Psycho- educational Program about Coping Strategies for Reducing Auditory Hallucinations among Schizophrenic Patients

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Abstract:

Auditory hallucinations experienced in psychotic illness contribute significantly to distress and disability. Despite high doses of medication many patients with schizophrenia in inpatient psychiatric units still experience painful auditory hallucinations. Thankfully, many coping strategies that be used to challenge these voices and regain some control. ***The aim of the study*** was to determine the effectiveness of psycho- educational program about coping strategies for reducing auditory hallucinations among schizophrenic patients. ***A quasi experimental design*** was used to achieve the aim of this study. ***Setting:*** Psychiatric Mental Health Hospital at Benha City, Qaliubiya Governorate which is affiliated to the General Secretariat. ***Subject:*** A convenience sample of 50 patients who were hospitalized at above mentioned setting. ***Tools:*** Three tools were used for data collection: (1)Socio-demographic and Clinical data sheet, (2)Auditory Hallucination Rating Scale and (3)a Structured interview schedule of self-management of auditory hallucinations. ***Results:*** There was a highly statistically significant improvement in total score of auditory hallucinations and total score of coping strategies between pre and post implementation of the program. ***Conclusion:*** The psycho educational program was effective for schizophrenic patients which demonstrated decrease in the severity of auditory hallucinations of the studied patients post implementation of the program. ***Recommendations:*** Training the patients to use different coping strategies to deal with auditory hallucinations and prepare them to live in a normal way in society.

Key words: *Auditory hallucinations, Coping strategies, Schizophrenia, Program*

Introduction:

Schizophrenia is a chronic, disabling, psychiatric disorder characterized by a diverse array of symptoms affecting thought, perception, emotion, behavior, speech and motor activity. It is estimated that approximately 1% of the population suffers from schizophrenia globally. It affects about 7 per 1,000 of the adult population, most of them between the ages of 15 and 35 years ***(Chukwujekwu, 2019)***. In Egypt, schizophrenia is the most common variety of psychosis and represents the major bulk of inpatient in our mental hospital. The symptoms of schizophrenia are conventionally divided into positive and negative: positive characteristics include delusions and hallucinations. Negative characteristics are ones that are lacking such as lack of speech (Alogia), lack of goal- directed behavior (Avoliation), lack of feelings (Affective flattening or blunting) and lack of happiness or pleasure (Anhedonia) ***(El Ashry& Abdel Al,2015)***.

Hallucination is one of the main positive symptoms of schizophrenia. It is estimated that 90% of the patients with schizophrenia experience hallucinations ***(Abd ELhay et al., 2017)***. Hallucination has been formally defined as a "sensory experience which occurs in the absence of corresponding external stimulation of the relevant sensory organ, has a sufficient sense of reality to resemble a veridical perception, over which the subject does not feel they have direct and voluntary control, and which occurs in the awake state" . The most common form of hallucinations in psychosis is auditory hallucinations. Auditory hallucinations are the experience of sound in the absence of external perceptual stimuli, are a common symptom of individuals with schizophrenia. Auditory hallucinations are reported by 50% to 70% of patients with schizophrenia ***(Zmigrod et al., 2016)***.

These auditory hallucinations often give 'bad advice', including commanding patients to harm themselves or others. Hearing voices is an internal experience; it cannot be directly

observed. Even though from time to time it is accompanied by observable behaviors such as addressing a hidden speaker, investigation of auditory hallucinations essentially relies on the voice hearer's reports Different investigators have reported that hallucinations made patients feel privileged, praised, or amused. They relieved the patients of their boredom, amused them, acted as a guide, helped in integrating trauma, and strengthened and stimulated them. Nevertheless, in other investigations, voices are perceived as being threatening, accusing, reproving, instructing (usually obscenely), hurting, criticizing, disgracing, and intruding ***(Sayied & Ahmed, 2017)***.

Phenomenological auditory hallucinations are quite heterogeneous in nature: varying from first to second to third person commentary; from brief utterances of simple sounds or single words to full conversations; consisting of voices (the average is three) from familiar, personal and repeated to the unknown; from passive discussion to issuing commands; and from pleasant or compliment to far more commonly unpleasant and distressing. Auditory hallucinations may be experienced as coming through the ears, in the mind or anywhere in external space ***(Navarro, 2016)***.

Auditory hallucinations have been managed more frequently with coping strategies than any other psychotic symptoms. Coping strategies for dealing with hallucinations in schizophrenia have been studied along with other symptoms and also individually. Approximately 60% to 90% of patients with schizophrenia who hallucinate can clearly delineate the use of individual coping strategies. The commonly used strategies to manage hallucinations have been divided into 3 main categories: (a) Behavioral changes (e.g. involving in pleasurable activities), change in posture (lie down or walk) and interpersonal contact (withdrawing or engaging), (b) Physiological changes in physiological arousal (relaxation or increasing arousal by exercising), and (c) cognitive strategies (accepting or suppression) ***(Sharma & Mahindru, 2017)***.

These coping strategies help hallucinating patient follow regular daily activities more effectively as well as assist them not using maladaptive ways to deal with auditory hallucinations. The coping approaches have been exposed to be an effective therapy and can significantly decrease the negative features of this hurting indicator, divert patients' attention away from the voices, help patients regain some control over hallucinated voices, help patients follow regular daily activities more effectively as well as assist them not to use maladaptive manners to cope with auditory hallucinations ***(El-Azzab, 2019)***.

Psychiatric nurses have several responsibilities in dealing with hallucinations. The nurse must observe certain signs, such as taking a listening, position, uninterested laughter, talking to himself, and blocks in thinking, lack of attention and distraction. Nurses' obligation shows an attitude of appreciation to help the patient participate in the content of the hallucination. The nurses can play a crucial role as trusted persons with whom the patients can discuss and validate their perceptions. Establishing clear, consistent open communication and providing a safe therapeutic environment also play an important role in reinforcing coping strategies and maximizing a person's sense of control over their hallucinatory experience ***(El-Refaay, 2015)***.

Significance of the problem:

Seventy five percentages of schizophrenic patients usually have auditory hallucinations. Auditory hallucinations are pervasive in people with schizophrenia. Despite the improvement in neuroleptic medications which have led to improvement in the management of voices as psychotic symptoms, (25%-50%) of patients with schizophrenia still experience distressing auditory hallucinations and distressing symptoms are usually the cause for seeking help. Fortunately, there are coping strategies that help hallucinating patients to challenge the voices, assist those using adaptive ways to deal with auditory hallucinations and thus regain some control. In addition, the nurse can empower patients to take care of themselves and enhance patients' confidence in their abilities to manage their auditory hallucinations by teaching them these strategies ***(Abd ELhay et al., 2017)***. Therefore, this study aims to determine the

effectiveness of psycho educational program about coping strategies for reducing auditory hallucinations among schizophrenic patients.

Operational definition:

Coping strategies: refer to a wide range of methods that either constructive or of limited value which people employ to master, tolerate, reduce and adapt with stressful or threatening situations. These strategies are divided into three main categories: behavioral strategies, physiological and cognitive strategies.

This study aimed to:

Determine the effectiveness of psycho- educational program about coping strategies for reducing auditory hallucinations among schizophrenic patients.

Research Hypothesis:-

- Coping strategies for auditory hallucinations of schizophrenic patients will show enhancement in their recovery.

- Severity of auditory hallucinations will be decreased after the implementation of psycho- educational program among schizophrenic patients.

Methodology

Research design:-

A quasi experimental design was utilized to fulfill the aim of this study.

Setting:-

The study was carried out at the inpatient psychiatric departments of Mental Health Hospital in Benha City, Qaliubiya Governorate which is affiliated to the General Secretariat. It has 6 departments (5 males and 1 female); with a capacity of 211 beds. The hospital provides care for patients diagnosed with acute and chronic mental illnesses who need institutional care. Enrolled in, addiction department that serves addict patients. The hospital works 7 days a week/24hrs. In addition to, outpatient's clinics for discovering new cases and follow up.

Sampling:

A convenience sample of 50 patients diagnosed by psychiatric disorder in duration of 6 months and the patients met the following inclusion criteria:

- diagnosed as schizophrenia.
- Age above 18 years.
- Both sexes.
- Having auditory hallucinations.
- Able to communicate relevantly and willing and agreeing to participate in the study.
- Free from any type of substance abuse.

Tools for data collection:-

Tool I: Structured interview questionnaire:

Structured interview questionnaire sheet developed by the researcher, it consisted of two parts:

Part A: Socio-demographic data: to elicit data about the patients' characteristics such as age, sex, marital status, level of education, occupation, residence.

Part B: Clinical data: such as age of onset of illness, Schizophrenia type, number of previous hospitalization, length of stay of hospitalization, type of Admission, medications taken by the patient, regularity in taking psychotropic drugs, undergoing to other therapeutic programs beside medications.

Tool II: Auditory Hallucinations Rating Scale:

A scale developed by ***Hadook, (1994)***. It used to measure parameters of hallucinations. It consisted of 11 items (frequency, duration, location, control , loudness of auditory hallucinations, origin of voice, disruption of daily life, amount of distress due to auditory

hallucinations, intensity of distress due to auditory hallucinations, amount of negative content and degree of negative content).

Tool III: Structured Interview Schedule of Self-management of Auditory Hallucination:

This tool developed by ***Abd Elhay, (2012).*** It used to assess self-management of auditory hallucinations. It included 36 items of coping strategies that are divided into three categories:

a) Physiological category: which included 7 strategies either to reduce patient's arousal that is divided into three negative strategies such as sleeping, taking extra medication, listening to soft music and one positive strategy such as lying down /rest and strategies to increase patient's arousal which include one negative strategy such as smoking cigarette and two positive strategies such as doing exercise and walk.

b) Cognitive category: which included 11 strategies that are divided into three negative strategies such as reacting/talking with the voices, listening to voices, shooting and screaming at the voices and eight positive strategies such as asking self to calm down, ignoring them, clarifying voices and saying to oneself it isn't true, saying" go away" and "stop to voices", thinking in another thing except voice, reading aloud, selective listening to voices, repeating short sentences and /or counting numbers subvocally.

c) Behavioral category: which included 18 strategies that are divided into 7 negative strategies such as isolating oneself, going to crowded places, crying, masturbating, hurting oneself, eating and do as the voices say and 11 positive strategies such as blocking ears, watching television with loud voices, seeking help from nurses and doctors, talking to others, praying, singing, drawing, playing cards, doing any tasks, changing one's posture and leaving places.

Methods:

Preparatory Phase:-

This phase included reviewing of relevant literature and different studies related to the topic of research, using textbooks, articles, magazines, periodicals and internet search was done to get a clear picture of all aspects related to the research topic.

Content Validity:

Validity of tools was done by a group of five experts specialized in the Psychiatric Nursing Field to check the relevancy, clarity, comprehensiveness, and applicability of the questions. According to their opinions, modifications were done and the final form was developed. The modification were (modify some words to give the right meaning of the phrase.

Reliability of the tools:

The reliability of the developed tools II&III which yielded values of r=0.9421–r= 0.9325 respectively ***(El-Refaay, 2015).***

Administrative approval:

A written letter was issued from the Dean of Faculty of Nursing, Benha University to obtain the approval for data collection from the Psychiatric Mental Hospital and then from the General Secrtraite. The objectives and the nature of the study were explained and then it was possible to carry out the study with minimum resistance.

Ethical consideration:

Before conducting the study, patients were assured about confidentiality and anonymity of their attained information. Patients were informed that they could refuse to participate in the study, or withdraw from it at any time and then acceptance of them to participate in the study was taken through written consent.

Pilot study:-

After the tools have been designed, they were tested through a pilot study, which was done before embarking on the field work to check the clarity and feasibility of designed tools and to estimate the time needed to complete its items. It was carried out on 10% (5) schizophrenic patients, who were included in the final study sample. According to the result of the pilot study, no modifications were required.

Field work:

The actual study was divided into four phases:

Phase (1) assessment Phase:

The researcher reviewed all schizophrenic inpatients' records in order to choose those who meet inclusion criteria. Before starting the interview, a written consent was obtained from each patient after the explanation of the study's purpose. Patients were interviewed using socio-demographic and clinical data sheet, Auditory Hallucination Rating scale and the Structured Interview schedule of self-management of auditory hallucinations as pre-test. The interviewing schedules were filled by the researcher for each patient (pre-test) and each interview lasted 20-30minute depending on the patient's capacity to respond. This process (pre-test) took one month.

Phase (2) planning phase:-

Based on the results obtained from the previous phase (phase 1), and review of the related literature, the psycho-educational program content was developed. The content stressed mainly on coping strategies (physiological, cognitive and behavioral) and application of it to reduce auditory hallucinations among schizophrenic patients.

Phase (3) implementation Phase:-

The psycho-educational program was implemented to all the studied schizophrenic patients who were classified into small groups (5groups); each subgroup was composed of 10 patients. The program was carried out in the form of sessions; the number of sessions were 12 sessions and these sessions were scheduled as three times a week (three sessions per/week) for 60 -90 min and 10 minutes for break. Each group attended a total 12 sessions. The sessions of the psycho educational program were carried out from the beginning of January 2019 to the end of July 2019.

The content of the program was implemented in the following sequences:

Session (1): Introductory session **(**acquaintance between group members and patients)
Session (2): Physiological coping strategies.
Session (3): Physical exercises.
Session (4): Cognitive coping strategies.
Session (5): Demanding "stop" or ignoring/ not following the ordering voices techniques.
Session (6): "reading aloud", "sub-vocally repeat short sentence and /or counting numbers techniques.
Session (7): Behavioral coping strategies.
Session (8): "talking with others" technique.
Session (9): Participation of the patients in group activities.
Session (10): Deep breathing exercises.
Session (11): "progressive relaxation technique".
Session (12): Ending of the Program (last session)

Phase (4) Evaluation Phase:

This phase concerned with the evaluation of the implemented program immediately after the program implementation by reapplying of Auditory Hallucination Rating Scale and Structured interview schedule of self - management of auditory hallucinations (post test). Evaluation of the program itself regarding time, content, teaching methods and media for each session.

Statistical Analysis:-

Analysis of data was carried out and the collected data were organized, coded, computerized and tabulated and analyzed by using the Statistical Package for Social Science (SPSS) programs. Data were presented using descriptive statistics in the form of frequencies and percentage for qualitative variables and mean and standard deviation for quantitative variables. Qualitative variables were compared using Chi-square test **(x^2)**.Quantitative data were compared using T or F test. A significant level value was considered when p-value <0.05 and a highly significant level value was considered when p-value <0.001, while p-value of >0.05 indicated no significant result.

Limitations of the study:

-The limitation of the duration of patient`s hospitalization and allows voluntary admitted patients to be released at any time as they want.

-Lack of privacy during implementation of the program. There was no special place for conducting the program; hence the researcher conducted the program in the in-patient wards. Because of this, the researcher was exposed to interruptions by other patients, that lead to increased distractability of the studied patients and sometimes the researcher was obliged to repeat or even strat again.

-Some patients were aggressive due to réponse to auditory hallucinations.

RESULTS:

Table (1): shows that less than half (40%) of studied patients ranged between 40-<50 year with mean 39.5 ± 8.75 year. Regarding to sex, more than three quarters (76%) of them were male. Moreover, more than half (54%) of them were single and more than two thirds (62%) were unemployed. Regarding to educational level, one third (30%) of them had secondary education. Concerned to residence, more than three quarters of them (76%) were from rural areas.

Table (2): shows that, regarding to date of onset of the disease, less than half (42%) of studied patients were <5 year. Related to schizophrenia type, less than half of them (48%) suffered from chronic schizophrenia. Moreover, more than half of them (54%) admitted in psychiatric hospitals more three times and less than half of them (48%) their stay in hospital ranged between 3-<6 months. Regarding to mode of admission to the hospital, more than two thirds (62%) of studied patients were voluntary. Related to medications taken by the patient, half (50%) of them take Haldol. Also, more than two thirds (62%) of them take psychotropic drugs regularly and all of them (100%) didn't undergo to other therapeutic programs beside medications.

Table (3): shows that, there was a marked improvement in total auditory hallucinations characteristics of studied patients post implementation of psycho educational program with highly statistically significant difference at (P= < 0.01) between pre and post implementation of psycho educational program.

Table (4): shows that, there was a marked improvement in total coping strategies of auditory hallucinations of studied patients post implementation of psycho educational program with highly statistically significant difference at (P= < 0.01) between pre and post implementation of psycho- educational program.

Table (5): shows that, there was highly statistically significant relation between total auditory hallucinations characteristics of studied patients and their sex at (P= < 0.01). Moreover, there was statistically significant relation between total auditory hallucinations characteristics of studied patients and age, marital status and education level at (p= < 0.05). While, there was statistically insignificant relation between total auditory hallucinations characteristics of studied patients and occupation and residence at (p= > 0.05).

Table (6): shows that, there was highly statistically significant relation between total coping strategies of auditory hallucinations of studied patients and their sex at (P= < 0.01). Moreover, there was statistically significant relation between total coping strategies of auditory hallucinations of studied patients and marital status and education level at (p= < 0.05). While, there was statistically insignificant relation between total coping strategies of auditory hallucinations of studied patients and age, occupation and residence at (p= > 0.05).

Table (7): illustrates that, there was a positive correlation between total auditory hallucinations characteristics of studied patients and their total coping strategies of auditory hallucinations at post psycho educational program.

Table (1): Distribution of studied patients according to their socio-demographic Characteristics

Socio-demographic Characteristics	**Studied patients**	
	No (n=50)	**%**
Age (Year)		
20-<30	8	16
30-<40	17	34
40-<50	20	40
≥50	5	10
Mean± S.D	**39.5 ± 8.75**	
Sex		
Male	38	76
Female	12	24
Marital status		
Single	27	54
Married	12	24
Divorced	8	16
Widow	3	6
Educational level		
Read and write	14	28
Primary education	10	20
Secondary education	15	30
University education	7	14
Other	4	8
Occupation		
Employed	19	38
Unemployed	31	62
Residence		
Rural	38	76
Urban	12	24

Table (2): Distribution of studied patients according to their clinical Characteristics

Clinical Characteristics	The studied patients	
	No (n=50)	%
Date of onset of the disease (Year)		
<5	21	42
5-<10	16	32
10-<20	10	20
20-<30	2	4
≥30	1	2
Schizophrenia type		
Chronic	24	48
Paranoid	18	36
Undifferentiated	8	16
Frequency of admissions in psychiatric hospitals		
Once	7	14
Twice	14	28
3 times	2	4
More	27	54
Length of stay in hospital (Month)		
<3	8	16
3-<6	24	48
6-<12	11	22
≥12	7	14
Admission to the hospital		
Voluntary	31	62
Involuntary	19	38
Medications taken by the patient		
Haldol	25	50
Olapex	17	34
Psychodal	21	42
Clozapex	7	14
Neurazine	14	28
Clopixol	2	4
Do you take psychotropic drugs regularly?		
Yes	31	62
No	19	38
Do you undergo to other therapeutic programs beside medications?		
Yes	0	0.0
No	50	100

Table (3): Comparison between studied patients at pre and post psycho educational program regarding to total auditory hallucinations characteristics

Total auditory hallucinations characteristics	Pre psycho-educational program		Post psycho-educational program		T.test	p-value
	No(n=50)	%	No(n=50)	%		
Mild	20	40	40	80	**9.804**	**.000****
Moderate	26	52	9	18		
Sever	4	8	1	2		

Table (4): Comparison between studied patients at pre and post psycho educational program regarding to their coping strategies of auditory hallucinations

coping strategies	Pre psycho- educational program						Post psycho- educational program						T.test	p-value
	Unsuccessful coping		Partial successful coping		Successful coping		Unsuccessful coping		Partial successful coping		Successful coping			
	No	%	No	%	No	%	No	%	No	%	No	%		
Physiological Coping Strategies	28	56	22	44	0	0.0	9	18	31	62	10	20	8.643	.000*
Cognitive Coping Strategies	41	82	9	18	0	0.0	14	28	24	48	12	24	12.025	.000*
Behavioral Coping Strategies	37	74	13	26	0	0.0	4	8	40	80	6	12	43.632	.000*
Total	**43**	**86**	**7**	**14**	**0**	**0.0**	**10**	**20**	**37**	**74**	**3**	**6**	**15.514**	**.000***

Table (5): Relation between socio-demographic characteristics of studied patients and their total auditory hallucinations characteristics at post psycho educational program

Socio-demographic characteristics		Total Auditory Hallucinations characteristics						X2	P-Value
		Mild (n=40)		Moderate (n=9)		Severe (n=1)			
		No	%	No	%	No	%		
Age (year)	20-<30	8	20	0	0.0	0	0.0	11.23	.021*
	30-<40	15	37.5	2	22.2	0	0.0		
	40-<50	17	42.5	2	22.2	1	100		
	≥50	0	0.0	5	55.6	0	0.0		

Sex	Male	37	92.5	1	11.1	0	0.0	15.98	.001**
	Female	3	7.5	8	88.9	1	100		
Marital status	Single	27	67.5	0	0.0	0	0.0	12.27	.019*
	Married	10	25	2	22.2	0	0.0		
	Divorced	3	7.5	5	55.6	0	0.0		
	Widow	0	0.0	2	22.2	1	100		
Education level	Read and write	5	12.5	8	88.9	1	100	10.58	.031*
	Primary education	9	22.5	1	11.1	0	0.0		
	Secondary education	15	37.5	0	0.0	0	0.0		
	University education	7	17.5	0	0.0	0	0.0		
	Other	4	10	0	0.0	0	0.0		
Occupation	Employed	13	32.5	6	66.7	0	0.0	4.226	0.118
	Unemployed	27	67.5	3	33.3	1	100		
Residence	Rural	30	75	7	77.8	1	100	1.230	0.315
	Urban	10	25	2	22.2	0	0.0		

**significant at p ‹ 0.05. **highly significant at p ‹ 0.01.*

Table (6): Relation between socio-demographic characteristics of studied patients and their total coping strategies of auditory hallucinations at post psycho- educational program

Socio-demographic characteristics		**Total coping strategies of auditory hallucination**						**X2**	**P-Value**
		Unsuccessful coping (n=10)		**Partial successful coping (n=37)**		**Successful coping (n=3)**			
		No	**%**	**No**	**%**	**No**	**%**		
Age (year)	20-<30	0	0.0	7	18.9	1	33.3	7.394	0.286
	30-<40	4	40	12	32.5	1	33.4		
	40-<50	6	60	14	37.8	0	0.0		
	≥50	0	0.0	4	10.8	1	33.3		
Sex	Male	1	10	34	91.9	3	100	16.18	.000**
	Female	9	90	3	8.1	0	0.0		
Marital status	Single	1	10	24	64.9	2	66.7	15.111	0.01*
	Married	1	10	10	27	1	33.3		
	Divorced	5	50	3	8.1	0	0.0		
	Widow	3	30	0	0.0	0	0.0		
Education level	Read and write	8	80	6	16.2	0	0.0	12.18	.039*
	Primary education	1	10	9	24.3	0	0.0		
	Secondary education	0	0.0	14	37.8	1	33.3		
	University education	0	0.0	5	13.6	2	66.7		

	Other	1	10	3	8.1	0	0.0		
Occupation	Employed	2	20	15	40.5	2	66.7	2.226	0.283
	Unemployed	8	80	22	59.5	1	33.3		
Residence	Rural	8	80	27	73	3	100	1.221	0.505
	Urban	2	20	10	27	0	0.0		

**significant at p ‹ 0.05. **highly significant at p ‹ 0.01.*

Table (٧): Correlation between total auditory hallucinations characteristics of studied patients and their total coping strategies of auditory hallucinations at post psycho educational program

Coping strategies	**Total auditory hallucinations characteristics**	
	r	P- value
Total at post psycho educational program.	0.310	.000**

(*) Statistically significant at p<0.05.

Discussion:

Regarding the socio-demographic characteristics of studied patients, the present study revealed that the ages of studied patients were ranged between 40- <50 years old. However, new epidemiological data indicate that nearly a quarter of first onsets of auditory hallucinations occur after the age of 40 years ***McGrath et al., (2017).*** This may be due to advancing age is associated with a host of risk factors for hallucinations, including impairments in sensory, cognitive, and social functioning, so the rate of hallucinations might be expected to increase. This result was contradicting with a study by ***El Refaay (2015)*** who revealed that more than half of the studied patient's age was from 20 to less than 35 years. Also, a study by ***Abd ELhay (2017)*** who found that more than two third of the studied patients were in the age group ranging from 25 to less than 45 years.

As regard the sex, the present study showed that, more than three quarters of studied patients were male. . Auditory hallucinations and schizophrenia are common in males this may be due to the underlying protective effect of women estrogen. This result was supported by a study conducted by ***El-Sayes (2015)*** who revealed that more two thirds of the studied patients were male. In addition, ***Sayied and Ahmed (2017)*** reported that two thirds of the studied patients were male.

Concerning marital status, the present study indicated that, more than half of studied patients were single. This may be due to early onset of disease and the patient's deficits when interacting and coping with their human, social and physical environment and the complexity of modern society. Or this may be due to that schizophrenic patients may experience difficulties in social relationship due to societal stigmatization that lead to reduced opportunities for socialization and marriage. This result was supported by ***Ebrahim (2015)*** who reported that the majority of studied patients had higher rate of never married and lower rate of marriage. On the contrary, ***Sayied and Ahmed (2017)*** who disagreed with this finding stated that most of the patients were married.

As regard education level, the current study showed that one third of studied patients had secondary education. This may be due to the disturbances result from schizophrenia on the

cognitive skills, these disturbances may affect everything from speech, affect, and perception to psychomotor behavior, interpersonal relationships, and sense of self especially if it occurs in the adolescence stage where these skills under development which hinder him from accomplishing his\ her education. This result was congruent with a study by ***Mohamed (2012)*** who reported that more than one third of studied patients had secondary education. This result was contradicted with ***El-Azzab (2019)*** who revealed that more than one third of studied patients were illiterate.

Regarding the clinical characteristics of studied patients, the present study showed that more than one third of studied patients the date of onset of their disease were 5- < 10years. This result was congruent with a study by ***Mohamed (2012)*** who reported that one third of studied patients had duration of illness ranged from 5 to less than 10 years. This result was contradicted with ***Abd ELhay (2017)*** who reported that more than one third of the patient's age of onset of the disease were from 20 to less than 25 years.

Concerning frequency of admission, this study revealed that more than half of studied patients were admitted to the hospital more three times. This may be due to inability of patient`s family to cope effectively with the patient or they cannot tolerate the finance of his\ her medication or due to stigma associated with mental illness. Or this may be due to that the schizophrenia is episodic and patients' ability to adjust with stressors is decreased, which lead to re hospitalization. This result was consistent with ***Ramadan (2012)*** who reported that around three quarters of patients were admitted to the hospital 4 times or more. On the contrary, ***Mohamed (2012)*** reported that nearly half of the patients were admitted to the hospital one time.

The present study illustrated that, less than half of studied patients had a frequency of auditory hallucinations of once per an hour before psycho-educational program, while less than half of them had a frequency of auditory hallucinations of once per a week and one third of them a frequency of auditory hallucinations of once per a day after psycho-educational program. This result was in parallel with ***El-Sayes (2015)*** who reported that more than half of studied patients had a frequency of auditory hallucinations of once per an hour before intervention. This result was contradicted with ***El Ashry & Abdel Al (2015)*** who reported that more than two-thirds of studied sample had a frequency of auditory hallucinations once/day or more. In addition, ***Brown (2017)*** indicated that a large majority of individuals experiencing auditory hallucinations reported the frequency as several times per day.

In the present study, it was observed that there was a highly significant improvement between pre and post implementation of the program in the patients' characteristics of auditory hallucinations as frequency, duration, location, control & loudness of auditory hallucinations, origin of voice, disruption of daily life, amount of distress, intensity of distress due to the auditory hallucinations amount and degree of negative content of voices. This improvement may be due to teaching patients using cognitive and behavioral strategies that increased patients' involvement in assessing their symptoms, practicing management skill and evaluating the outcome from their perspective with the researcher.

This means that the coping strategies had effective to manage and reduce severity of auditory hallucinations and patients have participated in an effective manner. This result was in same line with the experimental study, that evaluates the effects of a symptom management program on auditory hallucinations, was carried out by ***Kanungpairn (2017)*** who discovered that the patients who were participating in the program experienced a meaningfully diminished in global aspects and severity of auditory hallucinations

Concerning physiological coping strategies in the present study, this result noticed that more than two thirds of studied patients used "sleep" as a way for managing voices before psycho-educational program. While, after the program more than two thirds of them not used it. The patients reported that they use "sleep" as a way to escape from voices. This result was in agreement with ***Hayashi et al., (2014); So&Wong (2018)*** who indicated that a large number of subjects use "Falling asleep" as a way for managing voices and they reported that it is completely successful technique. On the contrary, ***Sayied & Ahmed (2017)*** who

disagreed with this result stated that the majority of studied patients not used "sleep" before intervention and half of them used it after intervention and the patients reported that sleep is helping them to some extent.

The present study results showed that, more than half of studied patients used "smoking cigarettes" as a way for managing voices before psycho-educational program. While, after the program nearly half of them not used it. In the present study the patient reported that when "smoke cigarettes" the voices intensity decreased. This finding may be due to that nicotine which present in cigarettes regulate a dysfunctional mesolimbic dopamine system and it may increase dopamine release in the prefrontal cortex and alleviate positive and negative symptoms. This finding was explained by ***Abd El-Hay (2012)*** who illustrated that patients tend to use "smoke cigarettes" as way to manage auditory hallucinations and around two third of them reported it is effective and helping them a lot. In contrast to that ***Tsai & Ku (2016)*** who found that a little number of participants used "smoking cigarettes" for managing auditory hallucinations.

Concerning "walk" in the present study, the result reported that less than half of studied patients used "walk" as a way for managing voices before psycho-educational program. While, after the program the majority of them used it. This results was in parallel ***with Abd El-Hay (2012)*** who stated that the majority of participants used " walk" as way to manage auditory hallucinations, and more than two thirds of them reported that it is effective and helping them a lot. This finding was contradicted by, ***Tsai & Ku (2016)*** who mentioned that a little number of the studied patients used "walk" as a way for managing voices.

In the present study, it was observed that there was a highly significant improvement between pre and post implementation of the program in the patients' physiological coping strategies. This result revealed that the most of studied patients used laydown/rest do exercise, walk and half of them reported that these strategies help them to some extent. This improvement may be due to that the researcher explained to the patients these strategies and its advantages as it may be that the distraction provided by the activity is the key factor in helping the person to cope with their voices and making them feel more relax.

It was noticed that after psyche-educational program, there was decrease in the number of patients used smoke cigarette, sleeping and ask doctor for extra medications. This may be due to motivation and encouraging of the patients by the researcher to decrease the use of these strategies through verbal praise and material reward .These results were supported by a study by ***Bagaul (2012)*** who revealed that after application of coping strategies program with schizophrenic patients, 22% of them used sleeping, 32% of them used asking doctors for extra medications and 38% used smoking to cope with auditory hallucinations. While, ***Fallon (2013)*** reported that 53% of the schizophrenic patients ask the doctors for extra medications to manage auditory hallucinations.

In the present study, it was observed that there was a highly significant improvement between pre and post implementation of the program in the patients' cognitive coping strategies. This result noticed that nearly three quarters of studied patients used "react/ talk to voices" before psycho-educational program as a way for managing voices and nearly half of them reported it is helping them a lot. This may be due to that patients think that react/ talk to voices help them to decrease fear and anxiety and keeps voices under control.

This result was in accordance with ***Farhall et al., (2012)*** who illustrated that the most of studied schizophrenic patients "react/ talk to voices" to manage voices and more than half of them reported it is effective and helping them a lot. After the program more than half of studied patients not used "react/ talk to voices". This result was consistent with a study by ***Sayied & Ahmed (2017)*** who reported that the majority of studied patients not used "react/ talk to voices" after implementation of the program.

Concerning" listen to voices" in the present study, this result showed that nearly three quarters of studied patients used "listen to voices" before psycho-educational program as a way for managing voices. This may be due to that listening to voices is a common response and the patient has developed the habit of listening to voices often unconsciously. This result

was confirmed by ***El Ashry & Abdel Al (2015)*** who revealed that the majority of patients used "listen to voices" a way for managing voices. On the contrary, ***El-Sayes (2015)*** reported that two thirds of the patients used "listen to voices" before educational program. Also, this result disagreed with ***Laroi (2012)*** who clarified that indulging in the content of hallucination does not generate more control over the experiences. It was noticed that after psycho-educational program more than two thirds of studied patients not used "listen to voices". This result supported by ***El Refaay (2015)*** who reported that more than three quarters of studied patients not used "listen to voices" after the educational program.

It was noticed that after psycho-educational program, the majority of studied patients used "ignore the voices and think in another thing except voice" and more than half of them reported it is effective and helping them to some extent . This may be due to that encouraging of the patients by the researcher to use this strategy as is effective for distraction away the voices. This result was in same line with ***Jessop et al., (2015)*** who revealed that the majority of the subjects ignore the voices and think in another thing except voice. Also, ***Ng et al., (2013)*** reported that the majority of the subjects with schizophrenia used "ignoring" to cope with hallucinations. According to ***Zou et al., (2013)*** the most commonly used strategy by the patients was ignoring the voices. While, ***Beck &Rector (2013)*** mentioned that roughly two thirds of the patients were not successful in their efforts to ignore the voices.

It was observed that the majority of the studied patients "clarify voices and say to oneself it is not true" after psycho-educational program and more than half of them reported that this strategy helping them to some extent. This may be due to that this strategy when used by the patients help them to shift attention away from voices. This result was consistent with ***Sayied & Ahmed (2017)*** who reported that the most of patients used "clarify voices and say to one self it is not true as a way for managing voices. This result was contradicted with a study by ***Naoki et al., (2015)*** who revealed that less than half of studied patients used clarify voices and say to one self it is not true.

It was noticed that after psycho-educational program, the most of studied patients used "reading aloud, repeat short sentences and count numbers sub vocally". This may be due to applying of this strategy to the patients by the researcher during implementation of the program and teach them how to practice it and allowing group discussion. In addition, the researcher discuss to the patients that reading aloud is a simple strategy which provide an attention activity and also repeating short sentences and/ count numbers sub vocally is successful strategy in reducing voices because it works by blocking auditory input to the non dominant hemisphere where the act of talking somehow prevents the voices in the head being heard.

In the present study, it was observed that there was a highly significant improvement between pre and post implementation of the program in the patients' behavioral coping strategies. The behavioral coping strategies were used as the most common strategies by the studied subjects to deal with auditory hallucinations. This result noticed that after psycho-educational program the most of patients used "watching television, pray, talk with some friends, seek help from doctor or nurse and place cotton in ear". This may be due to that encouraging the patients by the researcher to use these strategies as it is very helpful as a way for dealing with voices.

Concerning "watching television", this result was in the same line with a study of ***So & Wong (2018)*** who showed that the most of patients used "watching television" as a way to manage their voices. In addition, ***Carter et al., (2016)*** found that the majority of schizophrenic patients used watching television with loud voices as a way to manage auditory hallucinations. This may be due to that watching television at a high volume help to reduce hallucinatory activity and increase the feeling of powerlessness of patients. On the contrary, ***El Refaay (2015)*** reported that a minority of patients watch television with loud voices. Also, ***Nayani & David (2016)*** found that the use of watching television as coping strategies was often cited as making hallucinations worse.

Concerning "prayer", this result was confirmed by study ***Lee et al., (2014)*** who stated that the most commonly used coping commonly used coping strategy was "prayer". In this regard, ***So & Wong (2018)*** supported this results which indicated that that less than half of the participants used "Prayer" for managing auditory hallucinations. This may be due to that patients believe that their voice hearing was related to religion and thought that praying can purify their minds, give them peace and cure the illness.

In relation to "talk with some friends", this result was consistent with a study conducted by ***El-Sayes (2015)*** who reported that the majority of patients used talk with someone/friends. This may be due to encouraging the patients by the researcher to use this strategy in the ward with other patients and teach them how to use it. This was successful because the verbal interaction reduced auditory hallucinations in patients with schizophrenia where engaging in conversation through verbalization on hallucinations could serve as a protective factor for psychological dysfunctioning and helps suppress the subvocal speech and to reduce the severity of hallucinations. Increasing social contacts is distracting oneself from the content of distressing hallucinations and disrupting the subvocal activity concomitant with hearing voices.

Concerning "seek help doctor or nurse", this result was supported ***by Kumar et al., (2015)*** who stated that seeking help doctors or nurses was the most common strategy that used by schizophrenic patients. On the contrary***, Bahgat et al., (2015)*** reported that about one quarter of studied patients "seek help doctor or nurse" and the patients did not find help or support from nurses or doctors. In relation to "cover one's ear/place cotton in one's ear", this result was congruent with a study by ***Abd El-Hay (2012)*** who showed that 64% of patients used "cover one's ear/place cotton in one's ear" as self-management with auditory hallucinations. In the same direction, ***Carter et al., (2016)*** found that wearing ear plugs help patients to manage the auditory hallucinations.

It was noticed that that after psycho-educational program more than half of studied patients not used "do what the voices say". This may be due to that the researcher teaching the patients about the dangers of this strategy as voices may command them to hurting self or others and always made threats and accused them with horrible things and also the researcher helped them to develop other effective and safe strategies for coping with their voices. This result was supported by ***El Refaay (2015)*** who reported that less than three quarters of patient not used "do what the voices say" after the program. In addition, ***Zou et al., (2013)*** indicated that a small number of patients use dangerous strategies, such as, "doing as the voices say". This result was contradicted with ***Tsai & Ku (2016)*** who clarified that most patients used "do as the voices say" as a way for managing voices.

In the present study, the results revealed that, there was statistically significant relation between total auditory hallucinations score of studied patients and sex, age, marital status and education level. While, there was there was no statistically significant relation between total auditory hallucinations score and occupation and residence. This result was contradicted with ***El Refaay (2015)*** who showed that there was no statistically significant relation between mean auditory hallucinations score and sex, age, marital status and education level. While, this result supported by ***El-Sayes (2015)*** who reported that there was no statistically significant relation between mean auditory hallucinations score occupation and residence.

In the present study, the results revealed that, there was statistically significant relation between total coping strategies score and sex and education level. While, there was there was no statistically significant relation between total coping strategies score and age, occupation and residence. This result was in the same line with ***Mohamed (2012)*** who found that sex and education level were significantly associated with coping strategies and age was not significantly associated with all types of coping strategies. In addition, ***Bahgat et al., (2015)*** reported that there was no statistically significant relation between total coping strategies score and occupation and residence. In contrary, ***Singh et al., (2012)*** found that sex and educational status had no association with the number of coping strategies.

In the present study, the results revealed that, there was a positive correlation between total auditory hallucinations score of studied patients and their total coping strategies score after psycho-educational program. This result was confirmed by ***Sayied and Ahmed (2017) & El Ashry and Abdel Al (2015)*** who revealed that there were correlation between behavioral, cognitive, and physiological strategies and auditory hallucination rating scale, which means that increased use of behavioral coping strategies is associated with increased use of cognitive physiological coping strategies. The greater use of coping strategies the better the control of auditory hallucination.

CONCLUSION:

Based on the result of the present study one conclude that:

The psycho educational program was effective for schizophrenic patients and the patients can use coping strategies to reduce the severity of auditory hallucinations. There was a marked improvement in total coping strategies of auditory hallucinations of the studied patients and there was a marked decrease in the severity of auditory hallucinations post implementation of the program. There was a positive correlation between total auditory hallucinations characteristics of the studied patients and their total coping strategies of auditory hallucinations post implementation of the program.

Recommendations:

Based on the findings and conclusion of this study, the following recommendations were suggested**:** A psycho educational program about coping strategies should be applied for patients who suffer from auditory hallucinations based on a treatment protocol during their hospitalization**,** Family education is therefore needed so that the family caregivers may be equipped with knowledge about the prognosis of schizophrenia and become better able to cope with the impacts of the problem of auditory hallucinations**,** The psychiatric nursing staff should apply training programs for patients with schizophrenia who suffer from auditory hallucinations and teach them how to use cognitive, behavioral and physiological coping methods to deal with the hallucinations.

References:

Abd Elhay, E. S. (2012). Self management of auditory hallucination among schizophrenic inpatients. Published Master Thesis, Faculty of Nursing. Alexandria University, Egypt.

Abd El-Hay, E., El-Bilsha, M., & El-Atroni, M. (2017).The effect of auditory hallucinations management program on quality of life for schizophrenic inpatients, Egypt. IOSR Journal of Nursing and Health Science (IOSR-JNHS), 6: 1 - 11.

Bagul, A. C. (2012). "Effect of coping strategies on chronic drug resistant auditory hallucination in schizophrenia: a cross over study". The Indian Journal of Occupational Therapy, 44 (1), 20–29.

Bahgat, R.S., El-Sayes, H.A., & El-Refaay, S.M. (2015). Effect of an Educational Program based on Coping Strategies Enhancement on the Dimensions of Auditory Hallucinations as a psychotic symptoms. *Tanta Scientific Nursing Journal*; 9 (2): 36- 72.

Beck, A., & Rector, N. (2013). Cognitive Model of Hallucinations. Cognitive Therapy and Research, 27(1): 19–52.

Brown, S. (2017). Emotional Reactions to Simulations of Auditory Hallucinations. Journal of Psychopathology and Behavioral Assessment, 30 (4): 307-314.

Carter, D.M., Mackinnon, A., & Copolov, D.L. (2016). Patients' strategies for coping with auditory hallucinations. Journal of Nervous and Mental Disease, 184, 159–164.

Chukwujekwu, C.D. (2019). Prevalence, Patterns and Correlates of Schizophrenia among Out-Patient Attendees at Madonna University Teaching Hospital, Elele: A 3-Year Review. Clin Psychiatry Vol.5 No.1:2

Ebrahim, T.A. (2015). A study of gender differences in some cognitive functions in a sample of schizophrenic patients in Alexandria. Published PhD thesis, Faculty of Medicine, Alexandria University, Egypt.
El Ashry, N., & Abdel Al, M. (2015). Self management strategies to control auditory hallucination among patients with schizophrenia. Int J Curr Res; 7:16147–16156.
El-Azzab, S. (2019). The Program for Coping Methods to Improve Auditory Hallucinations among Patients with Psychiatric Disorders: A Randomized Controlled Trial. *American Journal of Nursing Science*. Vol. 7, No. 6, pp. 268-280.

El-Refaay, S.M. (2015).Effect of an Educational Program about coping strategies on mediating distress due to auditory hallucination among psychiatric patients. Published master thesis, Faculty of Nursing, Tanta University.
El-Sayes, H.A. (2015). Effect of an Educational Program based on Coping Strategies Enhancement on the Dimensions of Auditory Hallucinations as a psychotic symptoms. https://www.researchgate.net/publication/329912978
Fallon, I., & Talbot, R. (2013). Persistent auditory hallucinations: coping mechanism and implications for management .Psychological medicine; 11(2) l: 329-339.
Farhall, J., & Gehrbe, M. (2012). Coping with hallucinations: Exploring stress and coping framework. British Journal of Clinical Psychology; 36 (2): 259–261.
Haddock, G. (1994). Psychological management of schizophrenia. *Mental Health Nursing*; 15 (2):34-44.
Hayashi, N., Igarashi, Y., Suda, K., & Nakagawa, S. (2014). Auditory hallucination coping techniques and their relationship to psychotic symptomatology. Psychiatry and Clinical Neurosciences, 61(6):640–645.
Jessop, M., Scott, J., & Nurcombe, B. (2015). Hallucinations in adolescent in patients with post-traumatic stress disorder and schizophrenia: Occupational Therapy Intervention in Hallucinations. The Indian Journal of Occupational Therapy, 13 (2): 1-6.
Kanungpairn, T., Sitthimongkol, Y., Wattanapailin, A., & Klainin, P. (2017). Effects of a symptom management program on auditory hallucinations in Thai outpatients with a diagnosis of schizophrenia: A pilot study. Nursing and Health Sciences, 9, 34–39.
Kumar, S., Soren, S., Chaudhury, S. (2015). Hallucinations: Etiology and clinical implications. Industrial Psychiatry Journal; 18(2):119-126.
Laori, F. (2012). How do auditory verbal hallucination in patients differ from those in non patients .Front Human Neuroscience; 22(6):389.
Lee, T., Chong, S., Chan, Y., & Sathyadeva, G. (2014). Command Hallucinations among Asian patients with Schizophrenia. The Canadian Journal of Psychiatry. 49(12):838-842.
McCarthy-Jones, S., Trauer, T., Mackinnon, A., Sims, E., Thomas, N., & Copolov, D. L. (2017). A new phenomenological survey of auditory hallucinations: evidence for subtypes and implications for theory and practice. Schizophrenic Bulletin, 40,225-235.
Mohamed, I. (2012). Coping strategies with auditory hallucinations in schizophrenic patients. AAMJ; 7: 1 - 19.
Naoki, H., Yoshito, I., & Seishu, N. (2015). Auditory hallucination coping techniques and their relationship to psychotic symptomatology. Psychiatry and Clinical Neurosciences Journal; 61 (8): 640-645.
Navarro, I.M. (2016). Voices arguing and voices commenting one's action hallucinations: neuropsychological characteristics and evolution. A longitudinal 12 months follow-up study. *Girona*. https://dugi-doc.udg.edu/bitstream/handle/10256/14242.
Nayani, T., & David, A. (2016). The auditory hallucination: a phenomenological survey. Psychological Medicine, 26(1): 177-189.
Ng, P., Chun, R., & Tsun, A. (2013). Recovering from Hallucinations: A Qualitative Study of Coping with Voices Hearing of People with Schizophrenia in Hong Kong. The scientific world Journal, 1-8. Nursing, 27(1): 42–53.

Ramadan, A.H. (2012). Effect of community- based care program on social competence and symptom intensity among hospitalized Psychiatric patients. Published PhD thesis, Psychiatric and Mental Health Nursing, Faculty of Nursing, Cairo University, Egypt.

Sayied, N., & Ahmed, Z. (2017). Efficacy of teaching self-management strategies on auditory hallucinations among schizophrenic patients. Egyptian Nursing Journal; 14 (2): 168 – 178.

Sharma, M. K., & Poornima, M. (2017). "Online Methods of Managing Auditory Hallucinations: A New Trend to Understand Psychopathology." Indian Journal of Psychological Medicine 39.3: 354–356. PMC. Web. 18 July 2018.

Singh, G., Sharan, P., & Kulhara, P. (2012). Attitude towards Hallucinations in Schizophrenia. Hong Kong Journal Psychiatry, 12(1): 2-5.

So, S., & Wong, C. (2018). Experience and coping with auditory hallucinations in first-episode psychosis: relationship with stress coping. Hong Kong Journal of Psychiatry, 18(3): 115-21.

Tsai, Y., & Ku,Y. (2016). Self-care symptom management strategies for auditory hallucinations among inpatients with schizophrenia at a veteran's hospital in Tiwan .Archives of psychiatric Nursing; 19(8):197-199.

Zmigrod, L., Garrison, J. R., Joseph, C., Simons, J.S. (2016) .The neural mechanisms of hallucinations: A quantitative meta-analysis of neuroimaging studies. *Neuroscience and Bio behavioral Reviews*; 69, 113–123.

Zou, H., Li, Z., Nolan, M., Wang, H., Hu, L. (2013). Self- Management among Chinese People with Schizophrenia and Their Caregivers: A Qualitative Study. Archives of Psychiatric.