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Effect of a Cognitive Behavioural Therapy on Self-Efficacy and Coping Skills among Elderly Patients with Schizophrenia

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Abstract
Background: Cognitive Behavioural Therapy as emerged as a promising approach to address the unique challenges faced by elderly population with schizophrenia especially with their increasing prevalence. **Aim:** To evaluate the effect of a Cognitive Behavioural Therapy on self-efficacy and coping skills among elderly patients with schizophrenia. **Research design:** A quasi-experimental study was conducted with pre and post follow-up. **Setting:** This study was carried out in outpatient clinics of Psychiatry and Addiction Prevention Hospital at Qasr Al-Ani University Hospital, affiliated to Cairo University, Cairo, Egypt. **Subjects:** A purposive sample of 30 elderly patients with schizophrenia who were diagnosed according to DSM-5: **Tools for data collection:** Three tools were used for data collection I. Structured interview questionnaire consists of elderly patient demographic characteristics. 2. Generalized Self- Efficacy Scale 3. Ways of Coping Questionnaire **Results** there are statically significance differences were found between pre and post intervention in relation to self-efficacy and coping skills with obvious improvement in the total scores of the two variables. In addition to large size effect was found in both self-efficacy and coping skills which indicate practical significance of the intervention. **Conclusion:** Cognitive Behavioural Therapy improved coping skills and self-efficacy among elderly patients with schizophrenia. **Recommendation:** Continuous training of psychiatric and gerontological nurses about Cognitive Behavioural Therapy for implementing such programs into schizophrenia elderly patients' routine nursing care and elevate awareness of elderly patients about importance of Cognitive Behavioural Therapy.

Keywords: Cognitive Behavioural Therapy, coping skills, elderly patients, self-efficacy & schizophrenia.

Introduction
Egypt is experiencing a significant demographic shift. Between 2020 and 2050, the proportion of individuals aged 60 and above is expected to more than double, increasing from 8.4 million (8.3% of the total population) to 22 million (14.3%). In contrast, the proportion of those aged 15–24 is projected to grow by only 1.5 times during the same period (United Nations Framework Programme, 2021). As the population continues to age, the prevalence of mental health disorders among older adults is anticipated to rise **(Randhawa, 2023)**.

Schizophrenia as a chronic, severe clinical syndrome, characterised by significant impairments in the perception of reality and behavioural changes, affects about 24 million people worldwide **(WHO, 2022)** or 1 in 300 people (0.32). Patients with late-onset schizophrenia differ from patients with other late-onset psychosis in several psychosocial and clinical variables, including daily functioning and cognitive decline, which are largely neglected in the research on the need for specialised psychiatric treatment and rehabilitation **(Hussein, et al., 2012).**

Elderly patients with schizophrenia face unique challenges that go beyond the typical psychotic symptoms, such as cognitive decline due to age, increased medical comorbidities and social isolation **(Meesters et al., 2022).** Recent research suggests that cognitive behavioural therapy (CBT) can be of particular benefit to this population, by increasing self-efficacy and developing adaptive coping mechanisms. Systematic review by **Granholm et. al (2020)** found that age-adjusted CBT protocols resulted in clinically meaningful improvements in functional performance in elderly patients with psychotic disorders. Therapeutic attention to challenging dysfunctional beliefs about how to treat illness seems particularly relevant in older patients, often with decades of psychiatric symptoms and treatment.

Self-efficacy, defined as the belief in the ability to perform the actions necessary to achieve a particular outcome, is a key treatment goal for older people with schizophrenia. **Chen et al. (2022)** conducted a randomised controlled study comparing CBT with conventional treatment in 94 patients over 65 years of age with schizophrenia spectrum disorder. CBT interventions specifically addressing self-efficacy in

disease management produced modest to large effect sizes (Cohen's d = 0.68) on measures of adherence and self-management of symptoms. Notably, improvements in self-efficacy-related reduction in hospital readmission during the 12-month follow-up period highlighted the clinical relevance of this psychological construct.

Self-efficacy is lower in schizophrenia patients than in healthy controls. Self-efficacy has both a direct and indirect effect on functional performance in elderly patients with schizophrenia through negative symptoms; in addition, self-efficacy should be a goal of intervention to improve functional performance in elderly patients with schizophrenia **(Wright et al., 2021).**

Guaiana, Abbatecola, Tarantino , Ebuenyi, Lucarini, Li , Zhang and Pinto (2022) A comprehensive systematic analysis encompassing 24 trials (N=1900) evaluated the comparative efficacy of group-based cognitive behavioral therapy (CBT) against standard psychiatric care and alternative psychosocial interventions (both individual and group formats) for schizophrenia management. The findings revealed that group CBT demonstrated neither superiority nor inferiority regarding attrition rates, healthcare service utilization patterns, or general quality-of-life measures when compared to conventional treatments. However, the data indicated that group CBT interventions specifically tailored for psychosis yielded statistically significant improvements in both overall mental state assessments and global functioning metrics relative to standard care protocols or alternative psychosocial therapeutic approaches. The investigators emphasized the critical need for methodologically rigorous investigations that generate clinically meaningful, applicable, and adequately powered data to further validate these preliminary conclusions and inform evidence-based practice guidelines.

Patients with schizophrenia use a range of coping strategies to manage their unpleasant symptoms and to overcome anxiety. They often use emotional-focused and passive coping strategies to cope with stressful events. They often prefer to avoid facing pressures rather than considering possible solutions **(Shoib, et al., 2021).**

The neurobiological basis for the efficacy of CBT in elderly patients with schizophrenia is increasingly documented in neuroimaging studies. **Eack, et al., (2023)** have shown that CBT interventions aimed at cognitive restructuring are associated with increased activation of the prefrontal cortex, which is involved in executive function and emotional regulation. These neural changes correlated with improved self-efficacy scores in standardised tests. Interestingly, these improvements were also seen in patients with significant duration of disease, suggesting that neuroplasticity is maintained well into adulthood. This contradicts the previous assumption that long-term schizophrenia inevitably leads to resistance to treatment in the elderly.

Recognizing the limitations, side effects and health risks associated with antipsychotic drugs, one evidence-based intervention for both diseases is cognitive behavioural therapy (CBT). Efficacy of this intervention has been demonstrated in a number of studies. In general, studies show that in patients with schizophrenia, reducing symptoms, preventing relapse, reducing hospitalisation, improving social functioning, increasing employment and quality of life are possible with various rehabilitation interventions in addition to optimal pharmacotherapy **(Yildiz, 2021).**

Cultural factors strongly influence the effectiveness of CBT interventions in a variety of elderly populations with schizophrenia. **Arundell et al. (2021)** examined the results of CBT interventions across different ethnic groups and found that culturally adapted interventions produced better self-efficacy results than standard protocols. Adaptations included the integration of cultural beliefs about mental illness, the recognition of cultural differences in family participation, and the tackling of stigma in specific community settings. Researchers stressed that successful implementation requires therapists to understand how cultural factors shape the expression of illness and expectations of recovery, especially among older immigrants and minorities who may have traditional beliefs about mental illness.

The economic impact of introducing CBT in elderly patients with schizophrenia demonstrates a convincing cost-effectiveness. **Shields, et al., (2019)** carried out a health economics analysis comparing CBT with standard pharmacological treatment in schizophrenia in elderly patients. Despite higher upfront costs, CBT interventions have led to significantly lower two-year healthcare expenditures through a reduction in hospital admissions, a reduction in emergency services, and improved adherence to medication. Researchers calculate that for every dollar spent on CBT, $3.25 is returned on investment. These findings suggest that extending access to evidence-based psychosocial interventions to older people with schizophrenia is not only a clinically sound approach, but also a cost-effective health care strategy.

Contemporary research indicates that Cognitive Behavioral Therapy (CBT) demonstrates clinical efficacy when implemented within nursing interventions for elderly schizophrenia patients, with empirical investigations documenting notable enhancements in symptomatic control and health-

related quality of life metrics **(Granholm et al., 2022).** Adapted CBT methodologies specifically tailored for geriatric schizophrenia populations have exhibited therapeutic benefits in attenuating positive symptomatology, optimizing pharmacological adherence patterns, and facilitating improved psychosocial functioning when systematically incorporated into multidimensional nursing care strategies **(Mueser et al., 2023).** Meta-analytic findings from **Zhang & colleagues (2024)** revealed that CBT interventions administered by nursing professionals that integrate geriatric-specific modifications-including cognitive technique simplification, memory enhancement tools, and accommodations for age-related sensory decrements-produce statistically superior clinical outcomes compared to conventional treatment protocols, with therapeutic gains maintained at twelve-month longitudinal assessment points.

Research by **Wang & Johnson (2025)** established that psychiatric nursing personnel with specialized training in geriatric-focused cognitive behavioral therapy demonstrate efficacy in facilitating recognition of symptomatic manifestations, modifying delusional cognitive constructs, and augmenting adaptive coping mechanisms in elderly patients with schizophrenia spectrum disorders via both individualized and collective therapeutic formats. **Alvarez-Jimenez & colleagues (2024)** further substantiated that as the geriatric schizophrenia demographic expands, the deployment of empirically validated CBT protocols by nursing professionals constitutes an economically viable intervention strategy that simultaneously addresses psychopathological symptomatology and gerontological considerations specific to this clinically vulnerable cohort.

Significance of the study:

Mental and neurocognitive disorders are the leading cause of disability among the world's older adult population. Egypt's population of older adults is growing rapidly. The 2017 national census showed a 2.56 percent increase in the number of older adults since the 2006 census, and this number is expected to double by 2031, with a projected increase of 11.5 percent **(Central Agency for Public Mobilisation and Statistics, 2019).** In addition, there is uncertainty about the prevalence and correlates of mental and neurocognitive impairment in older people, particularly in the Middle East and Egypt **(Odejimi, et al., 2020).**

Coping skills and social functioning are two critical areas which are often severely affected by schizophrenia. Poor coping skills may result in maladaptive behaviour, poor adherence to treatment and an increased risk of recidivism **(Wilder-Willis, et al., 2002)**. Similarly, impaired social functioning is associated with poorer quality of life, higher rates of hospitalisation and increased burden on carers **(Velthorst et al., 2016).** Existing pharmacological treatments for schizophrenia are primarily directed to the reduction of psychotic symptoms but have only limited effects on coping and social behaviour.

The role of psychiatric and gerontological nurses is crucial in raising awareness of schizophrenia among patients and their families, which can make a significant contribution to improving coping skills. CBT teaches a person to modify beliefs or behaviours that may be leading to negative emotions. The therapy has two main parts: a cognitive component, which helps a person to change his or her thinking about a situation, and a behavioural component, which helps a person to change his or her reactions. and reducing disability associated with the disease **(Safiri et al., 2024).** Cognitive behavioural therapy (CBT) is a proven psychosocial intervention that has shown promise in improving coping strategies and social functioning in schizophrenia in young adults **(Yildiz, 2021).** However, there is little research into the effectiveness of CBT in elderly patients with schizophrenia. Given the unique challenges facing this population, it is essential to explore nursing interventions that can improve coping and social functioning, potentially improving the quality of life overall and reducing the burden on carers.

The proposed study aims to address this gap by assessing the impact of CBT treatment interventions adapted to elderly patients with schizophrenia on coping strategies and social performance. The findings of this research could inform the development of age-appropriate, targeted psychosocial interventions as an adjunct to pharmacological treatment, ultimately leading to better care and a better quality of life in this vulnerable population.

Aim of the study:

Current study aimed to evaluate the effect of a Cognitive Behavioural Therapy (CBT) nursing intervention on self-efficacy and coping skills among elderly patients with schizophrenia.

Hypotheses:

H1: Elderly patients with schizophrenia who will receive CBT program will exhibit higher self-efficacy scores in the post-test than in the pre-test.

H2: Elderly patients with schizophrenia who will attend CBT program will demonstrate higher coping skills scores in the post-test than pre-test**.**

Subjects and Methods

Research design: One group pre-post only and no follow up quasi-experimental research design was selected

Setting:

The study was conducted in the outpatient psychiatric and addiction prevention wards of the Qasr Al-Ani University Hospital. It's a government-affiliated hospital that provides free medical diagnostics and free medications to all psychopaths, and there are psychologists to monitor the condition of the patients. Medical and nursing staff provides psychotropic therapy, drug-remedy therapy, psychotherapy, supportive therapy, milieu therapy and cognitive behavioural therapy. These therapeutic approaches are delivered in a variety of settings, including, for example, day-time treatment of elderly patients, rehabilitation therapy, and treatment of neurological and cognitive impairment.

Sample:

A purposive sample of 30 elderly from total number of 100 patients diagnosed with schizophrenia according to DSM-5. The sample size was calculated using a G-power version 3.1.1 for power analysis. A Power of .95 (β = 1-.95 = .05) at alpha .05 (one-sided) was used as the significance level, and effect size= (.03) was utilized.

Inclusion criteria:

1. Age 60 years old or over.
2. Male and Females sex.
3. Fulfilling Diagnostic Criteria of Schizophrenia according to the Diagnostic and Statistical Manual of Mental Disorders – (DSM-5).
4. Able to communicate and answer the questions.

Exclusion Criteria

1. Elderly patients with neurological disorders that can hinder communication such as Epilepsy, Alzheimer, Dementia, or Deliriums.
2. Elderly patients who suffer from physical sensory impairment (blindness or hearing impairment).

Tools of data collection:

Data was collected through utilizing the following tools:

Structured interview questionnaire: This tool was developed by the researchers and includes two parts:

Part 1: Patient demographic characteristics: it includes data about (age, level of education, and gender, and occupation, residence, and marital status.

Part 2: Patient medical history: duration of institutionalization, diagnostic criteria of schizophrenia according to the Diagnostic and Statistical Manual of Mental Disorders – (DSM-5).

Generalized Self- Efficacy Scale (GSES) (Schwarzer, 1992):

It is a 10-points scale to measure the strength of an individual's confidence in their ability to react to new or difficult situations and to overcome any obstacles that may be encountered. It is a self-administered test that usually takes two to three minutes. Each item has four possible answers ranging from the answer 'not at all true' which scores 1 to the answer 'exactly true' which scores 4, and finally summed to give the overall score. The higher the score, the greater is the general sense of self-worth of the individual. Conformity was determined on the basis of an appropriate correlation with other tests. Cronbach's alpha between.76 and.90

Ways of Coping Questionnaire (WCQ): Smyth and **Yarandi (1991)** developed the scale. It was designed to assess patients' thoughts and actions when faced with stressful social events. It is composed of 35 items divided into three sub-schemes. The first sub-scale includes 15 items on active coping, these items describe aggressive efforts to change the situation, for example, I have made a plan of action and I am executing it. The second sub-scale is made up of 10 items reflecting avoidance coping, these items describe wishful thinking and efforts to escape or avoid a problem situation, for example, having a fantasy or wish for how things would turn out. The third sub-scale contains 10 items representing the minimize the situation. It describes the effort to get out of a difficult situation and includes the words, 'Went on as if nothing had happened'.

In the original scale, responses were measured using a four-point Likert scale with the response options not used at all (1), slightly used (2), slightly used very much (3) and very much used (4). In this study, the WCQ rating was changed to the three-point Likert scale, which was used inconsistently, or not at all (1), used slightly (2) and always (3). High scores indicate greater use of this coping strategy. The scale was translated and tested for its content validity by Younis (2004) for the preparation of a Ph.D. dissertation. Cronbach's alpha was 0.90; ICC 2 week reliability was 0.80.

Procedure:

Following the acquisition of official approval from the Research Ethics Committee at the Faculty of Nursing, Cairo University, as well as authorization from the director of the Psychiatry and Addiction Prevention Hospital, the purpose of the study was clearly communicated to the selected participants to obtain their informed consent. Written consent was secured either from the patient or their family, depending on the patient's condition. Data collection was conducted by the researchers using a structured interview, which lasted 45 minutes, employing study tools including socio-demographic data, the pre/post Generalized Self-Efficacy Scale, and the pre/post Ways of Coping Questionnaire. To ensure

confidentiality, participant data were anonymized using a coded identification system.

CBT program:

Preparatory phase:

Preparation of the content: In order to prepare the CBT intervention programme, a review of existing, historical, local and international related literature was carried out. The programming phase includes the programming strategy (timetable, pedagogical methods and assignments to participants for each skill). The content of the programme includes the meaning, symptoms and causes of schizophrenia; the impact of symptoms on elderly schizophrenia patients; the different treatment modalities for schizophrenia; the adverse effects of antipsychotic drugs and the treatment methods; the importance of effective communication skills in families and patients with schizophrenia; the importance of adherence, relapse prevention; and the different ways of reducing stress.

Assessment Phase:

This phase was conducted for one time to collect the study tools including demographic data, pre/post Generalized Self- Efficacy Scale, and pre/post Ways of Coping Questionnaire.

Planning Phase:

CBT program aims to improve the wide range of skills to face symptoms and manage everyday life challenges to improve the mental health and well-being of patients by achieving clinical improvement, improved daily functioning and a better quality of life. The program consisted of 12 sessions, held twice a week, lasting 45 minutes each through individualized and group discussion using media such as videos, posters and brochures.The aim of the sessions was to actively encourage and involve older people with schizophrenia, while ensuring an optimal learning environment and social benefits for the group. During the meetings, personal and orientation information, including the name of the group (chose by the participants), was displayed. The CBT principles of using new ideas, concepts and associations, and of using orientation (both sensually and implicitly), have been adopted. Focus on opinions rather than facts; use of memory as an aid to the present; providing triggers to help recall; creating continuity and consistency between sessions; focus on implicit (rather than explicit) learning; stimulating the tongue; stimulating executive function; and being person-centred. After each session, researchers completed the adherence and participant record forms to maximise adherence to CBT interventions.

Objectives of the program:

1. To enumerate the meaning of schizophrenia and its causes, symptoms, and its effect on the patient and his/her family.
2. To explain different treatment modalities for schizophrenia.
3. To discuss the importance of treatment compliance, signs of relapse in elderly patients with schizophrenia, and explain family role in preventing relapse.
4. To analyse the importance of effective communication skills.
5. To practice coping skills and strategies with stressors arising from patient symptoms.
6. To demonstrate cognitive and behavioural techniques for managing patient′s symptoms.
7. To apply different ways of stress reduction.

Implementation phase:

This phase involves the implementation of a programme sessions. Each session lasted for 15-20 minutes due to short span of attention of elderly patients with schizophrenia. Sessions were held twice a week. Researchers began their intervention with an easy and widely accepted content, followed by a more complex one. At the beginning of each meeting, researchers clarified for 5 minutes the subject for that meeting. Then, study participants were asked to talk about their experiences for five minutes. Researchers taught the selected topic of the session in 30 minutes. In the remaining five minutes, study participants were asked to draw conclusions from the discussion. The content of the intervention programme included: (a) the effect of the symptoms of schizophrenia in elderly patients and the different treatment modalities for schizophrenia; (b) the pharmacological treatment of schizophrenia and the adverse effects and treatment modalities of antipsychotics; (c) the importance of effective coping strategies with the stressors of schizophrenia (electroconvulsive therapy, psychotherapy, rehabilitation therapy and the role of the family in rehabilitation therapy); (d) the importance of treatment adherence and relapse in schizophrenia patients and the role of family in preventing relapse in schizophrenia in elderly patients (risk of suicide); (h) the expressed emotions and emotional environment in the family; (i) the importance of stress-mitigating methods (deep breathing, muscle relaxation, visualization and meditation); and (j) the final session of the intervention programme was aimed at determining the patient's opinion on the benefits of the intervention. The CBT emphasises the need to practise frequently and to use adaptive behaviours and patterns of thought to ensure that these skills are truly generalised and become habitual. During the sessions, study participants practiced the skills they had learned during the study visits. There are homework assignments that are directly related to the specific objectives of the treatment. During the

implementation of the programme, researchers distributed health education leaflets to elderly patients and carers with schizophrenia.

Evaluation Phase:

This is the final phase of the intervention program, during which the post-assessment was conducted. The researcher administered the evaluation to all participants utilizing the pre/post Generalized Self-Efficacy Scale and the pre/post Ways of Coping Questionnaire. This assessment aimed to measure the effectiveness of the intervention program in enhancing self-efficacy and coping skills among elderly individuals with schizophrenia.

Ethical Considerations:

Initial approval was secured from the Ethical Committee of Scientific Research at the Faculty of Nursing, Cairo University on February 21 2023. Additionally, official authorization was obtained from the director of the Psychiatry and Addiction Prevention Hospital. The study's purpose was thoroughly explained to the selected participants, and written informed consent was obtained either from the patient or their family, depending on the patient's condition. Participants were also informed of their right to withdraw from the study at any time. To maintain confidentiality, all study tools were anonymized using coded identification. Cognitive Behavioural Therapy (CBT) sessions were conducted by the researchers in a private setting within the hospital, following a predetermined schedule for program implementation.

Pilot study

A pilot study was carried out on 10% of the sample size to assess the feasibility of the study as well as clarity and objectivity of the tools. No modifications for the questions were done and the pilot sample was included in the study.

Statistical analysis:

The data analysis was conducted using the Statistical Package for the Social Sciences (IBM SPSS, version 22). Descriptive statistical measures, including range, mean, standard deviation, and frequency, were calculated for each participant across all assessments conducted before and after the intervention. Inferential statistical methods were employed to evaluate differences among the study variables. Specifically, a paired t-test was utilized to compare pre-test and post-test scores for quantitative data. A p-value of less than 0.05 was considered statistically significant, while a p-value below 0.001 was regarded as highly significant.

Results:

Table (1): Distribution of age, sex and residence, marital status and educational level among the studied sample (n=30)

Demographic data		No.	%
Age	55 years to less than 65 years	18	60.0
	65 years to less than 75 years	10	33.3
	75 years and more	2	6.7
	Mean ± SD	**65.5±6.6**	
Sex	Male	17	56.7
	Female	13	43.3
Residence	Rural	13	43.3
	Urban	17	56.7
Marital status	Single	21	70.0
	Married	2	6.7
	Widowed	4	13.3
	Divorced	3	10.0
Educational level	Illiterate	3	10.0
	Read and write	7	23.3
	Primary education	13	43.3
	Secondary education	7	23.3

Table (2): Distribution of disease duration and no. of admissions among the studied sample (n=30)

Items		No.	%
Duration of the disease	Less than one year	15	50.0
	One year to less than three years	13	43.3
	3 years and more	2	6.7
	Mean ± SD (in months)	**12.93±7.79**	
No. of admissions	Less than 3 times	26	86.7
	3 times to less than 5	2	6.7
	5 times and more	2	6.7
	Mean ± SD	**1.86±1.59**	

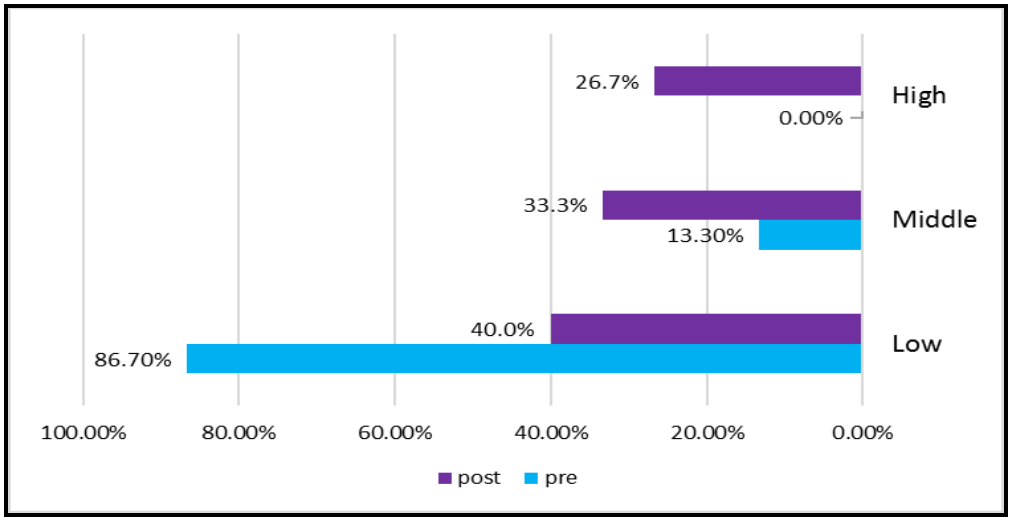

Figure (1): Levels of active coping sub-scale among the studied sample pre-intervention as compared to post intervention (n=30)

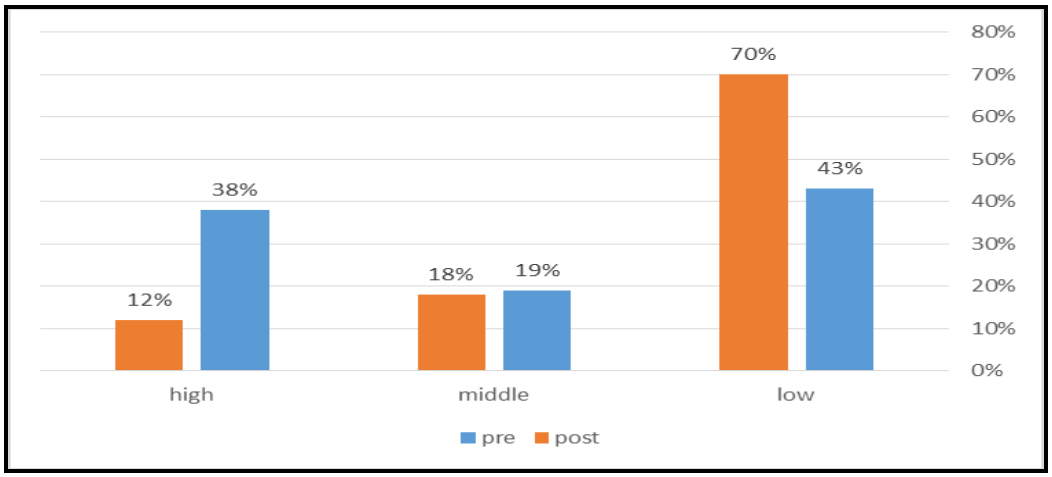

Figure (2): Distribution of avoidance coping subscale among the studied sample pre-intervention as compared to post intervention (n=30)

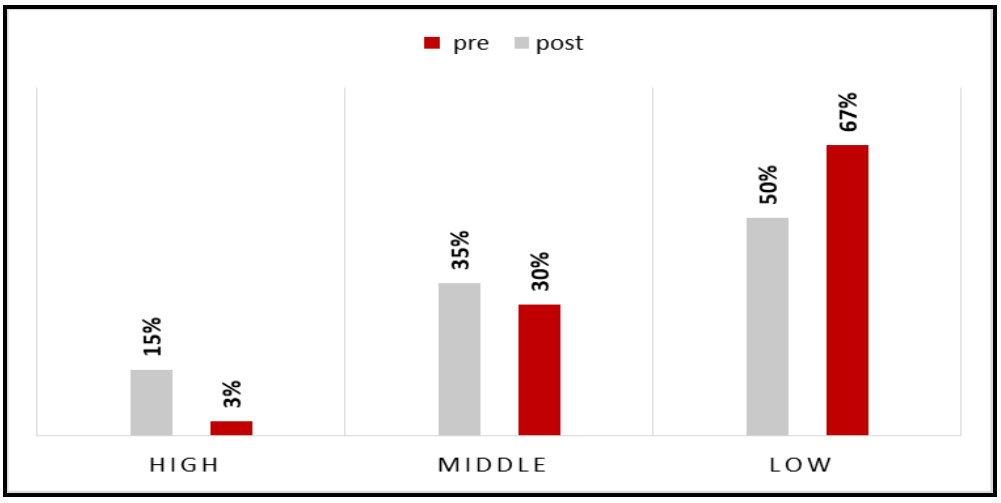

Figure (3): Distribution of minimize the situation coping skills sub-scale among the studied sample pre-intervention as compared to post intervention (n=30)

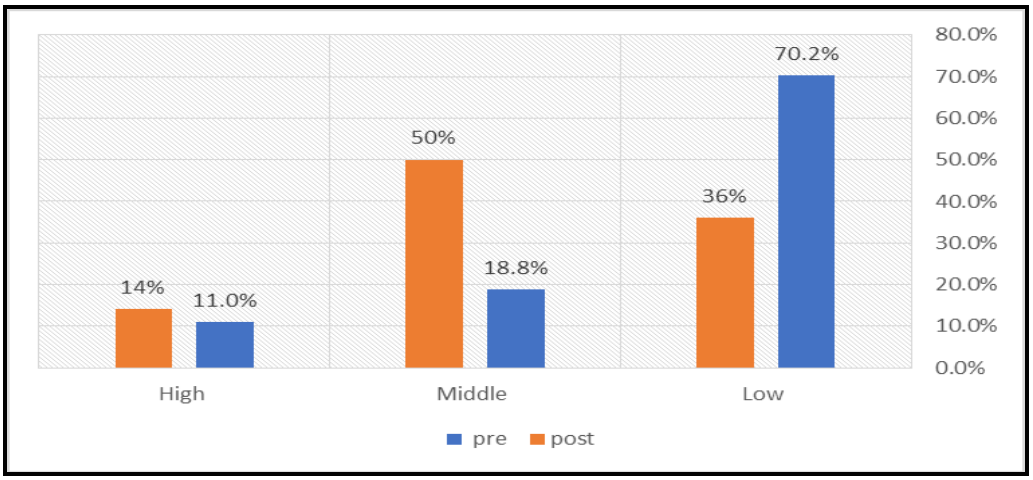

Figure (4): Distribution of total coping skills among the studied sample pre-intervention as compared to post intervention (n=30)

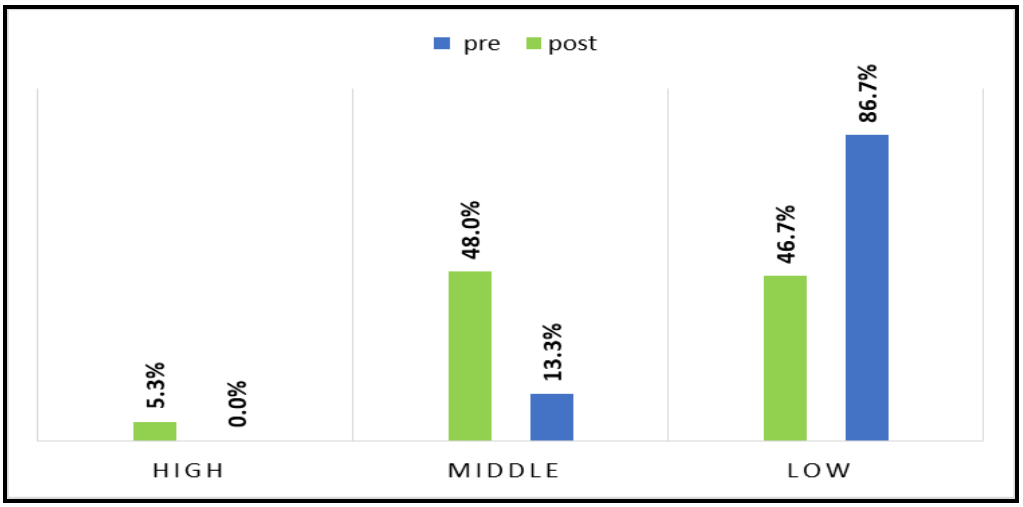

Figure (5): Distribution of level of self-efficacy among the studied sample pre-intervention as compared to post intervention (n=30)

Table (3): Difference between total coping skills, coping skills subscales, and self-efficacy pre and post intervention among the studied sample (n=30)

Study variables	Pre-intervention		Post intervention		Paired t-test	p-value
	Mean	SD	Mean	SD		
Total coping skill scale	63.03	6.68	70.40	7.972	3.747*	.001
Coping skills sub-scale						
Active coping subscale	25.46	6.40	38.80	8.22	7.941**	.000
Avoidance coping subscale	24.63	4.88	16.63	3.04	7.569**	.000
Minimize the situation sub	17.03	3.21	14.96	2.32	3.048*	.005
Self-efficacy	25.46	6.40	38.80	8.22	7.941**	.000

** *Significance level at p<.05* **highly significance level at p<.001*

Table (4): Difference between study variables (copying skills, self-efficacy) in relation to age pre and post intervention among the studied sample (n=30)

Study variables	Age in years		
	55 > 65	65>75	75 and more
	Mean ± SD	Mean ± SD	Mean ± SD
Coping skills pre-intervention	63.3±7.4	61.3 ±5.2	69.0 ±2.8
F / p-value	F= 1.16		P=.327
Coping skills post intervention	74,2±8.7	71.4±7.4	66.00± 0.00
F / p-value	F= 5.120*		P= .017
Self-efficacy pre-intervention	15.3±3.30	14.8±1.5	18.5±2.5
F / p-value	F= 1.469		P= .248
Self-efficacy post intervention	19.3±6.1	16.3±2.5	20.2±1.41
F / p-value	F= 4.56 *		P= .042

Table (5): Effect sizes of coping skills, coping skills subscales, and self-efficacy among the studied sample (n=30)

Study variables	Effect size	Level
Total coping skill scale	8.4	Very large
Coping skills sub-scale		
Active coping subscale	3.3	Very large
Avoidance coping subscale	5.9	Very large
Minimize the situation sub	5.7	Very large
Self-efficacy	3.3	Very large

As demonstrated in **Table (1),** approximately two-thirds (60%) of the participants in the study were between the ages of 55 and 64, while one-third were aged between 65 and 74. The mean age of the sample was 65.5 years, with a standard deviation of 6.6. Furthermore, more than half of the participants (56.7%) were male, and an equal proportion (56.7%) resided in urban areas. It also indicated that approximately 70% of the examined samples are unmarried, while nearly 43.3% had attained only a primary level of education.

As indicated in **Table (2),** half of the study sample had been diagnosed for less than one year, while approximately 43.3% had been diagnosed for a period ranging from two to less than three years. The mean duration of diagnosis was 12.9 months, with a standard deviation of 7.79 months. Additionally, the majority of participants (86.7%) had been admitted to psychiatric hospitals fewer than three times, with an average admission rate of 1.86 and a standard deviation of 1.59.

As depicted in **Figure (1),** most of the studied sample (86.7%) exhibited a low level of active coping prior to the intervention, whereas this percentage decreased to 40% following the intervention. Furthermore, over one-quarter of the participants (26.7%) demonstrated a high level of active coping after the intervention, in contrast to the complete absence of such levels before the intervention.

Figure (2): Distribution of avoidance coping sub-scale among the studied sample pre-intervention as compared to post intervention (n=30)

As illustrated in Figure (2), nearly half of the studied sample (43%) exhibited a low level of avoidance

coping prior to the intervention, which increased to 70% following the intervention. Furthermore, over one-third (38%) of the participants demonstrated a high level of avoidance coping before the intervention, whereas this percentage decreased to 12% post-intervention.

Figure (3): Demonstrated that prior to the intervention, over two-thirds (67%) of the studied sample exhibited a low level of utilizing coping skills aimed at minimizing the situation. However, this percentage decreased to half of the sample following the intervention. Additionally, only 3% of participants demonstrated a high level of using these coping skills before the intervention, whereas this proportion increased to 15% after the intervention.

Figure (4): Demonstrates that prior to the intervention, 70.2% of the studied sample exhibited a low level of coping skills. However, following the intervention, this percentage decreased to 36%. Additionally, the proportion of participants demonstrating a moderate level of coping skills increased from 18.8% before the intervention to 50% afterward. Furthermore, the figure indicates that 14% of the studied sample reported a high level of coping skills post-intervention, compared to 11% before the intervention.

As illustrated in **Figure (5),** majority of the studied sample (86.7%) demonstrated a low level of self-efficacy before the intervention, which decreased to 46.7% after the intervention. Additionally, 13.3% of participants exhibited a moderate level of self-efficacy prior to the intervention, increasing to 48% post-intervention. Furthermore, while no participants reported a high level of self-efficacy before the intervention, this percentage rose to 5.3% following the intervention.

Table (3): Demonstrates a highly statistically significant difference between pre- and post-intervention concerning active coping, avoidance, minimizing the situation, and overall coping skills. The respective t-values for these variables are 7.941, 7.569, 3.048, and 3.747, with p-values of .000, .000, .005, and .001. Furthermore, a statistically significant difference was also observed in self-efficacy between the pre- and post-intervention phases, with a t-value of 7.941 and a p-value of .000.

As demonstrated **in Table (4)**, statistically significant differences were identified among various age groups concerning coping skills and self-efficacy following the intervention, with F-values of 5.120 and 4.56 at p-values of .017 and .042, respectively. Furthermore, the table indicates that the highest mean score for coping skills post-intervention was observed in individuals aged 75 years and older, and similarly, the highest mean score for self-efficacy was also recorded within this age group.

Table(5): Illustrates that the effect sizes for the total coping skills scale, its subscales, and overall self-efficacy are significantly large, as they exceed 1.3. This suggests that the Cognitive Behavioural Therapy (CBT) intervention program had a substantial impact, as evidenced by the considerable relative difference between the pre- and post-intervention mean scores.

Discussion

Cognitive Behavioural Therapy (CBT) is an evidence-based psychotherapeutic approach that emphasizes the interconnectedness of thoughts, behaviours, and emotions in older adults. This therapeutic method enables elderly individuals to develop awareness of their cognitive and behavioural patterns, particularly examining how these influence their emotional well-being. Cognitive Behavioral Therapy's present-focused approach enables the development of competencies for identifying and restructuring dysfunctional cognitions and behavioral patterns. Substantial empirical evidence validates its efficacy across a diverse range of geriatric mental health conditions **(Beck & Beck, 2023).** Through targeting current cognitive distortions rather than historical antecedents, CBT equips older adults with practical strategies to challenge negative thought patterns and implement adaptive behavioral responses, resulting in clinically significant symptom reduction and improved functional outcomes **(Gallagher-Thompson et al., 2024)**.

Most of the study sample consisted of male participants residing in urban areas, with a mean age of 65.5 years. Most individuals were single, and less than half had attained primary education. In terms of medical history, approximately half of the participants were diagnosed with schizophrenia within the past two to three years, with an average duration of illness of one year. Additionally, the majority had been admitted to psychiatric hospitals one or two times, with a mean of 1.86 admissions and a standard deviation of 1.59. These demographic characteristics provide critical context for assessing the intervention's relevance and potential generalizability. In a related study, **Bernhard et al. (2018)** examined 40 elderly German patients with schizophrenia in a study titled "Modified Cognitive Behavioral Therapy for Elderly Patients with Schizophrenia: A Randomized, Controlled Pilot Trial" and reported comparable findings, with a mean participant age of 60 years.

Regarding coping skills among elderly patients with schezophrenia, the findings revealed a statistically significant improvement in overall coping abilities ($p = .001$) as well as in individual coping subscales following the intervention. Notably, active coping strategies exhibited the most substantial enhancement,

with the mean score increasing from 25.46 pre-intervention to 38.80 post-intervention ($p < .000$). Furthermore, the results indicated a large effect size concerning coping skills and their subscales, highlighting the practical significance of the intervention program. This considerable improvement suggests that the intervention successfully provided participants with more effective and adaptive coping mechanisms.

The present findings are consistent with recent research highlighting the significance of adaptive coping strategies in the management of psychiatric disorders. **Antoni et al. (2001)** reported similar outcomes, particularly noting a significant reduction in avoidance coping, with scores decreasing from 24.63 to 16.63 ($p < .000$), as well as a decline in the tendency to minimize situational challenges, from 17.03 to 14.96 ($p = .005$). These results further underscore the effectiveness of the intervention in fostering more adaptive coping mechanisms among participants.

The findings of the present study are further supported by **Agbor et al. (2022),** carried out a systematic review about the role of cognitive behavioural therapy in the management of psychosis. The findings in this systematic review suggest that CBT leads to a decrease in psychotic and affective symptoms and improves functioning and play a preventive role in the onset of first-episode psychosis and contribute to positive changes in cognition, mood, sleep patterns, quality of life, self-esteem, and overall psychological well-being. Additionally, **Agbor et al. (2022)** study reported a reduction in depression and hospitalization rates. From the perspective of the current researchers, CBT has been widely endorsed by various international guidelines as the gold-standard treatment for addressing the needs of elderly patients with schizophrenia. Therefore, its integration into nursing care plans is highly recommended.

Similarly, **Berry et al. (2014),** in a mixed-methods evaluation study of a pilot psychosocial intervention group for older adults with schizophrenia, found that participants highly valued the social interactions facilitated by the group. Moreover, attending the sessions led to tangible improvements in their daily lives. The study also indicated that the intervention could help mitigate some of the secondary disabilities associated with schizophrenia and was well-received by older adults, highlighting its acceptability and potential benefits for this population.

Regarding the enhancement of self-efficacy, the intervention demonstrated a significant impact. Prior to the intervention, 86.7% of participants exhibited low self-efficacy levels; however, this percentage markedly decreased to 46.7% post-intervention. Additionally, 5.3% of participants attained high self-efficacy levels following the intervention, compared to none at baseline. These findings suggest that the CBT intervention program effectively fostered an environment that facilitated these positive changes. Furthermore, the results indicate that the program holds substantial practical significance, as it demonstrated a large effect size in improving self-efficacy among participants.

These findings align with Bandura's Social Cognitive Theory (1997), which suggests that self-efficacy can be enhanced through mastery experiences, observational learning, and psychological support. Additionally, the results of the present study are consistent with those of **Granholm et al. (2013),** who conducted a randomized controlled trial on cognitive behavioural social skills training for older adults with schizophrenia. This study reported significant improvements in motivation, depression, anxiety, self-esteem, and overall life satisfaction among elderly participants, further supporting the effectiveness of cognitive behavioural interventions in this population.

Furthermore, **Sharma & Halder (2020)** examined the efficacy of Cognitive Behavioural Therapy (CBT) in the treatment of elderly patients with chronic, treatment-resistant schizophrenia through a case report. Their Study focused on an elderly Indian woman diagnosed with treatment-resistant paranoid schizophrenia who underwent CBT-based intervention. The findings indicated significant improvements in psychosocial functioning, achievement of treatment goals, and reduction in symptom severity. These results highlight the potential effectiveness of CBT in managing complex cases of schizophrenia and underscore the multifaceted challenges faced by individuals with the disorder. The study also extends the application of CBT beyond the brief treatment of delusions and hallucinations, demonstrating its utility in addressing a broad spectrum of difficulties encountered over the long-term course of schizophrenia.

With respect to age-related differences in intervention outcomes, an especially noteworthy finding was the varying response to the intervention across different age groups. Participants aged 75 years and older demonstrated the highest mean scores in post-intervention coping skills (69.0 ± 2.8) and self-efficacy (20.2 ± 1.41), with statistically significant differences ($p = .017$ and $p = .042$, respectively). These results suggest that older participants may have benefited more substantially from the intervention in comparison to their younger counterparts.

These finding challenges traditional assumptions regarding age-related constraints on psychological adaptability. While previous research has frequently

characterized older adults as less receptive to psychological interventions, the present results indicate significant neuroplasticity and capacity for personal development, even among elderly individuals with psychiatric conditions **(Wang et al., 2024).**

To sum up older adults with a range of mental health problems can benefit from cognitive-behavioural therapy.

Strength, limitations and Future Directions: While the results are promising, the current study is considered one of the scarce studies that focus on CBT among elderly people with schizophrenia. Although sample size enabled researchers to follow-up elderly patients closely during CBT sessions, it was one of the study limitations that must be acknowledged. Second, the sample was recruited by non-probability sampling method, so the sample representativeness was limited.

Conclusion

This study provides compelling evidence for the potential of targeted CBT nursing interventions in enhancing coping skills and self-efficacy among psychiatric patients, with particularly promising outcomes for older populations. In addition, that the results showed that the applied intervention has a practical importance and significance so, it is useful for elderly people diagnosed with schizophrenia.

Recommendations

1- Develop larger randomized controlled trials that can compare CBT to other psychotherapies to identify specific neurobiological predictors and outcomes
2- Replication of the study on a larger scale of elderly schizophrenia elderly patients to gain more generalizations
3- Implement CBT programs into elderly schizophrenia elderly patients' routine nursing care.
4- Further Study is needed abut continuous training of psychiatric and gerontological nurses about CBT for the treatment of schizophrenia among elderly.

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