

## Mindfulness of voices in relation to distress in schizophrenic auditory hallucinating patients.

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### Abstract

**Background and objective:** Hearing voices is a common experience which frequently associated with psychosis with different psychological impact; some voices can be positive and comforting, while others, dominant and distressing. **The aim of this study** was to investigate the relationship between the mindfulness of voices and hearing voices distress in schizophrenic auditory hallucinating patient. **Methods: Design and participants:** A descriptive correlation design was utilized in the current study. A convenient sample of 140 schizophrenic patients with auditory hallucination was recruited. **Setting:** The study was conducted at inpatient psychiatric department of Tanta Mental Health Hospital. **Tools:** socio-demographic and clinical characteristics, Tool II: - Southampton Mindfulness of Voices Questionnaire; The SMVQ is a 16-item questionnaire. Tool III: - The Hamilton Program for Schizophrenia Voices Questionnaire. The HPSVQ is a nine-item questionnaire measuring severity of voices. In this study only one of the nine items were used (relating to voice related distress). Tool IV: - Hospital Anxiety and Depression Scale (HADS); A 14-item self-report measure of anxiety (7 items) and depression (7 items). **Results:** The current study indicated a statistical significant negative correlation between mindfulness of voices and distress from hearing voices in schizophrenic auditory hallucinating patient. **Conclusions:** the present study demonstrate strong correlation between mindfulness of voices and lower levels of distress. **Recommendations:** Results suggest developing mindfulness relating intervention approach for people distressed by their voices. This highlight the therapeutic importance of the mindfulness development techniques in lessening self-focus to finally diminish the hearing voices distress.

**Key words:** Mindfulness, distress, schizophrenia, auditory hallucinating voices.

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### I. Introduction

Psychosis is a widely debated practice, with various interpretations. The most commonly used term is the Diagnostic and Statistical Manual (DSM; American Psychiatric Association, 2013) <sup>(1)</sup> 'definition, psychosis is part of a broad spectrum of mental illnesses known as 'schizophrenia-spectrum disorders.' Psychosis is characterized as a severe alteration of the perception, emotions, mood and actions of a person. <sup>(2)</sup>

Schizophrenia-spectrum disorders are defined as chronic and recurrent lifelong genetic diseases (Schizophrenia Working Group of the Psychiatric Genomics Consortium, 2014) <sup>(3)</sup> and neurochemical imbalances. The medical paradigm describes the presence of 'positive symptoms' such as hearing voices or 'delusions' and 'negative symptoms' such as emotional flattening and low motivation symptoms. <sup>(4-6)</sup>

Hearing voices is a normal phenomenon and frequently related to psychosis. The psychological effect differs from person to person; for some voices, on the other hand, dominant and distressing or can be supportive and soothing. <sup>(7)</sup> Conceptualization of the causes that mediate voice distress is important to support the patients. Distress is characterized by threatening emotions such as fear, shame and rage, which increase the intensity of the voices' strength and hostility. <sup>(8)</sup>

The most psychological therapeutic approach to patients disturbed by hearing voices concentrating on emotional regulation through mindfulness, recognition of present moment, and a non-judgmental psychosis stay move away from concentrating on regulating voices and intrusions. <sup>(9-11)</sup> Instead, Chadwick et al. (2005) <sup>(12)</sup> proposes a 'mindful response' to psychosis, involving clear awareness and acceptance that voices are temporary experience not reflecting the reality. Such adapted cognitive behavioral approaches in Person-based Cognitive Therapy (PBCT), Acceptance and Engagement Therapy (ACT). Such strategies aim to anxiety reduction for people with psychosis by de-centering rather than engulfing their interactions in order to prevent the rumination and conflict that often occurred to deal with psychosis. <sup>(13)</sup>

Mindfulness is a difficult construct to define and there is no agreed-upon definition. A commonly definition by Kabat-Zinn, 1994 <sup>(14)</sup> as "paying attention in a particular way: on purpose, in the present moment,

and non-judgmentally". Furthermore, Shapiro, Carlson, Astin, and Freedman (2006)<sup>(15)</sup> suggest this definition contains three aspects of mindfulness: "on purpose" or intention, (2) "paying attention", and (3) "in a particular way" or attitude. A person might initially practice could be to manage distress associated with symptoms.<sup>(16,17)</sup>

Therefore, one of the most important fields of intervention is the implementation of mindfulness based treatments (MBIs). Mindfulness refers to a state of consciousness characterized by a deliberate and unjudgmental perception of the present-moment experiences (e.g., physical perceptions, emotions, voices).<sup>(18,19)</sup> So, it is possible to increase mindfulness through MBIs and there is evidence that MBIs can be effective for people with mental health condition.<sup>(20,21)</sup>

Relating and responding mindfully to the voices is a way to reduce experienced distress. Relating mindfully to voices like recognition and de-centering' from memory, that is, as temporary mental experiences rather than as realities, preserving and enabling it to pass a non-judgmental stance. This is in contrast to reacting to unpleasant voices, with confrontation, judgment, ruminations, or evasion, which seems to increase distress.<sup>(22)</sup> Practices of mindfulness provide the ability for individuals to perceive distance from their own feelings, emotions and experiences. Thus, one's feelings are perceived in the mind as events rather than inherently reflections of fact or true self-view.' Separation from (internal) events can decouple negative events from the self and become less threatening.<sup>(23,24)</sup>

To summarize, this mindful voices approach involves changing the relationship of individual with their voices and increasing meta-awareness, rather than preventing the voices. Therefore, this study will assess of the associations between mindfulness and their relationship with distress from hearing voices. The findings will add clarity to past literature as well as providing new findings with potential therapeutic interventions recommendations with people experiencing distressing voices.

#### **The study aim:**

This study to investigate the relation between the mindfulness of voices and distress from hearing voices in schizophrenic auditory hallucinating patient.

#### **Research questions:**

Is there a relation between mindfulness of voices and distress in schizophrenic auditory hallucinating patient?

#### **Subjects and Methods**

##### **Research design**

The present study followed a correlation descriptive research design.

##### **Subjects: -**

A convenient sample of 140 patients with schizophrenia will be calculated according to the (Epi- Info software).

##### **Inclusion criteria: -**

- Aged from 18 years and above.
- Both sexes.
- Having a diagnosis of schizophrenia based on DSM5 Criteria (with a duration of illness  $\geq$  2 years)
- Having insight into his/her mental illness.
- Having experience of currently auditory hallucination.

##### **Exclusion criteria: -**

- Patients diagnosed with mental retardation, or substance use disorder or other co-morbid psychiatric disorder.
- Patients with physical disability.

**Setting:** The study was conducted at:

- The inpatient psychiatric department of Tanta mental health hospital, this hospital is affiliated to Ministry of Health with a capacity of 60 beds divided into two wards for male (25 beds) and two wards for female (35 beds).

##### **Tools**

The data of this study was collected using the following tools:

##### **Tool I: - Socio-demographic and clinical data sheet.**

It will be developed by the researcher to elicit socio-demographic data about patients as "age, sex, marital status, level of education, occupation, place of residence, co-habitation and income", as well as patient clinical data as "age at disease onset, duration of the illness, and number of previous psychiatric hospitalizations and insight into mental illness".

**Tool II: - Southampton Mindfulness of Voices Questionnaire (SMVQ; Chadwick et al. 2007).**<sup>(25)</sup>

- The SMVQ is a 16-item questionnaire has a seven-point Likert scale rated from ‘disagree totally’ (0) to agree totally (6), giving a maximum total score of 96. The SMVQ measures how mindfully personrespond to their voices through four components; (1) clarity of awareness of the present moment versus unawareness and lost in the voice; (2) attention with unpleasant sensations versus experiential avoidance; (3) accepting difficult situations of oneself versus situation and self-judgment; and (4) letting go versus struggle and rumination. The SMVQ has been found to be a reliable and valid measure and high internal consistency (Cronbach’s  $\alpha = 0.89$ ).
- The measure has four components of mindfulness: Mindful observation (MO), letting go (LG), absence of aversion (AV), and non-judgment (J). The four are inter-related, mindfulness is defined by the presence of non-judgmental observation with neither aversion, nor clinging. The measure has four items for each subscale. MO has three positive items and one negative, because it is by essence a ‘positive’; aversion, which is the opposite has three negative items to counter balance. J and LG both have two positive and two negative items. The negative items are reversed for scoring. The four subscales have the following items, with positive or negative wording:

	Positive	Negative
MO	1, 7, 9	16
LG	4, 10	2, 13
AV	5	6, 12, 14
J	11, 15	3, 8

**Scoring**

The total measurement has a range of scores from zero to 96 and each of the four subscales has a range from 0 to 24.

**Tool III: - The Hamilton Program for Schizophrenia Voices Questionnaire (HPSVQ; Van Lieshout & Goldberg, 2007).**<sup>(26)</sup>

The HPSVQ is a 9-item questionnaire with a five-point Likert scale rated from 0 to 4, to measure the severity of voices. The items are frequency, negative content, loudness, and distress, impact on self-appraisal, clarity and compliance with voices commands. This scale is measuring the severity of hallucinating voices in schizophrenia based on observations and interviews with patients. The scale has excellent test-retest reliability ( $r = .84$ ) and internal consistency (Cronbach’s  $\alpha = .94$ ).

The HPSVQ measures physical and emotional criteria of voices and had been used to provide information about the patient’s experiences of voice hearing. In this study only one of the nine items were used (voice related distress). The HPSVQ questions had been adapted from another scale called the Auditory Hallucinations Subscale of the Psychotic Symptom Rating Scales (PSYRATS-AH; Haddock et al., 1999).<sup>(27)</sup> The scale gives a total score for severity of scores, this was included in the study alongside the distress from voices items specifically.

**Scoring:**

- 0-7: Absence of to minimal auditory verbal hallucinations
- 8-13: Mild severity of auditory verbal hallucinations
- 14-25: Moderate severity of auditory verbal hallucinations
- <25: Severe auditory verbal hallucinations

**Tool IV: - Hospital Anxiety and Depression Scale (HADS; Zigmond and Snaith, 1983).**<sup>(28)</sup>

A 14-item self-report measure of anxiety (7 items) and depression (7 items). Items are scored 0–3, with higher scores indicating high distress. The HADS has been well established psychometric properties and reliability ( $\alpha$  0.83 for anxiety and 0.82 for depression).

**Scoring:**

Total score: Depression (D) \_\_\_\_\_ Anxiety (A) \_\_\_\_\_

- 0-7 = Normal
- 8-10 = Borderline abnormal (borderline case)
- 11-21 = Abnormal (case)

**II. Methods**

**Throughout the study process the following ethical points were considered:**

- Study procedure was revised and approved by the ethical Committee of the Faculty of Nursing, Tanta University.
- Participation in the study was voluntary and informed consent was obtained from the studied care giver to participate in the study.
- Explanation the purpose of the study and emphasizing the right to withdraw at any point during the study.
- Assuring studied caregiver about their privacy and confidentiality of the obtained data. Orienting the participants about date, time and place of data collection.
- Orienting the participants that collected data will be used only for the purpose of scientific research.

**Actual study**

- A written consent was obtained from each selected caregiver according to their willingness for participation in the study after explaining the aim of the study.
- Establishing rapport and trusting relationship with each participant.
- The form of the study tools was distributed and explained to patients (n = 170) and they were reassured that all information will be confidential and used only for the purpose of the study and they were individually interviewed for keeping their privacy.
- In the actual study, each schizophrenic patient had inclusion criteria was referred to the researcher by the specified psychiatrist.
- Tools of the study were implemented by the researcher using the interview questionnaire sheet.
- Each interview was implemented on an individual basis and lasted for about 50-60 minutes according to participants' attention and willing to cooperate or talk with the researcher.
- Data were collected over a period of about six months.

**Statistical analysis:**

The collected data were organized, tabulated and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 19, SPSS Inc. Chicago, IL, USA). For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, which describe a categorical set of data by frequency, percentage or proportion of each category, comparison between two groups and more was done using Chi-square test ( $\chi^2$ ). For comparison between means of two groups of parametric data of independent samples, student t-test was used. For comparison between means of two related groups (pre and post education program data) of parametric data, paired t-test was used. For comparison between more than two means of parametric data, F value of ANOVA test was calculated.

**III. Results**

**Table (1): Basic characteristics of the studied schizophrenic patients (n=140).**

	N	%
<b>Age</b>		
<20	35	25.0
20-40	28	20.0
40-60	70	50.0
>60	7	5.0
<b>Gender</b>		
Male	63	45.0
Female	77	55.0
<b>marital status</b>		
Married	63	45.0
Unmarried	77	55.0
<b>Occupation status</b>		
Employed	21	15.0

Unemployed	119	85.0
<b>Level of Education</b>		
Illiterate	35	25.0
Read and write	42	30.0
Secondary	49	35.0
University and higher	14	10.0
<b>Family income</b>		
Enough and saving	42	30.0
Just enough	56	40.0
Not enough	42	30.0

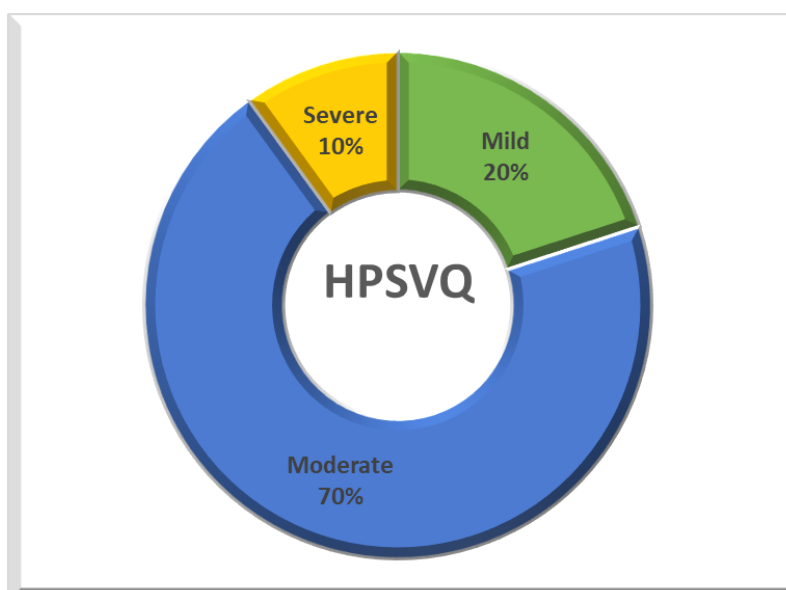
	N	%
<b>Living arrangement</b>		
With family	98	70.0
Dorm/mess	42	30.0
<b>History of cigarette smoking (current or ex-smoker)</b>		
Yes	49	35.0
No	91	65.0
<b>family history of drug addiction</b>		
Yes	35	25.0
No	105	75.0
<b>Residence</b>		
Rural	77	55.0
Urban	63	45.0
<b>History of Other Psychiatric Illness</b>		
Present	28	20.0
Absent	112	80.0
<b>Family History of Other Psychiatric Illness</b>		
Present	63	45.0
Absent	77	55.0
<b>Frequency of hospitalization</b>		
Less than three times	91	65.0
Three times and more	49	35.0
<b>duration of illness</b>		
Less than 5 years	70	50.0
5 years and more	70	50.0
<b>Drug adherence</b>		
Regular	56	40.0
Irregular	84	60.0
<b>Auditory hallucination</b>		

Yes	105	75.0
No	35	25.0
<b>Insight with mental illness</b>		
Yes	49	35.0
Weak	77	55.0
No	14	10.0

**Table (1): shows basic characteristics of the studied patients.** It was observed that the highest frequency of them were (50.0 %) aged more than 40-60 years and 85% of them were unemployed. Majority (75.0%) of them were secondary education. Three quarters of study participants (70%) were living with their family. The majority of study participants were unmarried (55%) and the majority of them declared to have enough income (40%). Also, it was found that (65%) of patients had frequency of hospitalization less than three times in year.

**Table (2) Mean Score of severity of hallucinating voices (distress related to voices)among the studied patients (n=140).**

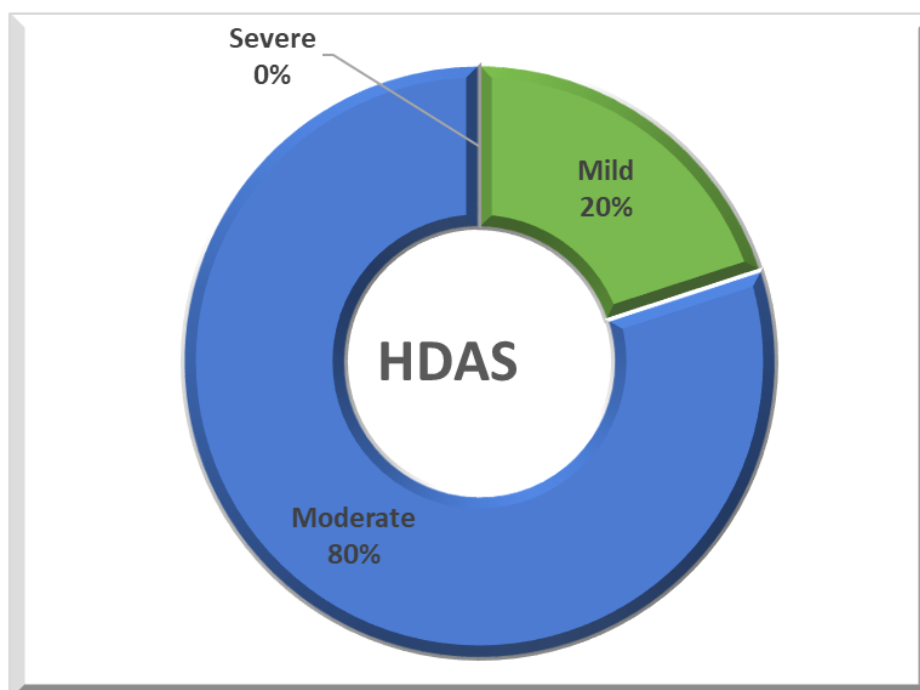
	HPSVQ	
	N	%
<b>Mild</b>	28	20.0
<b>Moderate</b>	98	70.0
<b>Severe</b>	14	10.0
<b>Total</b>	140	100.0
<b>Range</b>	9-37.	
<b>Mean +SD</b>	25.95±6.736	



**Table (2): shows mean scores of severity of hallucinating voicesamong the studied patients.** Regarding the total Score, it was found the majority (70%) of studied patients reported highly moderate Score of severity (25.95 ±6.736). Regarding distress subscale, it was found the majority (70%) of studied patients reported moderate Score of distress related to voices (25.95 ±6.736).

**Table (3) Mean Score of distress among the studied patient (n=140).**

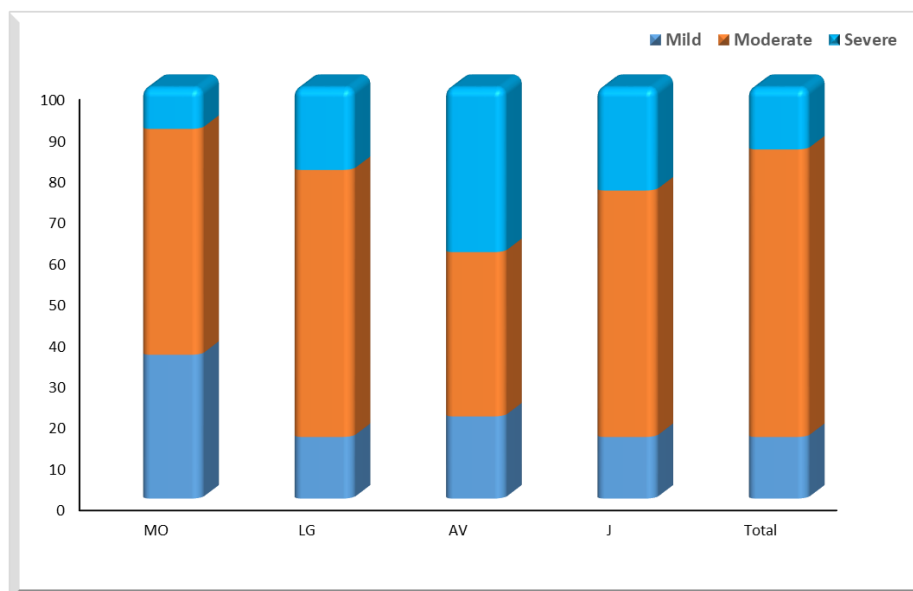
	HDAS	
	N	%
Mild	28	20.0
Moderate	112	80.0
Severe	0	0
Total	140	100.0
Range	18-29.	
Mean+ SD	23.15±2.753	



**Table (3): shows distress mean scores among the studied patients.** Regarding the total Score, it was found the majority (80%) of studied patients reported highly moderate score of distress ( 23.15±2.753) compared to 20% of them reported mild distress and nothing for severe distress.

**Table (4): shows mindful of hallucinating voices mean scores among the studied patients.**

	low		Average		High		Score	
	N	%	N	%	N	%	Range	Mean± SD
MO	49	35.0	77	55.0	14	10.0	3-15.	8.5±2.847
LG	21	15.0	91	65.0	28	20.0	4-18.	12.3±3.405
AV	28	20.0	56	40.0	56	40.0	4-20.	12.85±4.366
J	21	15.0	84	60.0	35	25.0	4-17.	12.15±3.081
SMVQ	21	15.0	98	70.0	21	15.0	15-65.	45.8±11.489



**Table (4):** shows mindful of hallucinating voices scores among the studied patients. Regarding the total Score, it was found the majority (70%) of studied patients reported average score of mindfulness to hallucinating voices (45.8±11.489). Regarding mindfulness subscales, the highest mean score was for absence of aversion (AV) (12.85±4.366) followed by letting go (LG), non-judgment (J), and Mindful observation (MO), (8.5±2.847) respectively.

**Table (5):** the relation between total mindful of voices score and socio-demographic of study group (n=140)

Demographic data		N	SMVQ		F or T	ANOVA or T-test	
			Mean	± SD		test value	P-value
Age	<20	35	50.200	± 5.028	F	30.351	<0.001*
	20-40	28	33.750	± 14.711			
	40-60	70	46.500	± 7.883			
	>60	7	65.000	± 0.000			
Gender	Male	63	45.111	± 13.578	T	-0.640	0.523
	Female	77	46.364	± 9.503			
marital status	Married	63	50.000	± 8.865	T	4.133	<0.001*
	Unmarried	77	42.364	± 12.277			
Occupation status	Employed	21	43.333	± 1.742	T	-2.422	0.017*
	Unemployed	119	46.235	± 12.398			
Level of Education	Illiterate	35	43.400	± 16.900	F	0.885	0.451
	Read and write	42	47.667	± 7.149			
	Secondary	49	46.000	± 9.509			
	University and higher	14	45.500	± 11.934			
Family income	Enough and saving	42	50.000	± 10.355	F	4.504	0.013*
	Just enough	56	43.250	± 8.240			
	Not enough	42	45.000	± 14.887			
Living arrangement	With family	98	46.786	± 13.287	T	2.154	0.033*
	Dorm/mess	42	43.500	± 4.702			
History of cigarette smoking	Yes	49	46.286	± 15.215	T	0.366	0.715
	No	91	45.538	± 8.956			
family history of drug addiction	Yes	35	43.400	± 16.900	T	-1.071	0.290
	No	105	46.600	± 8.971			
Residence	Rural	77	45.636	± 13.272	T	-0.186	0.853
	Urban	63	46.000	± 8.941			
History of Other Psychiatric Illness	Present	28	49.250	± 11.530	T	1.791	0.076
	Absent	112	44.938	± 11.367			



Family History of Other Psychiatric Illness	Present	63	45.000 ± 14.000	T	-0.744	0.458
	Absent	77	46.455 ± 8.976			
Frequency of hospitalization	Less than three times	91	44.154 ± 12.384	T	-2.347	0.020*
	Three times and more	49	48.857 ± 8.947			
duration of illness	Less than 5 years	70	43.800 ± 12.619	T	-0.671	0.503
	5 years and more	70	47.800 ± 9.928			
Drug adherence	Regular	56	45.000 ± 6.382	T	-0.671	0.503
	Irregular	84	46.333 ± 13.905			
	No	35	36.600 ± 11.125			
Insight with mental illness	Yes	49	52.857 ± 5.412	F	17.720	<0.001*
	Weak	77	42.182 ± 13.158			
	No	14	41.000 ± 1.038			

Table (5): the relation between total mindful of voices score and socio-demographic of study group, it was found that there was a significant relation between **total mindful of voices score** and age group (<20), married patients, unemployment, secondary educational level, low income, living alone and having **Insight with mental illness** (p<0.05).

**Table (6): the relation between total distress score and socio-demographic of study group (n=140)**

Demographic data		N	HDAS-14		F or T	ANOVA or T-test		
			Mean	±		SD	test value	P-value
Age	<20	35	25.600	±	1.882	F	3.139	0.027*
	20-40	28	22.000	±	2.160			
	40-60	70	23.200	±	3.273			
	>60	7	25.000	±	0.000			
Gender	Male	63	22.889	±	2.707	T	-1.015	0.312
	Female	77	23.364	±	2.791			
marital status	Married	63	24.333	±	2.646	T	4.977	<0.001*
	Unmarried	77	22.182	±	2.459			
Occupation status	Employed	21	22.000	±	0.837	T	-4.174	<0.001*
	Unemployed	119	23.353	±	2.922			
Level of Education	Illiterate	35	22.800	±	2.069	F	12.721	<0.001*
	Read and write	42	24.833	±	1.695			
	Secondary	49	22.714	±	3.403			
	University and higher	14	20.500	±	0.519			
Family income	Enough and saving	42	22.167	±	1.793	F	4.878	0.009*
	Just enough	56	23.875	±	2.107			
	Not enough	42	23.167	±	3.850			
Living arrangement	With family	98	23.429	±	2.758	T	1.844	0.067
	Dorm/mess	42	22.500	±	2.662			
History of cigarette smoking	Yes	49	22.571	±	2.799	T	-1.840	0.068
	No	91	23.462	±	2.693			
family history of drug addiction	Yes	35	22.800	±	2.069	T	-1.031	0.306
	No	105	23.267	±	2.946			
Residence	Rural	77	23.364	±	3.162	T	1.053	0.294
	Urban	63	22.889	±	2.149			
History of Other Psychiatric Illness	Present	28	23.000	±	2.037	T	-0.321	0.749
	Absent	112	23.188	±	2.912			
Family History of Other Psychiatric Illness	Present	63	21.556	±	2.284	T	-7.259	<0.001*
	Absent	77	24.455	±	2.404			
Frequency of	Less than three times	91	23.538	±	2.544	T	2.310	0.022*

hospitalization	Three times and more	49	22.429 ± 3.000			
duration of illness	Less than 5 years	70	24.000 ± 2.703	T	-3.287	0.001*
	5 years and more	70	22.300 ± 2.550			
Drug adherence	Regular	56	22.250 ± 2.609	T	-3.287	0.001*
	Irregular	84	23.750 ± 2.697			
	No	35	21.600 ± 2.767			
Insight with mental illness	Yes	49	24.429 ± 3.000	F	18.436	<0.001*
	Weak	77	22.909 ± 2.122			
	No	14	20.000 ± 2.075			

**Table (6): The relation between total distress score and socio-demographic of study group (n=140).**

Table (9): the relation between total distress score and socio-demographic of study group, it was found that there is a significant relation between total distress score and age group (<20), married patients, unemployment, read and write educational level, low income, living alone and having Insight with mental illness (p<0.05).

**Table (7) Relationship between participants' mindful of voices (total score) and distress (distress related to voice and general distress) of study group (n=140).**

Correlations			
		SMVQ	HPSVQ
HPSVQ	r	-0.784	
	P-value	<0.001*	
HDAS-14	r	-0.323	0.223
	P-value	<0.001*	0.008*

Table (7): shows correlation between mindful of voices (total scores) and distress (distress related to voice and general distress) among the studied patients. There was negative significant correlation between mindful of voices (total scores) and distress score (distress related to voice  $r = -0.784$  and general distress  $r = -0.323$ ), (p<0.001\*). Regarding correlation between distress related to voice and general distress; a significant positive correlation between them ( $r = 0.223$ ,  $P = 0.008^*$ ).

**Table (8) Relationship between participants' mindful of voices (subscales) and distress (distress related to voice and general distress) of study group (n=140).**

	Correlations			
	HPSVQ		HDAS-14	
	r	P-value	r	P-value
MO	-0.445	<0.001*	-0.324	<0.001*
LG	-0.629	<0.001*	-0.237	0.005*
AV	-0.835	<0.001*	-0.295	<0.001*
J	-0.634	<0.001*	-0.223	0.008*

Table (8): shows correlation between mindful of voices (domains scores) and distress (distress related to voice and general distress) among the studied patients. There was negative significant correlation between mindful of voices (domains) and distress score (distress related to voice and general distress). Regarding correlation between mindful of voices subscales scores; a significant negative correlation between mindful of voices subscales scores namely, Mindful observation (MO), letting go (LG), absence of aversion (AV), and non-judgment (J). ( $-r = 0.324, 0.237, 0.295,$  and  $0.223$  respectively) and distress specified to voices and the total distress (p<0.001\*).

#### IV. Discussion

Auditory verbal hallucinations, (or "voices"), are a characteristic criteria of psychotic conditions such as schizophrenia as well as in other conditions.<sup>(29)</sup> The voice hearing experience may cause distress and disruption. Therefore, therapeutic interventions such as mindfulness approach is called for understanding the voice hearing experience, associations with distress and disturbance,<sup>(30)</sup>

The aim of the present study was to determine relation between mindfulness to voices and distress in patients with auditory hallucination. Regarding the total mindfulness to hallucinating voices Score; it was found the majority of studied patients reported average score of mindfulness to hallucinating voices. Regarding mindfulness subscales, the highest mean score was for absence of aversion (AV) followed by letting go (LG), non-judgment (J), and Mindful observation (MO), respectively. Also, it was found that there was

negative significant correlation between mindfulness to voices (domains and total scores) and distress (distress related to voice and general distress) among the studied patients in Tanta university hospital. Regarding the total Score, it was found the majority of studied patients reported moderate score of distress. Regarding correlation between mindful of voices subscales scores; a significant negative correlation between mindful of voices subscales scores.

There are many explanations, mindfulness to voices are designed to increase non- acceptance of difficult experiences in non-judgmental way. Voice hearers is trying to resist and suppress their voices, which is associated with voice-related distress. Mindfulness is trying to distract attention away from voices and thereby reducing distress as “it helps me focus on something other than the voices so they don’t become as distressing” and mindfulness enhancing the ability of oneself to “step back from thoughts and feelings, become more aware of them” and being “able to absorb it rather than, fighting them”.

Similarly, another study found that mindfulness may decrease anxiety and distress due to the experiences but it will not necessarily decrease the frequency of the hearing voices. Along with those lines, another study stated that reduction the psychotic symptoms distress has been the focus of the mindfulness studies applied in psychosis.<sup>(31)</sup> Also, the results of these studies have reached to: mindfulness to voices might be applied in psychosis, and had a positive effect on the reduction of distress and anxiety, increasing the sense of control over hearing voices experience.<sup>(32, 33)</sup>

Regarding the total Score, it was found the majority of studied patients reported moderate Score of severity. Regarding distress subscale, it was found the majority of studied patients reported moderate Score of distress related to voices. Perona-Garcelán et al. (2014)<sup>(34, 35)</sup> found a negative association between the mindfulness of voices and self-focus in people high risk to hallucinations. That is to say, distress caused by the voices correlate negatively to the mindfulness. Individuals with distressing voices have difficulties in concentrating their attention on the present moment, and not to judge their negative internal experiences. Additionally, the results of another study that is, that mindfulness is negatively associated with self-focused attention and the distress caused by voices. This stresses the therapeutic importance of the use of mindfulness techniques that lessening self-focus to diminish the distress caused by voices.<sup>(36)</sup>

Also, mindfulness of voices was the most strongly associated with lower distress and severity of voices. These results suggest that mindfulness have a role in reduced distress from voices.<sup>(37, 38)</sup> Furthermore, the findings support that mindfulness may be a protective factor against distressing experiences. However, the findings may also found that highly intrusive and distressing voices have difficulties in focusing on the present moment and maintaining a non- judgment towards their experiences.<sup>(39)</sup>

That is come in agreement with the findings of the study demonstrate strong relation between self-compassion, mindfulness of voices, and lower levels of distress and severity. Results suggest that mindful relation to voices might be a useful therapeutic approach for people distressed by their voices.<sup>(40)</sup> Similarly, *Khoury, Lecomte, Comtois, and Nicole (2015)*<sup>(41)</sup> published a small group program for individuals with early psychosis using acceptance, and mindfulness strategies. They found large improvements in the regulation of negative emotions although no influence on positive psychotic symptoms. They are supporting for the development of mindfulness intervention as a treatment option.<sup>(42)</sup>

In another studies on schizophrenic patients experiencing voices, a negative relation between mindfulness and distress. Similarly, *Shawyer et al. (2007)*<sup>(43)</sup> found that acceptance of voices was associated with less harmful compliance with command hallucinations, lower depression, and improvement of quality of life. Similarly, *(Brockman et al., 2014)*<sup>(44)</sup> acceptance of voices were correlated with lower depression and anxiety. In the final study *(Morris et al., 2014)*,<sup>(45)</sup> found a negative association between mindfulness and behavioral and emotional resistance against voices as well as with depression and anxiety.

Additionally, in the same line, the cross-sectional studies found that greater mindfulness and acceptance of voices were correlated with less distress (including voice-related distress, depression, and anxiety) and less disturbance” (including resistance to voices, quality of life, and harmful compliance to voice commands)”. These studies were used measures, both of mindfulness (including mindfulness and acceptance specifically in relation to voices) and distress “(including the effect of voices as well as general measures of depression or anxiety)”. Nonetheless, overall findings are consistent with mindfulness have a positive effect on distress in schizophrenic patients with hearing voices. However, findings are equally consistent with lower levels of distress enhance greater acceptance of voices and enable people to be more mindful.<sup>(19)</sup> Finally, these findings come in agreement with the broader mindfulness literature that mindfulness is associated with reduced distress in response to hearing voices in schizophrenic patient. Therefore, further training people in mindfulness through MBIs might help to alleviate voice-related distress.<sup>(46-48)</sup>

### **Conclusion and recommendations.**

- Regarding the total mindfulness to hallucinating voices Score; it was found the majority of studied patients reported average score of mindfulness to hallucinating voices. Regarding mindfulness subscales, the

highest mean score was for absence of aversion (AV) followed by letting go (LG), non-judgment (J), and Mindful observation (MO), respectively. Also, it was found that there was negative significant correlation between mindfulness to voices (domains and total scores) and distress (distress related to voice and general distress) among the studied patients in Tanta university hospital. Regarding the total Score, it was found the majority of studied patients reported moderate score of distress. Regarding correlation between mindful of voices subscales scores; a significant negative correlation between mindful of voices subscales scores namely, Mindful observation (MO), letting go (LG), absence of aversion (AV), and non-judgment (J) respectively and distress.

- Based on the results of the present study it could be concluded that, the findings of the present study demonstrated strong correlation between mindfulness of voices and lower levels of distress. Results suggest that developing mindful approach to voices may be a useful therapeutic method for people distressed by their voices. Results showed that mindfulness of voices was significantly negatively correlated with distress.

**Based on the results of this study, certain recommendations were suggested:**

- Benefits of mindful relating to voices as therapeutic skills for people experiencing distress by voice hearing. MBIs for distressing voices could potentially benefit through reducing interaction with voices, enabling de-centering from voice hearing experiences and increasing acceptance of voices.
- Mindfulness-based interventions are low-cost, potentially effective strategies for the promotion of wellness, and they can easily be adapted to work with existing evidence-based practices.
- Furthermore, mindfulness strategies should be designed to be incorporated into schizophrenic patients' daily lives for potentially long lasting and self-sustaining benefit.
- The findings provide insight into the specific mechanisms which patient may benefit from targeting self-judgment and encouraging patients to accept and allow voices to pass mindfully. Therefore, these approaches may be particularly useful for people distressed by voices.

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