

Original Article

## The effect of cognitive-behavioral group training of self-care skills on self-care in patients with schizophrenia

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### ABSTRACT

**Background & Aim:** Self-care is one of the challenges of the health care system in patients with schizophrenia. It has been less studied due to these patients have no insight into the symptoms. This study aimed to determine the effect of cognitive-behavioral group training on self-care skills in patients with schizophrenia.

**Methods & Materials:** This single-blind randomized controlled clinical trial (blinding of data analysts) was performed on 50 hospitalized schizophrenia patients by convenience sampling method and random block allocation to the intervention (n=26) and control (n=24) groups in Ebn-Sina Psychiatric Hospital of Mashhad, Iran from late July 2020 to mid-January 2021. The intervention group received cognitive-behavioral group training of self-care skills based on Kashani Lotfabadi et al. (2020) protocol in 10 sessions (two sessions per week). The control group was placed on a waiting list. Data collection tools included the Self-Care Requisites Scale (SCRS-H) and the Positive and Negative Syndrome Scale (PANSS). The data were analyzed by SPSS 25 version, repeated measures of ANOVA test.

**Results:** 60 % (n=30) of participants were female, and 40% (n=20) were male with a mean age of 32.98±8.35 years. The results of repeated measures of ANOVA indicated a significant difference between the intervention and control groups in terms of descending mean score of total self-care during the test stages (p=0.001).

**Conclusion:** Cognitive-behavioral group training of self-care skills could promote self-care behaviors in patients with schizophrenia. Therefore, we suggest using this intervention to strengthen self-care skills in patients with schizophrenia.

## Introduction

Schizophrenia is a major health problem that imposes a heavy burden on the health care system at national, regional, and global levels worldwide (1). According to the Global Burden of Disease (GBD) criteria (2016), this disease is the twelfth disability disorder (2). One of the complications of this disease is a recurrence of symptoms, leading the patients to gradually lose their self-care skills due to interference in various areas of their lives (3, 4). Self-care performance in patients with schizophrenia might include a significant reduction in functional skills pertinent to basic and advanced care needs (5, 6). It can also indicate a lack of dominance

and independent performance of these patients in activities of daily living (ADL) as well as instrumental activities of daily living (IADL) (7, 8). Moreover, lack of self-care skills in observing principles of personal hygiene and poor tidiness of patients with schizophrenia can affect their social relationships as well as their chance of success in society (9) and reduce their level of independent living, employment, and social participation (6). Therefore, such patients' ability to independently perform their daily activities is a standard of care needing attention to strengthen their self-care skills (10).

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lower score indicates less self-care deficit (28). Roldán-Merino (2017) confirmed the validity characteristics of the Self-Care Requisites Scale on 264 patients diagnosed with schizophrenia based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (28). In the present study, it was first translated into Persian by two fluent translators. The approved Persian translation was again translated into English by two other translators. The English and Persian translations were finally compared and approved by another translator, who was fluent in English and Persian. Next, the Persian translations of the scale were reviewed by a team of 10 clinical psychologists, psychiatrists, and psychiatric nurses. Then, they confirmed the most eloquent Persian translation with CVI=0.79 and CVR=0.83. As Roldán-Merino et al. (2017) confirmed the scale's reliability by the internal consistency method with a Cronbach's alpha of 0.94 for the whole scale (28). In the present study, we also confirmed the scale's reliability by the internal consistency method for the whole scale with a Cronbach's alpha of 0.88.

The standard Positive and Negative Syndrome Scale (PANSS) was designed by Kay et al. (1967) to evaluate the positive, negative, and general psychopathological symptoms of schizophrenia. Evaluators complete this scale. It consists of 30 questions or 7-choice items scored on a 7-point scale, namely absence= 1, very mild= 2, mild= 3, moderate= 4, almost severe= 5, severe= 6, and very severe= 7. Among the assessed items, 7 items are about positive symptoms, 7 items are about negative symptoms, and the remaining 16 items are about general psychopathology. PANSS is calculated by summing up the scores of each item. Scores of the positive and negative symptoms subscales range from 7 to 49, while the general psychopathology subscales range from 16 to 112 (29). Peralta et al. (1994) evaluated and confirmed the validity characteristics of PANSS on 100 patients with schizophrenia. Furthermore, using the inter-rater reliability method with inter-class correlation coefficients (ICC), they obtained

the reliability of 0.72, 0.80, and 0.56 for positive, negative, and general psychopathology scales, respectively; these values indicate acceptable reliability for positive and negative scales as well as moderate reliability for general psychopathology scale (30).

Moreover, in the present research, by convenience sampling method and based on the inclusion criteria, the sample units were randomly assigned to the intervention (n=26) and control (n=26) groups using the randomized block design. First, a list of eligible patients to participate in the study was prepared through clinical interviews and inpatient records. Next, the patients were registered to participate in the study after obtaining written consent from both patients and their guardians. Then, registered patients were assigned into two groups of A and B, and 13 four-item blocks (AABB, ABAB, BABA,...) were determined based on the sample size. The blocks were later numbered from 1 to 13. Through the table of random numbers, the sequence of entry of the blocks into the study and the allocation of patients to the intervention and control groups were specified before the intervention. To hide random allocation, a number of envelopes were prepared based on the sample size, each random sequence was recorded on a card, and the cards were placed in the envelopes in order. The envelopes were numbered in the same way on the outer surface. Finally, the lids of envelopes were glued, and they were placed in a box in order. At the beginning of the registration process of each eligible participant, an envelope was selected to determine the assignment of the participant to a particular group. Besides, the randomization process was performed by a researcher who was not involved in the intervention process to reduce the possible bias in the randomized assignment. Further, data analysis was performed by evaluators who were blind to the treatment protocol and appointment of participants to intervention and control groups.

In the intervention group, cognitive-behavioral group training of self-care skills was performed based on the protocol by





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In the current study, 60% (n=30) of participants were female, and 40% (n=20) were male, with a mean age of 32.98±8.35 years. There was no statistically significant

difference between the intervention and control groups in terms of the characteristics of patients with schizophrenia ( $P>0.05$ ) (Table 2).

**Table 2.** Characteristics of patients with schizophrenia in the intervention and control groups

Variable	Group	Intervention	Control	Test results
		n=26	n=24	
		N (%)	N (%)	
Gender	Female	16(61.5)	14(58.3)	p= 1.00*
	Male	10(38.5)	10(41.7)	
Level of education	Third secondary	11(42.3)	12(50.0)	X <sup>2</sup> = 0.91 p= 0.63**
	Diploma	12(46.2)	8(33.3)	
	Academic education	3(11.5)	4(16.7)	
Marital status	Single	8(30.8)	9(37.5)	X <sup>2</sup> = 0.91 p= 0.63**
	Married	10(38.5)	12(50.0)	
	Widow	2(7.7)	0(0.0)	
	Divorced	6(23.1)	3(12.5)	
Employment status	Unemployed	14(53.8)	8(33.3)	X <sup>2</sup> = 3.17 p= 0.37**
	Freelance	10(38.5)	15(62.5)	
	Employee	1(3.8)	0(0.0)	
	Retired	1(3.8)	1(4.2)	
Habitat	Urban	21 (80.8)	19(79.2)	p= 1.00*
	Rustic	5(19.2)	5(20.8)	
Quantitative variables		Mean±SD	Mean±SD	Test results
Age (years)		33.28±9.31	32.68±7.45	t=0.05 p=0.80***
Duration of the disease (year)		1.92±0.81	2.24±0.78	z=1.44 p=0.16****
Number of hospitalizations		1.76±0.72	1.52±0.58	z=1.35 p=0.25****
Positive symptoms		26.99 ± 4.01	30.20±5.53	t=1.53 p=0.14***
Negative symptoms		33.42±7.07	31.00±3.65	t=0.95 p=0.36***
Symptoms of general psychopathology		66.35±9.61	70.30±7.15	t=1.06 p=0.30***

\*Fisher exact test, \*\*chi-square, \*\*\* Independent t-test, \*\*\*\*U- Man-Whitney

The results of the independent t-test also showed no significant difference between the intervention and control groups before the intervention in terms of mean total scores of self-care ( $P= 0.17$ ) and subscales, including proper conservation of water, food, and air storage ( $P= 0.49$ ), excretory needs ( $P=0.19$ ), maintenance of the balance between activity and rest ( $P=0.45$ ), maintenance of the balance between periods of loneliness and social interaction ( $P= 0.30$ ), prevention of life-threatening dangers ( $p=0.38$ ), and promotion of proper functioning and development of human group activities ( $p= 0.15$ ).

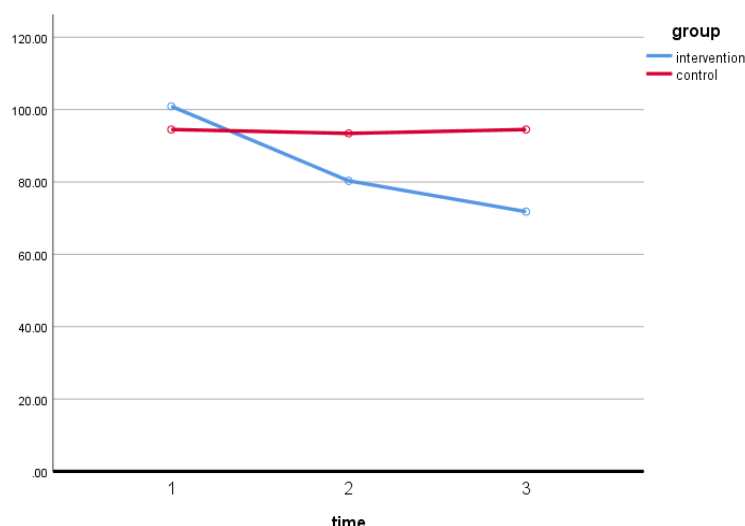
Before running the repeated measures ANOVA test, its assumptions (the normal distribution of dependent variables and sphericity) were evaluated. The first

assumption was confirmed using the Kolmogorov-Smirnov test ( $P<0.05$ ). In contrast, when the second assumption was assessed using the results of Mauchly's sphericity test, it showed a lack of significance in all of the self-care scale and its subscales; hence, the adjusted statistic in the Greenhouse-Geisser correction test was utilized to present the main results of the repeated-measures ANOVA.

On the other hand, the results of within-subject effects of repeated measures analysis of variance indicated that the measurement time had a significant effect on reducing the mean total score of self-care ( $p<0.001$ ). It was also observed for the subscales, such as the proper conservation of water, food, and air storage ( $p= 0.04$ ), excretory needs ( $p<0.001$ ),







**Figure 2.** The trend of changes in the mean score of total self-care during the test stages

## **Discussion**

The present study aimed to determine the effect of cognitive-behavioral group training on self-care skills in patients with schizophrenia. The results revealed that cognitive-behavioral group training of self-care skills could abate self-care needs and other needs related to the proper conservation of water, food, and air storage, excretory needs, the maintenance of the balance of activity and rest, as well as the maintenance of the balance between periods of loneliness and social interaction in patients with schizophrenia.

The present study used cognitive-behavioral therapy to teach self-care skills to patients with schizophrenia for the first time. In line with the current research, previous studies indicate that educational interventions in patients with schizophrenia could improve their self-care knowledge and skills to meet their physical needs (5) and take oral health care, such as brushing and using toothpaste (15). Other studies concluded that compared to education, cognitive-behavioral therapy could have a longer effect on strengthening self-care behaviors of hemodialysis patients (23); they also highlighted that cognitive-behavioral therapy could improve nulliparous outcomes (31) and enhance self-care behaviors in women with diabetes by focusing on self-care (33). Even though these studies were conducted on patients with

physical problems who were different from patients with schizophrenia in terms of insight into symptoms and responsibility for self-care behaviors, their results are consistent with the present study results.

Schizophrenia includes a wide range of positive, negative, and cognitive symptoms (33). Negative symptoms and cognitive impairments are the main factors affecting the functional capacity of patients with schizophrenia (34, 35) and are associated with greater functional consequences than positive symptoms (36). Negative symptoms often predict the severity of social deficits (interpersonal interactions), while cognitive deficits often predict deficits in daily living and work (35).

Activities of daily living mainly include skills needed for self-care and management of physical needs (37). Such activities are more resistant to cognitive decline than instrumental activities of daily living (38). However, the ability to perform both activities of daily living and the instrumental activities of daily living are affected by cognitive ability (reasoning and planning). Therefore, it is important to distinguish between personal abilities to complete a task and the ability to perform it without asking for others' help. In this regard, patients' ability can be assessed by asking questions about cognitive, emotional, and behavioral



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## **Conflict of interest**

This article has no conflict of interest.

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