
Effect of an Educational Program about Auditory Hallucination Self-Control on Quality of Life among Schizophrenic Patients

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ABSTRACT

Background: Auditory hallucinations impact all schizophrenic patients' functioning and their overall quality of life. Self-management categories alleviate distress related to auditory hallucinations. **Aim:** To explore the effect of an educational program about auditory hallucination self-control on quality of life among schizophrenic patients. **Subjects and Method: Design:** A quasi-experimental design was employed. **Setting:** The study was carried out in the inpatient departments of Port Said Psychiatric Health and Addiction Treatment Hospital and Demira Mental Health Hospital. **Subjects:** Comprised a sample of 60 hospitalized schizophrenic patients. **Tools:** Encompassing Phenomenology of Auditory Hallucinations Scale, Self-Management of Auditory Hallucinations Structured Interview Schedule, plus WHO Quality of Life Scale, as well as the Personal and Clinical Data Sheet. **Results:** More than half (55.0%) of the studied patients reported that the total self-management categories were partially successful to control auditory hallucinations pre-program compared to three quarters (75.0%) post-program and more than three quarters (80.0%) follow-up the program implementation. Above three quarters of them had a high level of overall quality of life (78.3% and 81.7%) pre and post program respectively, compared to the majority (85.0%) follow-up the program. **Conclusion:** A statistically significant positive correlation was established between mean scores of physiological categories and quality of life post program. Moreover, a statistically significant positive correlation was found between mean scores of cognitive categories and quality of life pre program. **Recommendations:** Designing and applying educational programs for schizophrenic patients regarding effective auditory hallucinations self-control categories to develop capabilities to control auditory hallucinations efficiently and promote quality of life.

Keywords: Auditory hallucinations self-control, Quality of life, Schizophrenic patients.

INTRODUCTION

Schizophrenia is described as a severe mental disorder that is characterized by profound, fundamental changes in perception, thinking, and emotions (Wang, 2020). Schizophrenia affects approximately 24 million people or 1 in 300 people (0.32%) worldwide. This rate is 1 in 222 people (0.45%) among adults. It is not as common as many other mental disorders. Onset is most often during late adolescence and the twenties, and the onset tends to happen earlier among men than among women (World Health Organization, 2022).

Schizophrenia is a compound disorder of brain function with extensive variation in signs and symptoms; it often includes a loss of "vital contact with reality," plus symptoms of hallucinations, delusions, and disorganized speech, along with "negative symptoms" as diminished emotional communication and inspiration. It is a disorder comprising the plainest functions that provide the person a sense of independence, exceptionality, and self-direction (Galletly et al., 2016).

Hallucination is defined in the diagnostic systems as "an experience resembling true perception without causal stimulus" (Yttri, Urfer-Parnas, & Parnas, 2022). Auditory hallucinations are audible voices that occur in the absence of an outer stimulus. Auditory hallucinations are an important indicator of psychotic disorders, as schizophrenia, schizophrenia spectrum, and mood disorders; likewise they may happen with other mental complaints as anxiety and behavioral disturbances, as a reaction to strain and drug misuse. Approximately 60% to 75% of schizophrenic patients suffer from auditory hallucinations (Yin et al., 2021).

The patients should learn how to apply self-management categories to prevent or decrease the occurrence of auditory hallucinations. Self-control can be defined as the ability to align one's behavior with personally valued goals and standards in the light of certain kinds of motivational conflicts. It also, refers to the processes by which people adopt goals and standards for how they think, feel, and behave, and by which they monitor and implement behaviors that allow them to meet the behaviors they need (Amaya, 2021). When auditory hallucinations occur in schizophrenic patients, their quality of life may be affected. It was found that positive and negative symptoms were associated with poor quality of life among schizophrenic patients (El-Azzab, 2018; Desalegn, Girma, & Abdeta, 2020).

Quality of life is "a person's feeling of welfare, health status, and agreement with life events, as well as access to resources and opportunities." Schizophrenic patients found trouble with quality of life. So, the nurse must measure patients' quality of life within social support and domains of physical, psychological, social, and environmental aspects to help the patients in accomplishing their maximum possible roles as well as increasing their social interactions (Mahmoud, Berma, & Gabal, 2017).

Psychiatric nursing staff should be capable to communicate with schizophrenic patients regarding their auditory hallucinations in a helpful way parallel with estimating self-harm danger. Nurses co-operate with psychiatric patients in recognizing their symptoms, discovering efficient managements, and determining the greatest approaches in definite circumstances. Patients with insistent auditory hallucinations benefit from self-monitoring and independent intervention to control their voices (Buffum, Buccheri, & Trygstad, 2014).

Significance of the Study:

Auditory hallucinations are a stressful complaint that causes painful live for schizophrenic patients. The previous researches mentioned that more than 60% of people who suffer from auditory hallucinations were severely depressed and more than 75% reported higher levels of distress, and explained that those patients expressive poor social and emotional performance, resulting in loss of employment, distress in creating social interactions, sleep deprivation or on waking or falling asleep, and perceived poor quality of life (El-Azzab, 2018; Desalegn et al., 2020).

The self-management categories have been revealed to be proficient ways and can considerably decline the negative consequences of auditory hallucinations, distract patients' attention away from the voices, help patients to control hallucinated voices, assist patients to follow regular daily practices more effectively as well as assist them not to use maladaptive behaviors to deal with auditory hallucinations which lead to improving their quality of life. Therefore, this study could be indispensable to gain information that assist schizophrenic patients to control auditory hallucinations and consequently improving their quality of life.

AIM OF THE STUDY:

The study intended to explore the effect of an educational program about auditory hallucination self-control on quality of life among schizophrenic patients.

Objectives:

The study achieved these objectives:

1. Assess various parameters of auditory hallucinations among schizophrenic patients.
2. Measure the levels of self-management categories to control auditory hallucinations.
3. Assess the quality of life among schizophrenic patients.
4. Design an educational program about auditory hallucination self-control.
5. Implement an educational program about auditory hallucination self-control for schizophrenic patients.
6. Evaluate the effect of an educational program about auditory hallucination self-control on quality of life among schizophrenic patients.

Research Hypothesis:

An educational program about auditory hallucination self-control improves the- quality of life among schizophrenic patients.

Operational Definition:

For the intent of this study, auditory hallucination self-control is defined as "restraint exercised over one's own hearing voices coming from anywhere in external space, in the mind, or on the surface of the body by using some of the categories such as talking to someone, listen to music to distract themselves from hallucination, watch TV or watch something that moves during a hallucination, saying stop and you are not real, changing their positions and going away, use earplugs to control hallucination, relaxation techniques, such as rest, exercise, or engage in activity, doing something they like to do, and take prescribed medication and not stop it abruptly" (Abd-ELhay, El-Bilsha1, & El-Atroni, 2017).

SUBJECTS AND METHOD

Study Design:

One group quasi- experimental design with pre, post, and follow up evaluation was employed.

Study Setting:

The present study was conducted in the inpatient departments at Port Said Psychiatric Health and Addiction Treatment Hospital and Demira Mental Health Hospital. Port Said Psychiatric Health and Addiction Treatment Hospital is affiliated to the General Secretariat of Mental Health and Addiction Treatment (GSMHAT), Ministry of Health. Hospital's capacity is 140 beds; serves four Governorates namely Port Said, El Ismailia, El Suez, and Sinai. The hospital comprises five inpatient psychiatric departments and one men's department for substance abuse. Five inpatient psychiatric departments comprising three departments for male psychiatric patients namely economic men's department "A", economic and health insurance men's department "B" and private men's department, two departments for female psychiatric patients namely economic women department "A", private and health insurance women department. Additionally, one outpatient clinic for children, and finally, it includes psychiatric outpatient clinics.

Demira Mental Health Hospital is affiliated with the General Secretariat of Mental Health and Addiction Treatment (GSMHAT), Ministry of Health. The hospital serves the Governorates of Dakahlia, Kafr El-Sheikh, and Damietta. The hospital is composed of three inpatient departments; one for female psychiatric patients and two inpatient psychiatric departments for men; (A) is the free department, and (B) for men's economical department. In addition to a close care unit for male patients, and an outpatient department and it includes four specialized psychiatric clinics.

Study Subjects:

The study subjects comprised a convenience sample with a total number of 60 schizophrenic patients, either males or females who were suffering from auditory hallucinations, and able to communicate effectively. They recruited from the inpatient departments of the previously mentioned hospitals.

Sample Size:

A sample size was determined by using the single population proportion formula (Lachin, 1981).

$$\text{Sample size (n)} = [(Z\alpha/2)^2 * p (1-p)] / d^2$$

Where:

P: Prevalence of auditory hallucinations among schizophrenic patients= 60% (Waters, 2017).

D: The margin of error = 3%

Z $\alpha/2$: A percentile of standard normal distribution determined by 95% confidence level = 1.96

$$\text{Sample size (n)} = [(Z\alpha/2)^2 * p (1-p)] / d^2 = 59.9$$

The calculated sample size was **60** schizophrenic patients. Because of the anticipated drop out proportion (10%), the concluding sample size was 65 patients.

Tools of Data Collection:

The subsequent tools were utilized to collect data:

Tool I: Phenomenology of Auditory Hallucinations Scale (Modified Version):

This scale was originated by Lowe (1973) in the English language and modified by Miller, O'Connor, & Di-Pasquale (1993) then translated into Arabic language by Abd-Elhay, Lashin, & Abd-Eldaim (2008). The scale is designed to assess various parameters of hallucinations. Mainly "**frequency**" measures the number of items that a hallucination occurs, "**duration**" measures the period for which the hallucination lasted, "**location**" assess the source of the hallucination, "**reality**" (current and past) assesses the perceived veridicality of the experience, "**sensory intensity**" measures the obliteration of patient's ordinary perception in a given modality by the hallucination, "**overt behavior**" (what did the hallucination make the patient do) measuring the actions that the patient takes in response to the experience of hallucination, "**causality**" assesses the specificity of the attributed cause of the hallucinations, and "**content**" which is divided into "**interpretations**" assessing the predominant items that is hallucinating, for example, person, object, or self, and "**action of voices**" measures actions occurring related to the patient within the hallucination. Attached to this tool a question was put to "assess reactions of the studied schizophrenic patients toward auditory hallucinations which include pleasant/ happy/ enjoyed, neutral, discomfort/pain, anxiety/fear, sadness, and anger."

Scoring System:

The scale consisted of ten items, scored from one to three; one referred to the lowest severity while three indicated the highest severity. Therefore, the hallucination severity score ranged from 10 to 30. The levels of auditory hallucinations were categorized according to the following scores; 10 indicated mild auditory hallucinations, 11 to 20 referred to moderate, and 21 to 30 indicated severe auditory hallucinations.

Validity and Reliability:

The scale was verified for its content validity and reliability by Abd-Elhay et al. (2008). The validity was confirmed by a panel of five judges in the psychiatric nursing field and psychiatry who decided that the scale is valid. Spearman's rank correlation coefficient (Spearman's ρ) was utilized to assess the reliability of the scale which proved to be strongly reliable ($r=0.97$), and finally the question concerning the reaction of the patient toward auditory hallucinations showed satisfactory reliability ($r=0.89$).

Tool II: Self-Management of Auditory Hallucinations, Structured Interview Schedule:

This structured interview schedule was created by Abd-Elhay et al. (2008) in the Arabic language. This structured interview schedule was used to assess self-management categories of auditory hallucinations comprising physiological, cognitive, and behavioral categories.

Scoring System:

It comprised 36 statements, the response for these statements was either "not used" which scored with (zero), "used but it didn't help" (one), "used and helped to some extent" (two), or "used and helped a lot" (three). The levels of self-management of auditory hallucinations were categorized according to the following scores; less than 50% indicated unsuccessful self-management, from 50 to 75% reflected partial successful self-management, and more than 75% revealed successful self-management (El-Sayes, Bahgat, & El-Refaay, 2015).

Validity and Reliability:

Self-Management of Auditory Hallucinations, Structured Interview Schedule was tested for its content validity and reliability. Five professionals in the field of psychiatric nursing and psychiatry confirm the validity of it. Reliability was appraised with Spearman's rank correlation coefficient (Spearman's rho) and showed great internal consistency. The categories of tools proved to be intensely reliable as for physiological strategy ($r=0.98$), cognitive strategy ($r=0.99$), and behavioral strategy ($r=1.00$) (Abd-Elhay et al., 2008).

Tool III: WHO Quality of Life (QOL) Scale (Bref Version):

This scale was established by World Health Organization (1998) in an English language and translated into Arabic language by Ahmed (2008). It is utilized to assess the quality of life. The WHOQOL-Bref has 26 items derived from WHOQOL-100; it is a multicultural, multilingual, generic quality of life scale. This scale emphasized the subjective evaluation of the respondents rather than their objective life conditions. Evaluation is based on the situation within the two weeks before the assessment.

The WHOQOL-Bref measures the following broad domains; physical (seven items), psychological (six items), social relationships (three items), environmental (eight items), and general health, plus the overall quality of life (two items) which is not included in the scoring system.

Scoring System:

The 26 items on the scale have only three negative items (three, four, and 26) and the remaining 23 items are positive. Items inquire one (not at all), two (not much), three (moderately), four (mostly), and five (completely). "A critical value of 60% is indicated as the optimal cut-off point for assessing the quality of life" (Silva, Soares, Santos, & Silva, 2014). The patient's quality of life was considered to be high if the percentage was 60% or more, and low if less than 60%.

Validity and Reliability:

Reliability, validity, and sensitivity to change analyses showed that WHOQOL-Bref version performs according to international standers (Aigner et al., 2006).

In addition to the **Personal and Clinical Data Sheet**, this structured interview schedule was developed by the researcher in the Arabic language. The sheet elicited personal characteristics such as age, sex, marital status, level of education, working status, and income. It also included questions that cover clinical data such as diagnosis, duration of illness, number of previous psychiatric hospitalization, the onset of hallucinations, and effect of hallucinations on the patients' life.

Pilot Study:

Before the data collection phase, a pilot study was carried out on 10% (six patients) of the total sample who were selected randomly. The intentions of the pilot study including clarification the feasibility of the study tools and its applicability, and estimation the proper time required for answering the questionnaire. Likewise, it aids to detect any difficulties that might hinder the collection of data. Schizophrenic patients who shared in the pilot study, were excepted from the entire research work sample. Grounded on the results of the pilot study, the tools were applicable

and clear. Thus, no modifications were done. It was conducted from the first to the 25th of February 2021.

Field Work:

Preparation, data collection, planning, implementation, and evaluation of a program persisted for 8 months plus 23 days from the first of March to the 23th of November 2021. The study moved through four phases including assessment, planning, implementation, and evaluation as the following:

Phase (1): Preparation and Assessment Phase:

At the first, the researcher reviewed all patients' records in each ward to detect schizophrenic patients who had auditory hallucinations and the nurses were asked about the patients who were able to communicate effectively. The researcher met the studied patients and clarified to them the purpose of the study and how the program will be implemented, and the written formal consent of each patient was taken with helping from administrative officials; the researcher began to fill in the written pre mentioned tools individually (pretest). The time needed for filling each one extended from 30 to 45 minutes depending on the response of each patient.

Phase (2): Planning Phase:

Based on the results obtained from the previous phase (pretest), and a review of the related literature, an educational program about auditory hallucination self-control content was developed. The content stressed mainly on self-management categories comprising physiological, cognitive, and behavioral and their application of it to control auditory hallucinations among schizophrenic patients. Also, a simple booklet was developed based on the review of the recent related literature. The program objective was developed during this phase.

General objective: to enhance and practice self-management categories to control auditory hallucinations.

Specific objectives:

By the end of this program, the patients will be able to:

1. Recognize the purpose of the program.
2. Identify the importance of self-management categories to control auditory hallucinations.
3. Mention the different types of self-management categories.
4. Practice the different self-management categories to control auditory hallucinations

The first phase of the program:

Entitled: Assessment of auditory hallucinations and quality of life among patients with schizophrenia.

Number of sessions: It consisted of 4 sessions (1-4).

The first session: Clarification of the objectives of the program, and establishing a trusting relationship with the participants by building a rapport with each other.

The second session: The meaning of schizophrenia and auditory hallucinations are defined as a disease that needs treatment.

The third session: Each patient presents his/ her personal experience with auditory hallucinations and identifies the psychological stresses that precede the occurrence of the auditory hallucinations.

The fourth session: Assessing the quality of life among patients with schizophrenia.

The second phase of the program:

Entitled: Categories of self-management of auditory hallucinations.

Number of sessions: It consisted of 6 sessions (5-10).

The specific objectives of this phase: The patient will be able to:

Fifth session: Learn and practice the method of self-monitoring.

Sixth session: Learn and practice how to talk and interact with others to control auditory hallucinations.

The seventh session: Learn and practice the method of ignoring the heard voices.

Eighth session: Learn and practice the method of repeating short sentences aloud, counting numbers, and reading aloud.

The ninth session: Learn and practice singing or singing with the lips closed to self-control auditory hallucinations.

The tenth session: Learn and practice relaxation techniques such as breathing exercises for self-control auditory hallucinations.

The third phase of the program:

Entitled: Discussing and practicing the auditory hallucinations self-control categories that were delivered in the above preceding sessions.

Number of sessions: It consists of one session.

The specific objectives of this phase: The patient will be able to:

The eleventh session: Discuss the categories of auditory hallucinations self-control that has been explained, choose, and practice what is suitable for him/ her.

Phase (3): Implementation phase:

An auditory hallucination self-control program was carried out over eight months plus 23 days, three sessions per week, each session lasted from 45 minutes to one hour. During the first session, the objectives of the program were clarified. Moreover, the studied patients were informed about the sessions' time, the phases of the study, content, and extent. In the commencement of each session, a summary of what was provided during the preceding session and the objectives of a new one were clarified. The studied patients were permitted to request an explanation or clarification of any point involved in the sessions. The program was presented in a concise and clear form emphasizing the program objectives, using different teaching methods such as group discussion, demonstration, and modified lectures and suitable media as a printed booklet and role playing.

The program was implemented on a small group basis, each group three days/ week for four weeks to complete eleven sessions, the participating schizophrenic patients were divided into nine groups, and each group ranging from four to eight patients through four weeks. The sessions were conducted inside the patients' ward.

The sessions of the program were applied as the following:

The researcher trained patients on the categories of auditory hallucinations self-control by using a role-play with one of the patient who participated in the program. The researcher reassured and encouraged the participants to practice the categories of auditory hallucinations self-control during the sessions.

The session was divided into three parts as follows:

Part I:

The researcher started the session by reviewing the category that was applied in the previous session, and then the researcher explained the specific category for each session and then represented it with a cooperating patient in front of the group of patients (15-20 minutes).

Part II:

The door is opened for discussion about the category learned during the current session in terms of its ease for the patient and its applicability, then training was done on its application (15-20 minutes).

Part III:

Re-applied the category learned during the current session, taking the patients' opinions individually on the category, and making the evaluation. Then the researcher made a summary of the session and then confirmed the date of the next session (15-20 minutes).

The program was conducted in three phases:

The first phase:

Consisted of the first to the fourth session as the following:-

First session:

The researcher told the studied patients about the implementation of the program about self-control of audible voices (auditory hallucinations) and its impact on their quality of life. This program comprised eleven sessions, each session took approximately 45 minutes to one hour, three times per week for four weeks, and each time detected, informed, and confirmed about the next session. This program included six categories as the following:

1. Self-monitoring.
2. The way to talk with others to control the sounds as they occur.
3. How to ignore sounds / do not track sounds.
4. Repeating short sentences aloud / counting numbers and reading loudly.
5. Singing with one's voice or singing with the lips closed (humming) to treat auditory hallucinations.
6. Relaxation such as breathing exercises to treat auditory hallucinations.

Each session had exercises, which was the most important thing in order to reach self-control of the voice, so patients must practice what was learned. It was constantly to ensure a good result. At the end of the program, the categories explained in the auditory hallucination self-control program sessions were discussed and the categories that be more suitable for the patients and can be applied were chosen.

Sessions from two to four:

The researcher explained what is meant by schizophrenia, auditory hallucinations, and quality of life. The session started with reviewing of what was done in the previous session. The power

point presentation was used in the explanation of schizophrenia, auditory hallucinations, and quality of life in terms of (definition, etiology, and symptoms of schizophrenia, definition of auditory hallucinations, characteristics of audible voices, the factors that help in the occurrence of voices, negative results of audible voices, definition of quality of life, and its dimensions). The presentation was shown by utilizing a data show.

The second phase:

Categories of self-control of auditory hallucinations consisted of six sessions, starting from the fifth to the tenth session as the following:

Fifth session:

The researcher taught and trained the studied patients about the category of self-monitoring at the time of sounds. The researcher explained the advantages of it and encouraged the patients to notice everything about the voices such as the time of voices occurrence, what were the voices said, what was the feeling of the patient as a result of voices, and what was done to deal with voices, and if the patient gone to someone to help him to deal with voices, then taught and trained the patient to practice the category of self-monitoring at the time the voices and how registered it and emphasized on the necessity of the daily practice of it.

Sixth session:

The researcher explained to the studied patients how to talk to others to control auditory hallucinations when they occur. The researcher taught the participants how to talk with others and interact with them to control their voices as they occur. The session includes a definition of effective communication, types of communication (verbal and non-verbal) and how to use it effectively, and skills that should use to reach effective communication.

Seventh session:

The researcher clarified to the studied patients how to ignore voices/do not track voices. The researcher explained the method of ignoring voices and not following their orders, trained each person in the session on how to use this category, and then helped to practice it.

Eighth session:

The researcher showed to the studied patients how to repeat short sentences loudly/ count numbers and read loudly. The researcher demonstrated how to repeat short, positive sentences when the voices occur, explained how to count the numbers by using the Chinese counter, and showed the benefits of reading in a loud voice during the hearing of voices.

The ninth session:

The researcher explained to the studied patients the category of singing with a voice, or singing with the lips closed (humming) and explained the benefits of singing or humming to make self-control of audible voices.

Tenth Session:

The researcher demonstrated to the studied patients how they do relaxation techniques such as deep breathing exercises to control auditory hallucinations, and trained the participants on the category of deep

breathing exercises for relaxation, asked about the effect of deep breathing exercises on them, and given handout for how to apply deep breathing exercises.

The third phase:

It consisted of one session as the following:-

Eleventh session:

The researcher did a group discussion with the studied patients and revised the categories of auditory hallucinations self-control program applied in each session, and told each participant to choose the appropriate categories for him/her to practice to control auditory hallucinations.

Phase (4): Evaluation phase:

The effectiveness of an auditory hallucinations self-control categories program on schizophrenic patients' quality of life was assessed directly after the program application (post-test) through the pre-mentioned tools. Subsequently the accomplishment of post-test, the studied patients were acknowledged for the effort and the time they presented. This process was carried out again after one month (follow-up test). A printed booklet encompassed all data involved in the program was presented to the studied patients.

Administrative Design:

Before commencing any phase in the study, the Dean of the Nursing Faculty, Port-Said University sent an official letter to the directors of the above revealed hospitals demanding their consent and collaboration to carry out the study after elucidating the intention of the study.

Ethical Considerations:

A written approval was attained from the Scientific Research Ethics Committee of the Nursing Faculty, Port-Said University (**Code No. NUR 9/ 3/ 2020, 15**), as well, the researcher obtained a written agreement from the ethical committee of the General Secretariat of Mental Health and Addiction Treatment (GSMHAT), Ministry of Health to conduct research in the above-mentioned hospitals. Subsequently the elucidating the intention and the significance of the study with helping from administrative officials, written consent was obtained from the studied patients. Agreeable participation was guaranteed since they were permitted to end contribution in the study at any time without any repercussions. Confidentiality of the information gathered and that it was used only for the purpose of the study was confirmed.

Statistical Analysis:

The collected data were fed to the computer and analyzed via SPSS (Statistical Package for Social Sciences) version 22.0 (SPSS Inc, Chicago, IL, USA). Qualitative data were described through frequencies and percentages. Descriptive statistics comprising means, and standard deviations were used to present quantitative data. Comparison between groups was done by Wilcoxon signed ranks test. Pearson's correlation coefficient was used to test correlation between variables. P value ≤ 0.05 was considered to be statistically significant, and highly statistically significant was considered at P value ≤ 0.01 .

RESULTS:

Table 1: Reveals the personal characteristics of the studied schizophrenic patients, as shown, more than one third of them (40.0%) were aged from 30 to fewer than 40 years old, with mean \pm S.D of 36.93 ± 11.20 years. As regards patients' sex, the highest percentage of the studied schizophrenic patients (91.7 %) were males. Concerning working status, slightly less than two thirds of them (63.3%) were working. It was noted that, 43.3% of the studied schizophrenic patients had a secondary level of education. More than half of them (55.0% and 51.7% respectively) were singles and didn't have a fixed monthly income.

Table 2: Illustrates the clinical characteristics of the studied schizophrenic patients. The results clarified that, one quarter of the studied patients (25.0%) had duration of illness ranging from 10 to less than 15 years; it can be observed that, 60.0% of the studied patients were admitted to psychiatric hospitals less than 5 times. Regarding the onset of hallucinations, one quarter of the studied patients (25.0%) had hallucinations from 10 to less than 15 years. Less than two thirds (61.7%) stated that the voices affected their daily life. More than one third of them (37.5 %) fight with others, left work, and said that hearing voices destroyed their life. Regarding the most triggering conditions of hearing voices, one third (33.3%) reported that being annoyed was the most triggering condition of hearing voices. While, 30.0% stated that they heard voices without any triggering conditions.

Table 3: Shows the frequency and percentage distribution of the studied schizophrenic patients according to parameters of hallucinations pre, post, and follow-up the program. Concerning the frequency of hallucinations pre program, more than two thirds of the studied patients (70.0%) had a frequency of auditory hallucinations once/ day or more compared to 26.7% post program, and 20.0% follow-up the program.

According to the duration of the hallucinations pre program, more than half of them (55.0%) were hearing voices for more than 30 minutes compared to 23.3% post program, and 15.0% follow-up the program. Associated with the location of voices pre program. Almost half of the studied patients (48.3%) stated that the heard voices came from inside of their body compared to 50.0% post program, and also follow-up of the program.

Connected with, the reality of current voices pre program, 76.7% conveyed that, the heard voices were the real thing or just like the real thing compared to 63.3% post program, and 56.7% follow-up of the program implementation. Concerning the reality of past voices pre program, 5.0% conveyed that, the heard voices that were vague and not real compared to 13.3% post program, and 20.0% follow-up the program.

Regarding voice intensity pre program, above one third of the considered schizophrenic patients (41.7%) reported that when the voices initiate there's no opportunity of hearing another voice compared to 20.0% post program and 26.7% follow-up the program. As related to overt behaviors pre program, 40.0% conveyed that heard voices had an effect on verbal and non-verbal activities compared to 21.7% post program, and also follow-up the program.

With reference to the causality of voice pre program, above half (56.7%) had a definite and clear reason for hearing voices compared to 41.7% post program, and 38.3 % follow-up the program. With reference to the content of voices (interpretation) pre program, over three quarters (81.7%) interpreted voices as coming from a person or a number of persons, gin, angels, or mythological but with human qualities compared to 76.6% post program, and 75.0 % follow-up the program.

As linked to the content of voices (action of voices) pre program, 41.7 % of them said that the heard voices threatened and accused them of horrible things compared to 50% post- program, and 40.0% follow-up the program. Besides, the total mean scores of auditory hallucinations parameters pre-program, post-program, and follow-up the program were $(21.37 \pm 2.91, 18.95 \pm 3.82, \text{ and } 17.90 \pm 3.27$ respectively).

Table 4: Presents the frequency and percentage distribution of the studied schizophrenic patients according to reaction towards auditory hallucinations pre, post, and follow-up the program. The table clarified that, 30.0% of the studied schizophrenic patients were pleasant/ happy / enjoyed with hearing voices pre program, compared to 18.3% post program, and 21.7% follow-up the program. It appeared that, 11.7% of the studied patients expressed that they felt anxiety / fear toward the voices pre program, compared to 21.7% post program, and 15.0 % follow-up the program. While, 15.0% had a feeling of sadness toward auditory hallucinations pre program compared to 6.7% post program and 8.3% follow-up the program. Pre and post program, 28.3% of the studied patients were reacting toward auditory hallucinations with anger compared to 33.4% follow-up the program.

Table 5: Reveals the comparison between levels of auditory hallucinations among the studied schizophrenic patients pre, post, and follow-up the program. The results showed that, less than two thirds (63.3%) had severe levels of auditory hallucinations pre program compared to 38.3% post program, and 25.0% follow-up the program.

Results also clarified that, there were highly statistically significant differences between levels of auditory hallucinations among the studied patients pre- post the program and pre- follow-up the program ($p = .005$ and $.000$ respectively).

Table 6: Presents the comparison between levels of self-management categories to control auditory hallucinations among the studied schizophrenic patients pre, post, and follow-up the program. Less than half (45.0 %) reported that the physiological categories were partially successful with them to control auditory hallucinations compared to 81.7% post program and 83.3% follow-up the program with highly statistically significant differences between levels of effectiveness of physiological categories between pre-post the program and pre-follow-up the program ($p = .000$ and $.000$ respectively).

Table 7: Presents the comparison between levels of overall quality of life and its domains among the studied schizophrenic patients pre, post, and follow-up of the program. The majority of the studied patients (90.0%) had a high level of quality of life in relation to physical domain pre program compared to, 83.3% post program and 86.7% follow-up the program.

Concerning the psychological domain, the same percentage (78.3%) had high levels pre and post the program compared to, 83.3% follow- up the program. Concerning social relationships domain and

environmental domain, the same percentage (66.7%) had high levels pre program, compared to 80.0% and 78.3% respectively post program, and 76.7% and 83.3% respectively follow-up the program.

Regarding the overall quality of life among the considered schizophrenic patients, over three quarters of them had high levels of overall quality of life pre, post, and follow-up the program which constituted 78.3%, 81.7%, and 85.0% respectively. The results clarified a statistically significant differences between levels of quality of life in relation to social relationships domain, environmental domain, and general health and overall health domain pre-post the program where $p= 0.011$, 0.035 , and 0.001 respectively. Also, highly statistically significant differences were found between levels of quality of life in relation to the environmental domain, and general health and overall health domain pre- follow-up of the program at $p= 0.008$, and $.001$ respectively.

Table 8: Shows the correlation matrix between mean scores of parameters of auditory hallucinations, self-management categories, and quality of life among the studied patients pre, post, and follow-up the program. Evidently, a highly statistically significant negative correlation was identified between mean scores of parameters of auditory hallucinations and quality of life ($r = -.349$) follow-up of the program.

There was a statistically significant positive correlation between mean scores of physiological categories and quality of life post program implementation ($r= .266$). Moreover, there was a statistically significant positive correlation between mean scores of cognitive categories and quality of life pre program ($r = .318$). It was evidenced that, there were statistically significant positive correlations between mean scores of parameters of auditory hallucination and behavioral categories, and total self-management categories pre the program ($r =.328$, and $r = .281$ respectively).

Table 1: Frequency and percentage distribution of the studied schizophrenic patients according to their personal characteristics

Personal Characteristics	N= 60	%
Age (years)		
20-<30	18	30.0
30 -<40	24	40.0
40-<50	11	18.3
≥50	7	11.7
Min – Max	20-68	
Mean ±SD	36.93±11.20	
Sex		
Male	55	91.7
Female	5	8.3
Working status		
Working	38	63.3
Not working	22	36.7
Level of education		
Not read or write level	7	11.7
Basic education level	12	20.0
Secondary education level	26	43.3
University level	12	20.0
Postgraduate level	3	5.0
Marital status		
Single	33	55.0
Married	21	35.0
Divorced	6	10.0
Fixed monthly income		
Yes	29	48.3
No	31	51.7
If yes, this income is (N=29)		
Enough	23	79.4
To some extent	1	3.4
Not enough	5	17.2

Table 2: Frequency and percentage distribution of the studied schizophrenic patients according to their clinical characteristics

Clinical Characteristics	N= 60	%
Duration of illness (years)		
<5	14	23.3
5-<10	13	21.7
10-<15	15	25.0
15-<20	8	13.3
≥20	10	16.7
Min- max	1-33	
Mean± SD	11.20 ± 7.93	
Number of psychiatric hospitalization (times)		
<5	36	60.0
5-<10	12	20.0
≥10	12	20.0
Onset of hallucinations (years)		
<5	14	23.3
5-<10	13	21.7
10-<15	15	25.0
15-<20	8	13.3
≥20	10	16.7
Min- max	1-33	
Mean± SD	11.20 ± 7.93	
The voices have effect on your daily life		
Yes	37	61.7
No	20	33.3
Sometimes	3	5.0
If yes, the effect includes (N= 40)		
Prevent me from staying in my home, become isolated and become mute	5	12.5
Annoyed me and be afraid	14	35.0
Fight with others, leave my work and my life destroyed	15	37.5
Insomnia	3	7.5
Can't think, become nervous and can't breath	3	7.5
Most conditions triggering hearing of voices		
Annoyed	20	33.3
Worry	3	5.0
Angry	7	11.7
Loneliness	6	10.0
Happiness	2	3.3
Sleep time	4	6.7
Without any triggering condition	18	30.0

Table 3: Frequency and percentage distribution of the studied schizophrenic patients according to parameters of hallucinations (pre, post, and follow-up of the program)

Parameters of Hallucinations	Studied Patients n= 60					
	Pre program		Post program		Follow-up program	
	N	%	N	%	N	%
Frequency of hallucinations						
Once/ week or less	12	20.0	36	60.0	43	71.7
More than once/ week but not daily	6	10.0	8	13.3	5	8.3
Once/ day or more	42	70.0	16	26.7	12	20.0
Duration of hallucinations						
Less than 5 minutes	12	20.0	37	61.7	43	71.7
5-30 minutes	15	25.0	9	15.0	8	13.3
More than 30 minutes	33	55.0	14	23.3	9	15.0
Location of voices						
In side patient's body	29	48.3	30	50.0	30	50.0
Outside patient's body	30	50.0	28	46.7	27	45.0
For distance	1	1.7	2	3.3	3	5.0
Reality of current voices						
Vague and not real	4	6.6	9	15.0	15	25.0
Voice imagination as dream	10	16.7	13	21.7	11	18.3
Real thing or just like the real thing	46	76.7	38	63.3	34	56.7
Reality of past voices						
Vague and not real	3	5.0	8	13.3	12	20.0
Voice imagination as dream	9	15.0	8	13.3	6	10.0
Real thing or just like the real thing	48	80.0	44	73.4	42	70.0
Voices intensity						
They cannot be distinguished / hardly listened	14	23.3	23	38.3	27	45.0
The voices interfere with the patient`s ordinary conversations	21	35.0	25	41.7	17	28.3
When the voices start, no possibility of hearing another voices	25	41.7	12	20.0	16	26.7
Overt behaviours						
Not affect behaviour or very little	24	40.0	33	55.0	39	65.0
Affect verbal and nonverbal activity	24	40.0	13	21.7	13	21.7
Affect physical activity as irritable movement	12	20.0	14	23.3	8	13.3
Causality of voices						
Unspecified cause	26	43.3	32	53.3	35	58.4
Specified cause, not obvious	0	0	3	5.0	2	3.3
Specified clear cause	34	56.7	25	41.7	23	38.3
Content of voices (interpretation).						
Person or number of persons, gin, angels, mythological but with human qualities	49	81.7	46	76.6	45	75.0
Tangible object, intangible e.g. Gas, light ray	5	8.3	7	11.7	8	13.3
Patient`s self/ part of patient`s self	6	10.0	7	11.7	7	11.7
Content of voices (action of voices)						
Want to protect the patient	17	28.3	11	18.3	15	25.0
Just passing	18	30.0	19	31.7	21	35.0
Threats and accuses patient of horrible things	25	41.7	30	50.0	24	40.0
Means ± SD	21.37± 2.91		18.95 ± 3.82		17.90 ± 3.27	

Table 4: Frequency and percentage distribution of the studied schizophrenic patients according to their reaction towards auditory hallucinations (pre, post, and follow-up the program)

Reaction towards Auditory Hallucinations	Studied Patients n= 60					
	Pre program		Post program		Follow-up program	
	N	%	N	%	N	%
Pleasant/ happy/ enjoyed	18	30.0	11	18.3	13	21.7
Neutral	9	15.0	12	20.0	11	18.3
Discomfort/ pain	0	0.0	3	5.0	2	3.3
Anxiety/ fear	7	11.7	13	21.7	9	15.0
Sadness	9	15.0	4	6.7	5	8.3
Anger	17	28.3	17	28.3	20	33.4

Table 5: Comparison between levels of auditory hallucinations among the studied schizophrenic patients (pre, post, and follow-up the program)

Levels of Auditory Hallucinations	Studied Patients n= 60						Pre- post (Wilcoxon)		Pre-follow (Wilcoxon)	
	Pre program		Post program		Follow-up program		z	p-value	z	p-value
	N	%	N	%	N	%				
Mild	0.0	0.0	0	0.0	0	0.0	-2.785(a)	.005**	-4.131(a)	.000**
Moderate	22	36.7	37	61.7	45	75.0				
Severe	38	63.3	23	38.3	15	25.0				

Z: Wilcoxon test compared two paired groups, (a) based on negative ranks.

****** Highly significant at $P \leq 0.01$.

Table 6: Comparison between levels of self-management categories to control auditory hallucinations among the studied schizophrenic patients (pre, post, and follow-up the program) (n=60)

Self-management Categories	Levels of Self-Management of Auditory Hallucinations																		Pre- post (Wilcoxon)		Pre-follow (Wilcoxon)			
	Pre program						Post program						Follow-up program						z	p-value	z	p-value		
	Un-successful <50%		Partial successful 50- 75%		Successful >75%		Un-successful <50%		Partial successful 50- 75%		Successful >75%		Un-successful <50%		Partial successful 50- 75%		Successful >75%							
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%						
Physiological categories	33	55.0	27	45.0	0	0.0	11	18.3	49	81.7	0	0.0	10	16.7	50	83.3	0	0.0	-	4.491(a)	000**	-	4.426(a)	.000**
Cognitive categories	28	46.7	32	53.3	0	0.0	18	30.0	42	70.0	0	0.0	20	33.3	40	66.7	0	0.0	-	2.041(a)	.041*	-	1.569(a)	.117
Behavioral categories	20	33.3	40	66.7	0	0.0	16	26.7	44	73.3	0	0.0	16	26.7	44	73.3	0	0.0	-	1.069(a)	.285	-	1.000(a)	.317
Total self-management categories	27	45.0	33	55.0	0	0.0	15	25.0	45	75.0	0	0.0	12	20.0	48	80.0	0	0.0	-	2.828(a)	.005**	-	3.638(a)	.000**

Z: Wilcoxon test compared two paired groups, (a) based on negative ranks.

* Significant at $P \leq 0.05$

** Highly significant at $P \leq 0.01$.

Table 7: Comparison between levels of quality of life and it's domains among the studied schizophrenic patients (pre, post, and follow- up the program) (n=60)

Quality of Life	Levels of Quality of Life												Pre- post (Wilcoxon)		Pre-follow (Wilcoxon)	
	Pre program				Post program				Follow-up program				z	p-value	z	p-value
	Low		High		Low		High		Low		High					
	N	%	N	%	N	%	N	%	N	%	N	%				
Physical domain	6	10.0	54	90.0	10	16.7	50	83.3	8	13.3	52	86.7	-1.633(a)	.102	-0.816 (a)	.414
Psychological domain	13	21.7	47	78.3	13	21.7	47	78.3	10	16.7	50	83.3	.000 (b)	1.000	-0.832 (b)	.405
Social relationships domain	20	33.3	40	66.7	12	20.0	48	80.0	14	23.3	46	76.7	-2.530 (c)	.011*	-1.732(b)	.083
Environmental domain	20	33.3	40	66.7	13	21.7	47	78.3	10	16.7	50	83.3	-2.111 (c)	.035*	-2.673(b)	.008**
General health and overall health domain	25	41.7	35	58.3	9	15.0	51	85.0	9	15.0	51	85.0	-3.411 (c)	.001**	-3.266(b)	.001**
Overall quality of life	13	21.7	47	78.3	11	18.3	49	81.7	9	15.0	51	85.0	-.707 (a)	.480	-1.155(a)	.248

Z: Wilcoxon test compared two paired groups, (a) based on negative ranks, (b) the sum of negative ranks equals the sum of positive ranks, and (c) based on positive ranks.

* Significant at $P \leq 0.05$

** Highly significant at $P \leq 0.01$

Table 8: Correlation matrix between mean scores of parameters of auditory hallucinations, self-management categories, and quality of life among the studied schizophrenic patients (pre, post, and follow-up the program) (n=60).

Mean Scores of	Quality of Life						Parameters of Auditory Hallucinations					
	pre program		post program		follow-up program		pre program		post program		Follow-up program	
	r	p	r	p	r	p	r	p	r	p	r	p
Parameters of auditory hallucination	.137	.296	-.233	.073	-.349**	.006**						
Physiological categories	.173	.186	.266*	.040*	.161	.219	.163	.213	.161	.218	.168	.200
Cognitive categories	.318*	.013*	.080	.544	-.074	.575	.147	.262	.147	.263	.068	.605
Behavioral categories	.127	.334	.065	.623	.014	.916	.328*	.011*	.176	.178	.169	.197
Total self-management categories	.226	.083	.138	.293	.028	.834	.281*	.030*	.207	.112	.189	.148

r: Pearson correlation

* Significant at $p \leq 0.05$

** Highly significant at $p \leq 0.01$

DISCUSSION

Schizophrenia has been described as a disorder including a loss of contact with reality and the presence of delusions and hallucinations. Hallucinations are experienced as involuntary and are one of the most devastating symptoms. Auditory hallucinations are the most common and are typically experienced as hearing familiar or unfamiliar voices that are distinct from one's internal thoughts (Wang, 2020; Watson, 2015). Patients who experience auditory hallucinations express poor social and emotional performance, resulting in loss of employment and distress in creating social interactions.

Persistent auditory hallucinations can impair involvement in activities demanding constant concentration and attention and influence the quality of life (Alshowkan, Curtis, & White, 2015; Mellina et al., 2018). Therefore, this current study was carried out to shed light on the effectiveness of an educational program about auditory hallucination self-control on quality of life among schizophrenic patients. The contemporary results demonstrated that, the mean \pm SD of parameters of auditory hallucinations pre, post, and follow-up the program were (21.37 ± 2.91 , 18.95 ± 3.82 , and 17.90 ± 3.27 respectively).

This decline in mean scores of auditory hallucinations parameters might be due to the interaction of schizophrenic patients with the educational program of auditory hallucinations self-

control and their commitment to implement the different categories that were presented and applied in the program. In the same scene, a study of Ahmed et al. (2020) in Egypt entitled "Psycho educational program about coping strategies for reducing auditory hallucinations among schizophrenic patients" clarified that, a highly significant improvement in auditory hallucinations parameters was identified between pre and post the program implementation.

As regard levels of parameters of auditory hallucinations, slightly less than two thirds of the considered patients had severe levels of auditory hallucinations pre program, compared to over one third post program, and one quarter follow-up the program. Also, highly statistically significant differences were detected between levels of auditory hallucinations among the considered patients pre- post the program and pre- follow-up the program. This means that the self-control categories were efficient to manage and decrease auditory hallucinations severity, and that the participation of patients was effective. Accordingly, El-Azzab (2018) who stated that, the patients conveyed that they had less severity of hearing the voices after the usage of the self-management categories to control auditory hallucinations than patients who received typical intervention.

The results illustrated that about one third of the considered schizophrenic patients were angry when listened to voices pre, post, and follow-up the program. The reason may be associated with that the studied patients understood the negative effect of auditory hallucinations on their life. So, the feeling of anger when hearing voices is nearly similar across the phases of program implementation. In analogous with that result Hassan et al. (2013) reported that a feeling of worry and pain toward voices and reaction with anger was demonstrated by a great number of the studied patients.

The current findings disclosed that, less than half of the deliberated patients stated that the physiological categories were partially successful to control auditory hallucinations pre program implementation, compared to above three quarters post, and follow-up the program, with extremely statistically noteworthy differences between levels of effectiveness of physiological categories pre-post, and pre-follow-up the program implementation.

This interpretation of that, the researcher encourages the studied patients to increase physiological categories utilization such as sleeping, listening to soft music, laying down resting, and doing deep breathing exercises by giving material rewards and verbal enforcement. This result goes in line with Bagaul (2018), and Sayied and Ahmed (2017) who stated that, some physiological categories for controlling hallucinations were utilized by the greater part of the studied patients and revealed significant improvement. This finding is incongruous with Beck and Rector (2003) who stated in his study that, escaping or ignoring the voices are not successful in self-control as conveyed by above half of the patients who experiencing auditory hallucinations.

Outcomes of the existing study accentuated that, effectiveness of behavioral categories to control auditory hallucinations among the considered patients pre, post, and follow-up the program was increased. In this respect, Ahmed et al. (2020) clarified that a highly noteworthy improvement in the patients' behavioral categories was established post of program implementation.

As related to total self-management categories comprising physiological, cognitive, and behavioral categories utilized by the deliberated patients, The findings denoted that, pre the program, above half of the patients clarified that the total self-management categories were partially successful with them to control auditory hallucinations, compared to three quarters post program, and above three quarters follow-up the program. Also, there were extremely statistically noteworthy differences between the total levels of effectiveness of self-management categories to control auditory hallucinations among the considered patients pre-post the program, and pre-follow up the program.

In line with the abovementioned, Ahmed et al. (2020) who publicized a greatly remarkable negative correlation between the total score of auditory hallucinations among the intended patients and their total score of self-management categories after the psycho educational program. In an equivalent direction, El- Ashry and Abdel Al (2015) and Sayied and Ahmed (2017) elucidated correlations between cognitive, behavioral, and physiological categories and auditory hallucinations denoting that the greater use of behavioral, cognitive, and physiological categories is the best to control auditory hallucinations.

Concerning the quality of life domains among the considered patients, the majority of had a high level of quality of life related to the physical domain pre, post, and follow-up the program, the reason is probably associated with that, psychiatric disorders had effects on the patients' affective, cognitive, and behavioral state rather than their physiological standing. Likewise, Desalegn et al. (2020) declared that, a high physical domain of quality of life was experienced by the considered schizophrenic patients. Besides, Mahmoud et al. (2017) whose result signposted that, amongst the quality of life domains, the physical domain was the uppermost domain amongst psychiatric patients.

The contemporary results clarified that, over three quarters of the considered schizophrenic patients had a high psychological domain level pre, post the program, and the percentage has been increased follow-up of the program. Moreover, two thirds of patients had a high level of social relationships domain of quality of life pre program, compared to more than three quarters post the program, and the percentage has been slightly decreased follow-up the program. The explanation might be that, the studied patients interaction with each other was successful during participation in the sessions of the program implementation, as program sessions provide them an opportunity for socializing, and communication, thus they establish relationships with each other, which result in an enhancement in the quality of life social domain post and follow-up the program than pre the program. The researcher noticed that the studied patients waited for sessions and attended it constantly, and some of them requested those similar sessions to be held constantly inside the hospital. On the same track, Abd-ELhay et al. (2017) revealed that, psychosocial and environmental quality of life domains were improved among schizophrenics after auditory hallucinations self-control program application.

The current work elucidated that, more than three quarters of the considered schizophrenics had a great level of whole quality of life pre and post the program, compared to the majority follow-up the program. This might be due to that, a huge number of the patients were educated as well as

employed, so they may have communication and intellectual abilities, and environmental possessions, particularly money which enhances psychological, social, and environmental domains. Moreover, the preponderance of the considered patients were from rural zones near Demira hospital and it was known that the social networks and family ties in rural areas are stronger than in urban areas and the existence and support of significant others correlated to a sense of gratification, psychological security, as well as worthy overall quality of life.

Correspondingly, a study by Mahmoud, Ali, and Abdel-Ghani (2021) which publicized that, maximum of the considered schizophrenics had a high level of quality of life because the preponderance of them were educated, worked, and shared household with family. As well, Desalegn et al. (2020) illustrated that, schizophrenic rural residents had high levels of physical health, environmental, social relationships domain, plus whole quality of life. In a disharmony, a study conducted by Mokhtar, Zaki, and Abdel-Aziz (2021) in Egypt who pointed out that the majority of the considered patients experience a low level of total quality of life.

The existing study remarkably illuminated that, statistically significant differences there were detected between levels of quality of life with social relationships domain, environmental domain, and general health and overall health domain pre-post the program. Furthermore, highly statistically remarkable differences were found between levels of quality of life in relation to environmental domain, and general health and overall health domain pre- follow-up the program implementation.

It was evidenced that, statistically noteworthy positive correlations were established between mean scores of parameters of auditory hallucinations and behavioral categories, and total self-management categories pre the program. This may be related to that, most of the patients knew a lot of self-management categories especially behavioral strategies but didn't apply it. So, the auditory hallucinations dominated the perception of patients instead of self-management categories which made them suppose that, self-management categories had no or weak influence on auditory hallucinations pre the program. Therefore, the program must be included in the treatment protocol with fixed and organized training to change the patients' cognition and behavior to overcome auditory hallucinations. This is inconsistent with Yang, Lee, Los, and Beckstead (2015) who established a notable improvement subsequently the behavioral management program in auditory hallucinatory symptoms among patients.

As clear from the existing study findings, a highly statistically significant negative correlation was established between mean scores of auditory hallucinations parameters and quality of life follow-up of the program. This means that when auditory hallucinations increase, leads to a decrease in schizophrenic patients' quality of life because auditory hallucinations create difficulties for patients to contact with reality and had negative comments and emotions from others, become unable to work, and prefer social isolation to escape from negative behaviors of others toward themselves which lead to significant negative effects on quality of life. Consequently, a lack of cooperation of the professional team members to aid patients to apply the auditory hallucinations self-management

categories leads to an increase in auditory hallucinations, which subsequently leads to a decrease in the quality of life.

Results of the existing study indicated that, a statistically significant positive correlation was detected between mean scores of self-management physiological categories and quality of life post the program. This might be explained that, physiological categories were the easiest category that patients utilized and enjoyed, such as listening to music and doing deep breathing exercises which make patients able to control auditory hallucinations and promote quality of life. Accordingly, El Sheshtawy (2011) clarified that, the capability to control symptoms as well as accompanying stress considerably leads to improvement in the quality of life among schizophrenic patients.

The contemporary results publicized a statistically significant positive correlation between mean scores of cognitive categories and quality of life pre the program. This might be because of that, when the studied patients adapted to use cognitive categories to change their perception and meaning toward the voices to promote their lives, this may be attributed to enhance their quality of life. Equivalently, Singer and Addington (2009) clarified an escalation in adaptive behavior and reduction in the frequency of hallucinations following cognitive behavioral techniques.

The results of the existing study reflect the effectiveness of self-management categories to control auditory hallucinations. So, there's no the least doubt that, schizophrenic patients are in an urgent need for implementation of more psycho-educational programs to teach them extra adaptive self-management categories to deal with auditory hallucinations, and these programs should add to the treatment protocol of psychiatric patients who suffer from auditory hallucinations. These results are proved by a study by Mankiewicz and Turner (2014) which indicated a substantial enhancement in quality of life among schizophrenic patients after the implantation of the cognitive restructuring and graded behavioral self- management categories for controlling auditory hallucinations.

CONCLUSION

The existing study results inferred that, a statistically significant positive correlation was identified between mean scores of physiological categories and quality of life post program. Moreover, a statistically significant positive correlation was noticed between mean scores of cognitive categories and quality of life pre program.

RECOMMENDATIONS

Taking into account the findings of the current study, the subsequent recommendations were proposed:

1. Designing and applying educational programs for schizophrenic patients concerning effective auditory hallucinations self-control categories to develop capabilities to control auditory hallucinations efficiently and promote quality of life.
2. Designing and implementing educational training programs for psychiatric nurses to advance their knowledge and skills concerning recent auditory hallucinations self-management

categories, therapeutic relationships, and communication skills to deal effectively with patients who suffer from hallucinations and encourage patients to verbalize if they feel unwell.

3. Schizophrenic patients' families should be involved in the treatment plan to support patients to use self-management categories of auditory hallucinations and explain to them the importance of application of these categories to cultivate the patients' total quality of life to live in a typical way in society.

4. Dissemination and generalization of this program allover diverse psychiatric health hospitals in Egypt.

LIMITATION

The only limitation that should be underlined is that, the program began with 65 schizophrenic patients participating in the program, and then five patients withdrew during the different phases of the program. It was difficult to compensate this drop out of patients due to the inaccessibility of schizophrenic patients suffering from auditory hallucinations during the implementation of the program.

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تأثير برنامج تعليمي حول التحكم الذاتي للهلوسة السمعية علي جودة الحياة بين مرضى الفصام

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الخلاصة

إن الهلوس السمعية لها تأثير سلبي على الأداء الاجتماعي والمهني والشخصي لمرضى الفصام وكذلك جودة الحياة لديهم بشكل عام. إن طرق التحكم الذاتية للهلوس السمعية يمكن أن تقلل من الضيق والإزعاج الناتج عن الهلوس السمعية. **الهدف:** استكشاف تأثير برنامج تعليمي حول التحكم الذاتي للهلوسة السمعية على جودة الحياة بين مرضى الفصام. **طرق وأدوات البحث; منهج البحث:** تم استخدام التصميم شبه التجريبي. **مكان الدراسة:** أجريت الدراسة الحالية بمستشفى بورسعيد للصحة النفسية وعلاج الإدمان ومستشفى دميرة للصحة العقلية بالمنصورة، مصر. **عينة الدراسة:** تضمنت 60 مريضاً من مرضى الفصام الذين يعانون من الهلوس السمعية المتواجدين بالأقسام الداخلية في المستشفيات سالفة الذكر. **الأدوات:** تم استخدام ثلاث أدوات لجمع البيانات شملت مقياس ظواهر الهلوس السمعية، المعالجة الذاتية للهلوسة السمعية، ومقياس منظمة الصحة العالمية لجودة الحياة، بالإضافة إلى استمارة البيانات الشخصية والإكلينيكية. **النتائج:** أظهرت الدراسة أن استخدام طرق التحكم الذاتية للهلوس السمعية كان ناجحاً جزئياً لدى أكثر من نصف المرضى الخاضعين للدراسة (55%) في السيطرة على الهلوس السمعية قبل تنفيذ البرنامج مقارنةً بثلاثة أرباع المرضى (75%) بعد تنفيذ البرنامج مباشرة، وأكثر من ثلاثة أرباع المرضى (80%) بعد مرور شهر واحد من تنفيذ البرنامج، كما أوضحت الدراسة أن أكثر من ثلاثة أرباع المرضى (78,3%، 81,7%) لديهم مستوى عالٍ من جودة الحياة قبل تنفيذ البرنامج وبعده مباشرة علي التوالي، مقارنةً بمعظم أفراد العينة (85%) بعد شهر واحد من تنفيذ البرنامج. **الاستنتاج:** خلُصت الدراسة إلي وجود علاقة ترابطية إيجابية ذات دلالة إحصائية بين متوسط درجات طرق التحكم الذاتية الفسيولوجية للهلوس السمعية وجودة الحياة لدى مرضى الفصام بعد تنفيذ البرنامج مباشرة، علاوةً على ذلك، وُجدت علاقة ترابطية إيجابية ذات دلالة إحصائية بين طرق التحكم الذاتية المعرفية وجودة الحياة قبل تنفيذ البرنامج. **التوصيات:** تصميم وتطبيق برامج تعليمية مستمرة لمرضى الفصام عن طرق التحكم الذاتية المؤثرة للهلوس السمعية لتعزيز قدراتهم للسيطرة ذاتياً علي الهلوس السمعية بشكل فعال والتي ستؤدي تبعاً إلي تعزيز جودة الحياة لديهم.

الكلمات المرشدة: التحكم الذاتي للهلوس السمعية، جودة الحياة، مرضى الفصام.