. Also, more than half (55.6%) of them had sever deficits in social skills.

Table (3): Illustrates that there is a positive significant relationship between Phenomenology of hallucinations severity and Beck depression inventory severity ($P=0.015$). In addition, there is a positive significant relationship between Phenomenology of hallucinations severity and social skills deficit ($p= <0.001$).

Table (4): Multiple regression analysis shows that, the severity of auditory hallucinations as a mediator between social interaction skills and severity of depressive symptoms.

The relationship between Phenomenology of auditory hallucination and depression was positive stating that with sever auditory hallucination the depression level increase. Moreover, severe auditory hallucination was associated with sever social skills deficits.

Table 1. Number and frequency distribution of the socio-demographic and clinical characteristics of patients (N=151)

	n	%
Age		
< 20	12	7.9
21 – 30	34	22.5
31 – 40	40	26.5
41 – 50	45	29.8
> 50	20	13.2
Mean ±SD	38.0 ±11.6	
Gender		
Male	97	64.2
Female	54	35.8
Occupation		
Doesn't work	48	31.8
Working	45	29.8
Student	28	18.5
Housewife	30	19.9
Education		
Basic Education	46	30.5
Primary Education	30	19.9
Secondary Education	46	30.5
University Education	29	19.2
Marital Status		
Single	52	34.4
Married	43	28.5
Divorced	32	21.2
Widow	24	15.9
Living Situation		
Living Alone	42	27.8
With Family	58	38.4
With Relatives	26	17.2
Others	25	16.6
Onset (Years)		
< 20	9	6.0
20 – 30	99	65.6
31 – 40	43	28.5
Mean ±SD	26.7 ±5.5	
Number of Admission times		
Less than 4 times	77	51.0
4 Times or more	74	49.0
Mean ±SD	3.4 ±1.7	
Duration of stay (Weeks)		
Less than 5 weeks	68	45.0
5 Weeks or more	83	55.0
Mean ±SD	5.5 ±2.8	
Since when did you start having hearing issues?		
Less than 6 Years	93	61.6
6 Years or more	58	38.4
Mean ±SD	5.0 ±3.0	

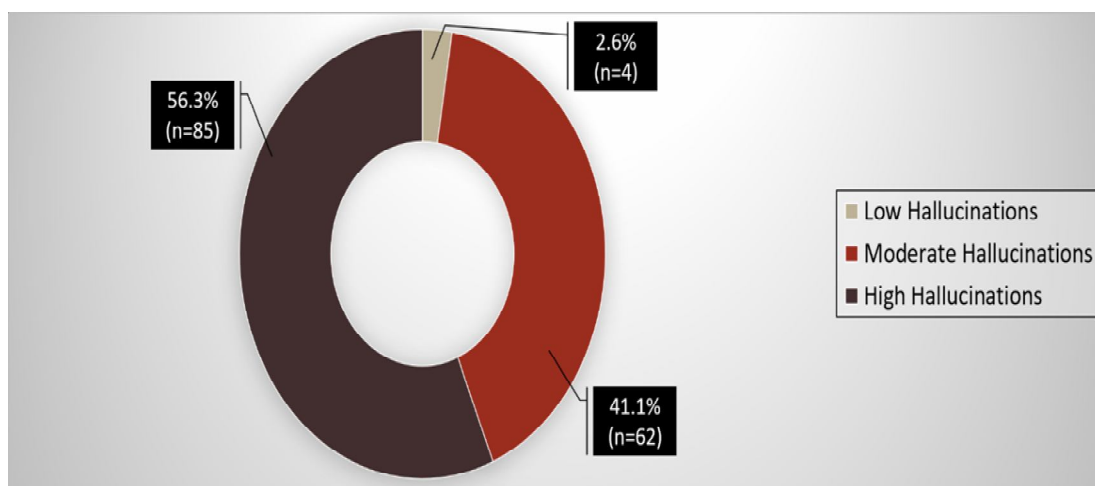


Figure 1. Number and frequency distribution of Phenomenology of hallucinations scale scores

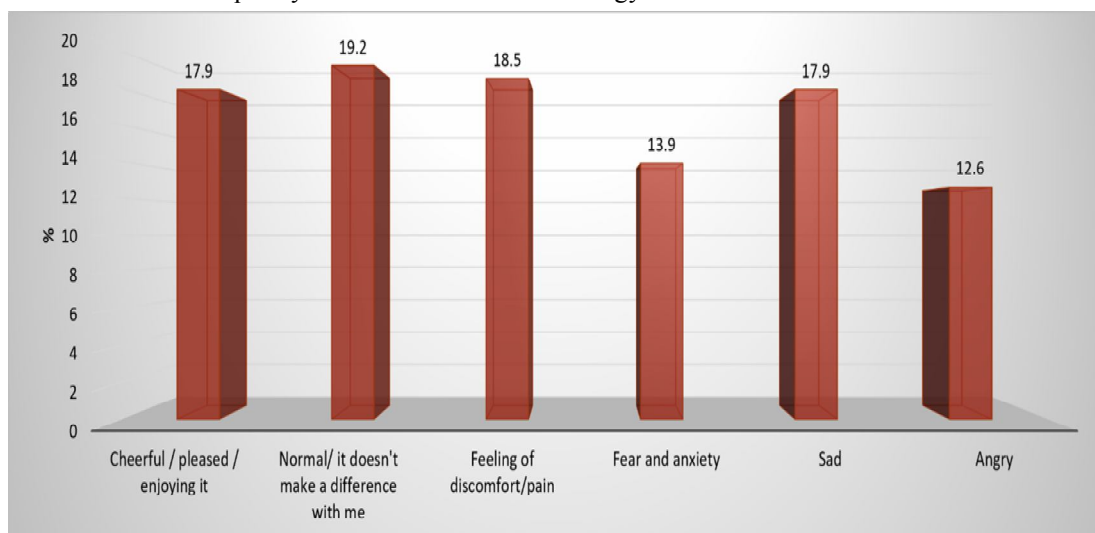


Figure 2. The schizophrenic patient's reaction to auditory hallucinations

Table 2. Number and frequency distribution of Beck depression inventory score (151)

	Score Range	n	%
Beck Depression Score			
No Depression	(0 – 4)	14	9.3
Mild Depression	(5 – 7)	28	18.5
Moderate Depression	(8 – 15)	38	25.2
Severe Depression	(16 or More)	71	47.0
Mean ±SD		16.8 ±8.7	

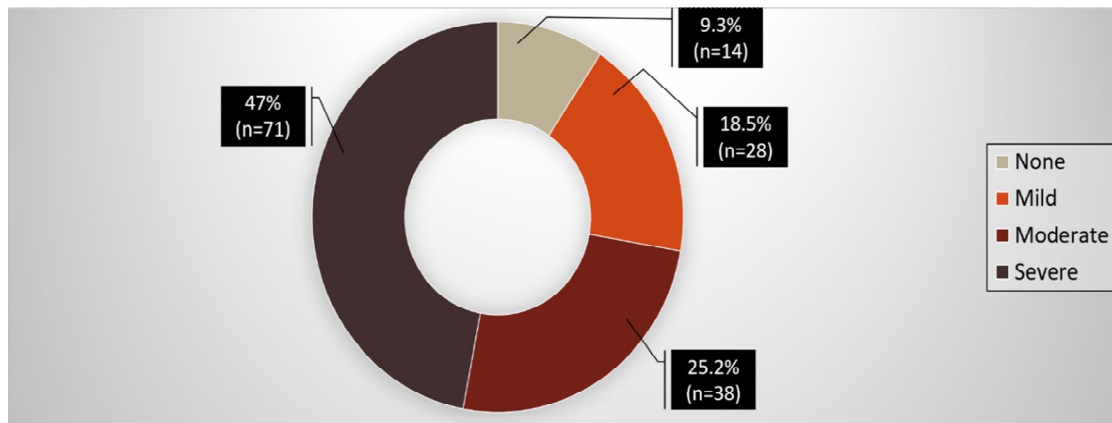


Figure 3. Distribution of Beck depression inventory score

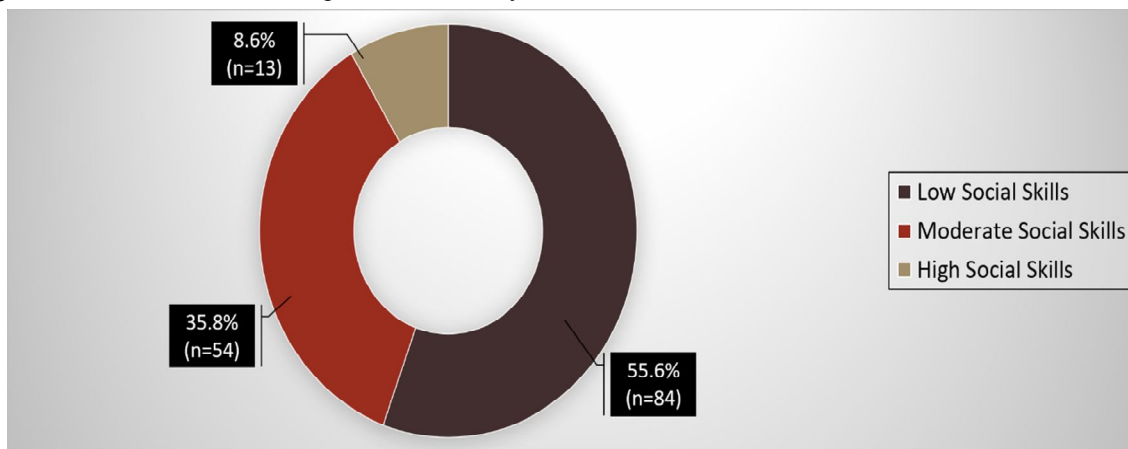


Figure 4. Number and frequency distribution of the social skills assessment total score

Table 3. Association between Phenomenology of hallucinations scale scores with social skills assessment total score and Beck depression inventory score

	Low (n=4)		Moderate (n=62)		High (n=85)		Chi-Square	
	n	%	n	%	n	%	X ²	P
Beckdepression inventory								
None	0	0.0	9	14.5	5	5.9		
Mild	0	0.0	18	29.0	10	11.8		
Moderate	1	25.0	9	14.5	28	32.9		
Severe	3	75.0	26	41.9	42	49.4	15.736	0.015*
Social skills assessment								
Low	0	0.0	35	56.5	49	57.4		
Moderate	0	0.0	22	35.5	32	37.6		
High	4	100.0	5	8.1	4	4.7	44.143	<0.001**

* Significant statistic >0.005

** Highly significant >0.001

Table4. Regression analysis of factors that may predict BDI score

Model	Unstandardized Coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8.273	5.244		1.578	0.117
Hallucinations Score	0.168	0.267	0.054	0.627	0.532
Social Score	0.037	0.136	0.023	0.272	0.786

Discussion

Schizophrenia is a significant mental illness that affects around 1% of the world's population today. Auditory hallucinations are the most dominant type of hallucination found in schizophrenic patients **McLeod et al. (2007)**, and are one of the positive symptoms of schizophrenia, affecting 70 percent of patients (**Townsend, 2011**). Patients with schizophrenia report auditory hallucinations as one of the most invalidating and unpleasant experiences, leading to feelings of powerlessness and helplessness in the face of their illness (**Barreto Carvalho et al., 2015**). Hence, this study was designed to explore the role of auditory hallucinatory severity on social skills and depressive symptoms among schizophrenic patients

The current study revealed that, the average age of schizophrenic patients was 38 years .This finding is consistent with **Fathy et al. (2019)**,who discovered that schizophrenia patients were under the age of 40 years. On the same line, (**Khalil & 2012; Mousa et al., 2011**), found that, nearly half of the schizophrenic patients were between the ages of 30 and 40years. In contrast, more increase in patients' age was recorded by **Abdelaziz et al.(2017)** who discovered that the majority of the patients were between the ages of 40 and 50 years old. The mean score of onset of schizophrenic disease in this study was 26.7 years, This finding is in line with the findings of **Ng et al. (2012)**, who stated that the majority of them had the first onset of illness for over 20 years.

The current study showed that about half of the studied patients had severe auditory hallucinations. It may be related to that; auditory hallucinations are the one of the core symptoms of schizophrenia. In a similar manner, **Fadly et al., (2017)**, reported that hallucinations in schizophrenic patients were moderate on average.

Regarding the patient's reactions toward auditory hallucinations, the current study showed that, the patient had different reactions toward their hallucination as discomfort, anxiety, sad and angry while others were cheerful, pleased and enjoyed voices. It may be due to the fact that, mental illness usually affect the cognitive, affective and behavioral status of the patients as well as general

feeling of anxiety and fear. This is in the same line with **Birchwood et al. (2014)**,who reported that, patients with hallucinations often experience fear, anxiety, and even depression. Moreover, **Goda et al. (2017)**, revealed that, the majority of the studied schizophrenic patients reported that they were distressed and the voices are triggering anxiety and headache and about half of the studied patients described the voices as hostile.

The current study showed that nearly half (47.0%) of the schizophrenic patients had severe level of depressive symptom. This may be due that, schizophrenic patients experience loneliness, social disengagement, low self-esteem, social and occupational impairment. Schizophrenia disrupts all of their plans, their capacity to succeed in life, and even their ability to think.

Similarly **Xu et al. (2018)**, showed that despite the widespread use of atypical antipsychotics and antidepressants, the frequency of depressive symptoms in patients with schizophrenia has remained high, and **Araújo et al. (2002)**, in his study of 104 patients diagnosed with schizophrenia, he discovered that (40,4%) of them had at least one depressed symptom. Additionally **Lancon et al. (2001)**, illustrated that the percentage of patients with schizophrenia who have depressive symptoms at some point in their lives ranges from 25% to 80%. Depressive symptoms are more common in the acute period, with prevalence rates ranging from 20% to 80%.

Schizophrenia also manifested by negative, positive symptoms as hallucination and delusion and cognitive deficit symptoms in memory, attention and impairment in social and occupational functioning. In schizophrenia, particular impairments are vital functioning areas as relations with others, work, and self-care. Such impairments inhibit patients from developing social relationships, satisfying their social roles and requirements (**Patel, et al 2014**).

The current study showed that more than half (55.6%) of the schizophrenic patients had severe social skills deficit. This outcome could be attributable to the fact that many people with schizophrenia have poor communications skills (because they use language in an odd or confusing manner, may use neologisms or word salad or

words that are not real words). It can also be influenced by aggressive or inappropriate behavior, which makes it difficult for persons with schizophrenia to make friends and interact with others.

This is in line with the findings of **Mueser et al. (2010)**, who found that schizophrenic patients had significantly greater social skills deficits in all domains linked to verbal communication skills and social perception. Similarly, Patients with schizophrenia often have social skills deficits, according to **Fennell. (2016)**, which include an inability to communicate effectively with others, confirm and express negative or positive feelings, make a request or refuse unrealistic demands from others, and understand interpersonal boundaries.

In a similar view, **Yadav (2015)**, noted that people with schizophrenia have clear social skills deficits because they either never learned them or missed them throughout the course of a significant mental illness. Lack of spontaneity or clarity in conversation, as well as an improper manner of communication and interaction with others, is all signs of a lack of essential social skills.

The current study illustrated that there is a positive significant relationship between phenomenology of auditory hallucinations severity and beck depression inventory. This may be due to that, auditory hallucinations take the form of commenting or commanding voices, and that voices frequently cause increased distress in patients. These voices may also comment negatively on patients and their activities, or give patients instructions or commands, resulting in low self-esteem. Voices can sometimes be threatening or terrifying, which can cause mental distress and depression.

This is consistent with the findings of **Janaki et al. (2017)**, who found that, auditory hallucinations are significantly positively correlated with depressive symptom, and that the longer the auditory hallucination lasts, the more severe depressive symptoms increase. Severe auditory hallucinations affect the individual's emotions and cause high stress, potentially leading to depressive symptoms and suicidal ideation. **Ma et al. (2016)**, also revealed that auditory hallucinations are a primary psychotic symptom that affects patients' mood and is linked to depression and suicidal thoughts in those who hear voices.

In the same line, **Ben-Zeev et al. (2016)**, mentioned that, auditory hallucinations can be highly upsetting, and significantly impair mental health and social functioning. In contrast, **Barreto**

Carvalho et al. (2015), observed no significant relationships between the Beck depression inventory scores and the frequency, content, ability to control the voices, or invalidation, suggesting that there are no associations between depressive symptomatology and these aspects of hallucinatory activity.

The current study also showed that, there is a positive significant relationship between phenomenology of auditory hallucinations severity and social skills deficits. This may be because auditory hallucinations inhibit patients from participating in social activities. Patients also avoid social interactions and appear to have little motivation to establish social relationships. This is in line with the findings of **Wang (2019)**, who found that the severity of auditory hallucinations has a mediating influence. Because of the psychological pressure that auditory hallucinations create, the degree of auditory hallucinations has a significant impact on the correlations between social interaction abilities and the severity of depressive symptoms.

Multiple regression analysis in the current study shows that, the severity of auditory hallucinations as a mediator between social interaction skills and severity of depressive symptoms. Which confirms that auditory hallucination severity mediates social interaction skills deficit and depressive symptoms. It may be attributed to what **Javitt et al. (2015)**, said that, people diagnosed with schizophrenia get intensely immersed in their auditory hallucinations and fail to connect with circumstances of their environment. Furthermore, people with schizophrenia frequently lack the ability to correctly identify information sources; they are more likely to build interpersonal interactions with the fictitious source of their auditory hallucinations. This is consistent with **Wang (2019)**, regression analysis model who revealed that, social interaction skills and auditory hallucinations had can predict the presence of depressive symptoms, with worse social interaction and more severe auditory hallucinations increasing the likelihood of depressed symptoms. Social interaction deficits have a significant negative impact on the severity of auditory hallucinations in patients with schizophrenia, with worse social interaction skills associated with more severe auditory hallucination severity (**Javitt et al., 2015**). Therefore, early clinical interventions to improve social interaction skills and auditory hallucinations can alleviate the negative effects of depression on individuals with schizophrenia.

Conclusion

The severity of auditory hallucinations has a profound impact on social interaction skills and the severity of depressive symptoms in people diagnosed with schizophrenia.

Recommendation

Based on the previous findings of the present study, the following recommendations are suggested:

Psychiatric nurses should teach persons with schizophrenia how to employ auditory hallucination management strategies to avoid being engaged in auditory hallucinations and diminishing social connection with the real world, in order to ameliorate depressive symptoms.

Psychiatric nurses must also incorporate social interaction skills training to help people diagnosed with schizophrenia return to the community.

References

Abdelaziz, E., E., El Aziz, A., Ebrahim, H., El, A., Rady, A., Nasr, M., & Din, E. L. (2017). Effectiveness of social skills training program on social functioning and severity of symptoms among patients with schizophrenia. *American Journal of Nursing Science*, 6, 454-466. <https://doi.org/10.11648/j.ajns.20170606.13>

Abd Elhay, E., Abdel-Dayem, S., & Lachine, O. (2017). *Self-management of Auditory Hallucinations Among Schizophrenic Patient*. LAP LAMBERT Academic Publishing.

Abdelgelil, S., Elyazal, A., Mubarak, A., Elsherif, Z. (2022). Effect of Social Skills Enhancement Training Program on Negative Symptoms among Patients with Schizophrenia. *Tanta Scientific Nursing Journal*, 24(1), 35-73. <https://doi.org/10.21608/tsnj.2022.221539>

Araújo, F. S. De, Petribú, K., & Bastos, O. (2002). Characterization of depressive syndrome in schizophrenic outpatients * Caracterização de uma síndrome depressiva em pacientes. *Revista Brasileira de Psiquiatria*, 24(1), 18–25.

Barreto Carvalho, C., da Motta, C. D., & Peixoto, E. B. (2015). Hallucinatory Activity in Schizophrenia: The Relationship with Childhood Memories, Submissive Behavior, Social Comparison, and Depression. *International Journal of Social, Behavioral, Educational, Economic and Management Engineering*, 9(5), 401–409.

Ben-Zeev, D., Scherer, E. A., Gottlieb, J. D., Rotondi, A. J., Brunette, M. F., Achtyes, E. D., Mueser, K. T., Gingerich, S., Brenner, C. J., Begale, M., Mohr, D. C., Schooler, N., Marcy, P., Robinson, D. G., & Kane, J. M. (2016). mHealth for Schizophrenia: Patient Engagement With a Mobile Phone Intervention Following Hospital Discharge. *JMIR mental health*, 3(3), e34. <https://doi.org/10.2196/mental.6348>

Bhola, P., Basavarajappa, C., Guruprasad, D., Hegde, G., Khanam, F., Thirthalli, J., & Chaturvedi, S. K. (2016). Development of a Social Skills Assessment Screening Scale for Psychiatric Rehabilitation Settings: A Pilot Study. *Indian journal of psychological medicine*, 38(5), 395–403. <https://doi.org/10.4103/0253-7176.191392>

Birchwood, M., Michail, M., Meaden, A., Tarriner, N., Lewis, S., Wykes, T., Davies, L., Dunn, G., & Peters, E. (2014). Cognitive behaviour therapy to prevent harmful compliance with command hallucinations (COMMAND): A randomised controlled trial. *The Lancet Psychiatry*, 1(1), 23–33. [https://doi.org/10.1016/S2215-0366\(14\)70247-0](https://doi.org/10.1016/S2215-0366(14)70247-0)

DeTore, N. R., Mueser, K. T., & McGurk, S. R. (2018). What does the Managing Emotions branch of the MSCEIT add to the MATRICS consensus cognitive battery?. *Schizophrenia research*, 197, 414–420. <https://doi.org/10.1016/j.schres.2018.02.018>

Elhay, E. S. A., El-bilsha, M. A., & El-atroni, M. H. (2017). The Effect of Auditory Hallucinations Management Program on Quality of Life For Schizophrenic Inpatients, Egypt. 6(1), 1–11. <https://doi.org/10.9790/1959-0601070111>

Fadly, M.S., & Keliat, B.A. (2018). Relationship between Spiritual Well-Being and Hallucinations in Patients with Schizophrenia in a Mental Health Hospital. *UI Proc. Health Med.* 3. International Nursing Student Symposium and Festival 2017 Retrieved June 1, 2022, from <http://proceedings.ui.ac.id/index.php/uiphm/article/view/26>

Fathy, R., Hadyghaith, A., & Mohammed, S. M. (2019). Efficacy of Social Skills Training On Symptoms Intensity, Insight and Social Functioning In Patients with Schizophrenia. 8(6), 12–25. <https://doi.org/10.9790/1959-0806111225>

- Fennell, M. (2016). Overcoming low self-esteem: A self-help guide using cognitive behavioural techniques. [https://books.google.com/books?hl=en&lr=&id=ljv-CwAAQBAJ&oi=fnd&pg=PT8&dq=fennell,+M.\(2009\):+Overcoming+low+self-esteem,+a+self-help+guide++using+cognitive+behavioral+techniques.+Create+Britain,+London.+P:+7.&ots=GvWDMrkEW&sig=KtJLnkKm6VYFT4jV2_g6-UcSglc](https://books.google.com/books?hl=en&lr=&id=ljv-CwAAQBAJ&oi=fnd&pg=PT8&dq=fennell,+M.(2009):+Overcoming+low+self-esteem,+a+self-help+guide++using+cognitive+behavioral+techniques.+Create+Britain,+London.+P:+7.&ots=GvWDMrkEW&sig=KtJLnkKm6VYFT4jV2_g6-UcSglc)
- Gharib, Gharib Abdel Fattah. (2000). The Psychometric Characteristics of the BDI II in the Egyptian Environment. *Journal of Psychological Studies*, published by the Egyptian Psychologists Association. 10 (4) 593-624
- Goda, S., Said, E., Abeer, A. □;, & Berma, M. (2017). Patterns used by Schizophrenic Patients to Cope with Auditory Hallucination. *Pssjn.Journals.Ekb.Eg*, 4(1). https://pssjn.journals.ekb.eg/article_33086.html
- Hou, C. L., Ma, X. R., Cai, M. Y., Li, Y., Zang, Y., Jia, F. J., Lin, Y. Q., Chiu, H. F. K., Ungvari, G. S., Hall, B. J., Zhong, B. L., Cao, X. L., & Xiang, Y. T. (2016). Comorbid Moderate–Severe Depressive Symptoms and their Association with Quality of Life in Chinese Patients with Schizophrenia Treated in Primary Care. *Community Mental Health Journal*, 52(8), 921–926. <https://doi.org/10.1007/S10597-016-0023-5>
- Janaki, V. , Suzaily, W. , Abdul Hamid, A. R. , Hazli, Z. , & Azmawati, M. N. (2017). The dimensions of auditory hallucination in schizophrenia: Association with depressive symptoms and quality of life. *International Medical Journal of Malaysia*, 16(2), 55–64.
- Javitt, D. C., & Sweet, R. A. (2015). Auditory dysfunction in schizophrenia: integrating clinical and basic features. *Nature reviews. Neuroscience*, 16(9), 535–550. <https://doi.org/10.1038/nrn4002>
- Khalil A.A.(2012). Community Based Treatment: Impact of Social Skills Training Program on Improving Social Skills among Schizophrenic Patients. *World Applied Sciences Journal*; 18 (3): 370-78.
- Keepers, G. A., Fochtmann, L. J., Anzia, J. M., Benjamin, S., Lyness, J. M., Mojtabai, R., Servis, M., Walaszek, A., Buckley, P., Lenzenweger, M. F., Young, A. S., Degenhardt, A., Hong, S. H. (2020). The American Psychiatric Association Practice Guideline for the Treatment of Patients With Schizophrenia. *Focus (American Psychiatric Publishing)*, 18(4), 493–497. <https://doi.org/10.1176/appi.focus.18402>
- Lançon, C., Auquier, P., Reine, G., Bernard, D., & Addington, D. (2001). Relationships between depression and psychotic symptoms of schizophrenia during an acute episode and stable period. *Schizophrenia research*, 47(2-3), 135–140. [https://doi.org/10.1016/S0920-9964\(00\)00002-5](https://doi.org/10.1016/S0920-9964(00)00002-5)
- Larøi, F. (2006). The phenomenological diversity of hallucinations: Some theoretical and clinical implications. *Psychologica Belgica*, 46, 163–183. <http://www.ingentaconnect.com/content/acad/psyb/2006/00000046/F0020001/art00010>
- Larøi, F., Thomas, N., Aleman, A., Fernyhough, C., Wilkinson, S., Deamer, F., & McCarthy-Jones, S. (2019). The ice in voices: Understanding negative content in auditory-verbal hallucinations. *Clinical psychology review*, 67, 1–10. <https://doi.org/10.1016/j.cpr.2018.11.001>
- Lim, A., Hoek, H. W., Deen, M. L., Blom, J. D., (2016). Prevalence and classification of hallucinations in multiple sensory modalities in schizophrenia spectrum disorders. *Schizophrenia research*, 176(2-3), 493–499. <https://doi.org/10.1016/j.schres.2016.06.010>
- Liu, B. P., Wang, X. T., Liu, Z. Z., Wang, Z. Y., An, D., Wei, Y. X., Jia, C. X., & Liu, X. (2020). Depressive symptoms are associated with short and long sleep duration: A longitudinal study of Chinese adolescents. *Journal of affective disorders*, 263, 267–273. <https://doi.org/10.1016/j.jad.2019.11.113>
- Lowe, G. R. (1973). The phenomenology of hallucinations as an aid to differential diagnosis. *British Journal of Psychiatry*, 123(577), 621–633. <https://doi.org/10.1192/bjp.123.6.621>
- Ma, Y. C., Beckstead, J. W., Lo, S. C., & Yang, C. Y. (2016). Auditory Hallucinatory Beliefs in Patients With Schizophrenia: Association of Auditory Hallucinations With Social Interactions, Characteristics and Emotional Behaviors Over 3 Months. *Archives of psychiatric nursing*, 30(3), 363–369. <https://doi.org/10.1016/j.apnu.2015.12.010>

- Mahrous Abdelaziz, E., Mahrous, E., El Aziz, A., Ebrahim, H., El, A., Rady, A., Nasr, M., & Din, E. L. (2017). Effectiveness of social skills training program on social functioning and severity of symptoms among patients with schizophrenia. *Researchgate.Net*, 6(6), 454–466.
<https://doi.org/10.11648/j.ajns.20170606.13>
- Miller L, O'Connor E, DiPasquale T (1993). Patients' attitudes toward hallucinations. *Am J Psychiatry* 150:584–588.
- McLeod, T., Morris, M., Birchwood, M., & Dovey, A. (2007). Cognitive behavioural therapy group work with voice hearers. Part 2. *British journal of nursing (Mark Allen Publishing)*, 16(5), 292–295.
[tps://doi.org/10.12968/bjon.2007.16.5.23005](https://doi.org/10.12968/bjon.2007.16.5.23005)
- Mousa, A. A., Imam, S. A., & Sharaf, A. Y. (2011). Sharaf The Effect of an Assertiveness Training Program on Assertiveness Skills and Social Interaction Anxiety of Individuals with Schizophrenia. *Journal of American Science*, 7(12), 1545–1003.
<http://www.americanscience.org><http://www.americanscience.org>
- Mueser, K. T., Pratt, S. I., Bartels, S. J., Forester, B., Wolfe, R., & Cather, C. (2010). Neurocognition and social skill in older persons with schizophrenia and major mood disorders: An analysis of gender and diagnosis effects. *Journal of neurolinguistics*, 23(3), 297–317.
<https://doi.org/10.1016/j.jneuroling.2009.08.007>
- Ng, P., Chun, R. W. K., & Tsun, A. (2012). Recovering from hallucinations: a qualitative study of coping with voices hearing of people with schizophrenia in Hong Kong. *The Scientific World Journal*, 2012, 232619.
<https://doi.org/10.1100/2012/232619>
- Shao, X., Liao, Y., Gu, L., Chen, W., & Tang, J. (2021). The Etiology of Auditory Hallucinations in Schizophrenia: From Multidimensional Levels. *Frontiers in neuroscience*, 15, 755870.
<https://doi.org/10.3389/fnins.2021.755870>
- Townsend, M. C. (2011). *Nursing Diagnoses in Psychiatric Nursing: Care Plans and Psychotropic Medications*.
- Videbeck, Shella, L. (2001). *Psychiatric Mental Health Nursing*. 393.
<https://doi.org/10.1017/CBO9781107415324.004>
- Vigo, D., Thornicroft, G., & Atun, R. (2016). Estimating the true global burden of mental illness. *The lancet. Psychiatry*, 3(2), 171–178.
[https://doi.org/10.1016/S2215-0366\(15\)00505-2](https://doi.org/10.1016/S2215-0366(15)00505-2)
- Wang, T. (2019). Social interaction skills and depressive symptoms in people diagnosed with schizophrenia: The mediating role of auditory hallucinations. 1318–1327.
<https://doi.org/10.1111/inm.12643>
- Xu, Y. M., Li, F., Liu, X. B., & Zhong, B. L. (2018). Depressive symptoms in Chinese male inpatients with schizophrenia: Prevalence and clinical correlates. *Psychiatry research*, 264, 380–384.
<https://doi.org/10.1016/j.psychres.2018.04.016>
- Yadav, B. L. (2015). Efficacy of social skills training in schizophrenia: a nursing review. *Current Nursing Journal*, 2(1), 26.
<https://www.lenus.ie/handle/10147/552858>