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Assessment of Living Skills in Schizophrenic Patients by Kohlman Evaluation

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Abstract

***Background*:** The living skills of schizophrenic patients are disrupted due to cognitive, perceptual, sensory-motor, psychological, and psychosocial problems. Therefore, the identification of some aspects of living skills that require medical intervention is essential in these patients. Accordingly, in this study, the living skills of schizophrenic patients were investigated with the Kohlman Evaluation of Living Skills.

***Materials and Methods*:** This study was conducted by using the cross-sectional descriptive and analytic approach in which 35 hospitalized and 51 outpatient schizophrenic patients and 35 healthy individuals were compared and the areas of living skills that needed help were determined.

***Results*:** According to the Kruskal-Wallis test, there was a significant difference between the mean scores of healthy, hospitalized and outpatients subjects, whereas the difference in the means scores was not significant between the two groups of patients (p=0.693). Schizophrenic patients showed more than 50% requirement for help in the following subscales; appearance, awareness of dangerous household situations, appropriate action for sickness and accidents, obtaining and maintaining a source of income, budgeting their monthly income, and leisure activities. Employment had a direct effect on the living skills of the subjects and the test mean scores of employed people (2.409) was better than unemployed persons (7.083).

***Conclusion*:** The living skills of schizophrenic patients are damaged in some areas through the course of the disease and its symptoms. Based on the Kohlman Evaluation of Living Skills, these people require most help in self-care, safety health, money management, and leisure activities.

Introduction

The activities of daily living are defined as the part of daily life that includes areas of self-care, work, leisure activities and games (The American Occupational Therapy Association) [1]. Competence in performing daily living skills is necessary for an independent life. People must be able to perform their required activities or know the sources by which these activities are carried out by others [2]. Schizophrenia can affect various domains so fan individual's work performance. The progress of this disease often impairs the sensory-motor, cognitive, and psychosocial integration. Thus, most patients with schizophrenia cannot meet the expectations of the community related to natural function (even when the disease is controlled by medication) [3].

Schizophrenic patients encounter different functional impairments, including difficulty in independent living skills, social functions, access to jobs, and occupation-academic performance. Improving the performance of these patients is one of the health system's priorities [4]. Schizophrenic patients, compared to healthy controls, have greater functional disability in the activities of daily living (Klapow and Peterson), following medication consumption (Fenton and Peterson), and social function [5]. Stuart and Sundeen believe that the main purpose of individuals' rehabilitation is to help the person in development of independent living skills; these skills must first be evaluated and then designed proportional to treatment plan needs [6].

Several studies in different countries have investigated the living skills of schizophrenic patients through various tests in inpatient and outpatient groups or in comparison with healthy subjects or other psychotic disorders; previous studies have shown that individuals' performance on living skills significantly decreases in patients with schizophrenia and other psychotic disorders compared with healthy people [7-10]. In the study conducted by Klapow et al. the performance of hospitalized schizophrenic patients was lower than outpatients, and in general the performances of both groups were lower than normal people [11].

The present study has examined the living skills of inpatients and outpatients in comparison with the living skills of healthy people in order to provide more comprehensive findings. With respect to the necessity of evaluation of the living skills in schizophrenic patients for treatment planning, the aim of this study was to determine the areas requiring therapeutic interventions in the living

skills of these patients. Different cases of performance assessment in the areas of living skills were designed in the form of self-assessment, therapist's reports, direct observations, and recently, performance-based assessment [5]. Since the efficacy of the Kohlman Evaluation of Living Skills in diagnosis of necessary care and support services for a healthy life has been emphasized indifferent studies, it was used in the present research [12].

Materials and Methods

This research is a non-interventional study conducted as cross-sectional descriptive and analytic study. The statistical population consisted of the outpatients who were referred to the Sina daily clinic and hospitalized patients in Razi psychiatric hospital in Tehran, during a three-month period in 2007. Sampling was done through the available method; thus, 35 schizophrenic outpatients and 51 schizophrenic inpatients were selected by considering the following criteria:

Men over 20 years (because living skills are bringing to perfection in adults and have a natural course until midlife), diploma and lower education (to exclude confounding factors), and those who were treated with drugs (medication help to control symptoms and not consumption of it causes the interference of real living skills of patient with disease symptoms) [13].

To answer to the hypothesis whether the healthy people are independent in all areas of living skills and to compare schizophrenic patients with normal individuals, 35 healthy subjects of the community were evaluated based on the inclusion criteria. These patients were selected from patients' families; hence, they had similar situations in terms of culture, socio-economic situation, and religion. The lack of mental illness history and consumption of psychiatric drugs were investigated in them. The three groups of inpatients, outpatients, and healthy subjects were matched according to age, education, gender, and marital status.

The Kohlman Evaluation of Living Skills, designed by Linda Kohlman Thomson in 1978, is one of the formal common evaluations of occupational therapy which can assess the living skills in patients with schizophrenia. The test provides information about the patient's ability to independently perform life activities [14]. The Kohlman Evaluation of Living Skills is very simple in terms of learning and test equipment preparation, and can be performed and scored in a short time (30-45 minutes). This test is applicable on different patients and various care departments [15].

In the Kohlman Evaluation of Living Skills, 17 living skills in five areas of self-care, safety and health, money management, transportation and telephone, work and leisure are assessed through interview, observation, and doing tasks [7].

Prior to the beginning of the research, the Kohlman Evaluation of Living Skills was translated into Farsi by the researcher and its reliability and validity were examined. Then, the translated version of the test was reviewed and approved by two experts (face validity). To evaluate the reliability of the test, the assessment results of two raters (inter-rater reliability) were compared in 30 outpatients and the correlation coefficient and intra-class correlation coefficient were obtained as r=0.997 and ICC=0.997, respectively (p<0.001). The results of the test-retest (test-retest reliability) in 24 outpatients (r=0.967and ICC=0.966), indicate that the test had a good reliability. The concurrent validity was determined by calculating the correlation between scores of the Kohlman test and the global assessment scale in 35 inpatients and the correlation coefficient between two tests was obtained r=-0.688 (p<0.001), the ability to discriminate the living skills of healthy subjects from patients demonstrated the construct validity of the Kohlman Evaluation of Living Skills [16].

The Kohlman Evaluation of Living Skills was performed in outpatient, inpatient, and healthy people; subsequently, mean scores were compared with each other in the three groups, and the areas requiring intervention in the patients group were determined in order to plan the treatment.

Obtaining informed consent from the patients and their families in performance of the study, preservation of the names and patient characteristics, providing referral for Sina hospital and Razi clinic, obtaining their consent to do the test, ensuring the patients that they can withdraw from participating in the test interview at any time they wish, were the cases that have been observed in the test.

Results

The Distribution of the Kohlman Evaluation of Living Skills scores in the three groups of inpatients, outpatients, and healthy subjects was normal. When evaluating background variables, the age (p=0.077) and marital status (p=0.218) variables had an equal distribution among the three groups of healthy individuals, inpatients, and outpatients, but the employment variable did not show an equal distribution among these three groups (p<0.001) (Table 1).

To compare the mean scores between the three groups, variance analysis was performed, but the variance of the Kohlman Evaluation of Living Skills score was not equal in the three groups(p<0.001);thus, in order to the test scores mean of the three groups, the Kruskal-Wallis test was used. The results of this test indicated that at least one of the means was different with the other groups (p<0.02) (Table 2).

To further investigate the difference in the mean of studied groups, in the posthoc test, Tamhane's statistics showed that test mean scores in the healthy individuals had significant differences both within patients and outpatients (p=0.001), while there was no difference between test scores of the outpatients and the inpatients, and the mean scores of these groups were equal (p=0.693).

When comparing Kohlman Evaluation of Living Skills scores of the three groups, it was seen that all healthy

subjects were independent in the test scores, while 60% of the inpatients and 70.6% of the outpatients needed help. Investigating the subscales of the Kohlman Evaluation of Living Skills showed that inpatients and outpatients had required more than 50% help in appearance (outpatient 82.4%, inpatient 88.6%), awareness of dangerous household situations (outpatient 82.4%, inpatient 85.7%), identification of appropriate action for sickness and accidents (outpatient 86.3%, inpatient 77.1%), obtain and maintain source of income (outpatient 70.6%, inpatient 60.0%), budgeting of monthly income (outpatient 96.1%, inpatient 88.6%), and leisure activities (outpatient 82.4%, inpatient 88.6%) subscales (Table 3).

As shown in table 1, the occupation variable did not display an equal distribution in three groups of healthy individuals, in patients, and outpatients (p<0.001).To remove the occupation impact on the Kohlman Evaluation of Living Skills among the three groups (normal subjects, in patients, and outpatients), variance analysis performed on the effects of occupation and type of group became significant (p=0.001). Due to the remaining of the main effects of occupation and type of group on the variance analysis model, it can be concluded that in addition to variety of the Kohlman test scores in healthy subjects and patients, this difference exists again after giving the effect of the occupation variable, and the mean test score of employed persons are higher than unemployed ones. As seen in table 4, the mean score of the test in inpatients group was totally 6.271.Butwhen the occupation variable entered into the variance analysis model as a confounding factor, the test score became 7.060 in employed and 4.300 in unemployed people; this difference was also observed in other groups.

Table1. The evaluation of the demographic variables (age, marital status, and employment) in three groups of healthy individuals, inpatients, and outpatients

Group			Normal	Inpatient	Outpatient	p-Value
Age	Mean		38.63	33.20	35.80	0.077
	SD		11.154	8.921	9.648	
	F-Value		2.627			
Marital Status	Single	N	24	22	39	0.218
		P	68.6	62.9	76.5	
	Married	N	11	13	12	
		P	31.4	37.1	23.5	
	x^2-value		3.043			
Employment	Employed	N	29	10	16	0.001
		P	82.9	28.6	31.4	
	Unemployed	N	6	25	35	
		P	17.1	71.4	68.6	
	x^2-value		27.621			

Table 2. A comparison of the mean scores of the Kohlman Evaluation of Living Skills in three groups of healthy individuals, inpatients, and outpatients based on the Kruskal-Wallis test

Group	N	Mean	SD	x^2-value	p-Value
Inpatient	35	6.271	3.028		
Outpatient	51	6.931	3.049	69.714	0.020
Normal	35	0.771	0.975		

Table 3. The distribution of subjects according to their needs to help in Kohlman Evaluation of Living Skills subscales in inpatients and outpatients

Schizophrenic Patient	Outpatient (N=35) Need Assistance	Outpatient (N=35) Need Assistance
Subscales	N(P)	N(P)
Appearance	42(82.4)	31(88.6)
Frequency of self care activities	15(29.4)	3(8.6)
Awareness of dangerous household situations	42(82.4)	30(85.7)
Identification of appropriate action	44(86.3)	27(77.1)
Knowledge of emergency numbers	18(35.3)	26(30.2)
Knowledge of location of medical and dental facilities	46(53.3)	8(22.9)
Use of money in purchasing items	17(33.3)	16(45.7)
Obtain and maintain source of income	36(70.6)	21(60.0)
Budgeting of money for food	49(96.1)	31(88.6)
Use of banking forms	17(33.3)	12(34.3)
Payment of bills	8(15.7)	9(25.7)
Mobility within community	17(33.3)	3(8.6)
Basic knowledge of transit system	9 (17.6)	4(11.4)
Use of phonebook and telephone	21(41.2)	13(37.1)
Plans for future employment	14(27.5)	16(45.7)
Leisure activity involvement	42(82.4)	31(88.6)
Total Score	36(70.6)	21(60.0)

Table 4. The mean scores of Kohlman Evaluation of Living Skills in healthy subjects, inpatients, and outpatients, separately in two occupational groups

Work \ Group		Normal	Inpatient	Outpatient	Total
Employed	N	29	10	16	55
	Mean	0.672	4.300	4.375	2.409
	SD	0.975	2.149	2.493	2.533
Unemployed	N	6	25	35	66
	Mean	1.250	7.060	8.100	7.083
	SD	0.785	2.997	2.540	3.230
Total	N	35	35	51	121
	Mean	0.771	6.271	6.931	4.959
	SD	0.975	3.027	3.049	3.742

Discussion

A in the present research, the Kohlman Evaluation of Living Skills was carried out on three groups of healthy individuals, hospitalized patients, and outpatients. There was a difference between the mean test scores of the healthy subjects with hospitalized patients and outpatients, while no difference existed between test scores of outpatients and inpatients, and the mean scores of these groups were equal.

In a research performed by Tatichi in the state of Washington, USA, on 20 patients who lived independently in the community or lived in care facilities, showed that individuals who were cared for had better living skills than those who lived alone in the community ($p \leq 0.001$) [7].

Dimitri et al. studied the living skills of 57 non-hospitalized, middle-aged and aged schizophrenic patients and 40 healthy subjects in the same age group as the control group and found that regardless of residing in a supportive environment or living independently, the patients showed significant damage on assessed skills of the test ($p<0.001$), particularly in the areas of appearance and dress, personal hygiene, food preparation and storage, safety health, money management, transportation, leisure and finding work. In this study, a significant relationship was not found between the severity of symptoms and people function [5].

Senba et al. assessed the living skills of 131 schizophrenicpatients in Matsuzawa Hospital in the city of Tokyo through the Functional Independence Measure (FIM). Based on the research findings, living skills structures and problems in performing them differed in schizophrenia patients compared with other patients [9].

In this study, patients were recruited from inpatients and outpatients who were not receiving any support and care(also, the inpatients included those who were hospitalized in acute ward and their living skills had not changed yet due to their long stay); thus, there was no difference in their mean test scores, while in other similar researches, the living skills of individuals who were taken care of were compared with patients who were living independently in the community, and it seems that the caring systems cover these individuals through supporting or training living skills.

When evaluating schizophrenic patients' independency in performing living skills, 60% of the inpatients and 70.6% of the outpatients required help in those skills assessed by the test.

The research conducted by Nadjjaran-Mohammdabadon 74 schizophrenic patients admitted in Ebn-e-Sina psychiatric hospital in Mashhad through the Kohlman Evaluation of Living Skills showed that 93.2% of hospitalized schizophrenic patients needed help based on the test scores [8].

This study was conducted on hospitalized chronic schizophrenic patients; thus, in many of them, living skills may have been affected by long-term hospitalization and a higher percentage of these people may need help in different areas, because living skills of schizophrenic patients reduce due to prolonged hospitalization.

When assessing subscales of Kohlman Evaluation of Living Skills, patients showed higher percentages in help requirement in the following subscales: appearance, awareness of dangerous household situations, doing appropriate action in critical situations, obtaining and maintaining a source of income, budgeting their monthly income, and leisure activities. Therefore, examinations of schizophrenic patients revealed that self-care, safety health, money management, and leisure time of these patients were affected.

Klapow et al. evaluated 55 schizophrenic outpatients and 72 healthy subjects aged 45-86 by using the Direct Assessment of Functional Status Scale. This test evaluates the person's behavior during similar exercises of real life in daily activities. The results revealed that patients with schizophrenia showed significant inability in test total scores and subscales of communication, transportation, finance affairs, and shopping compared with normal people ($p<0.001$) [11].

Henrichs et al. conducted a study on non-hospitalized schizophrenic patients in Canada, and carried out the University of California Performance-based Skills Assessment on 64 schizophrenic and schizoaffective patients and 42 healthy subjects. The results showed lower performances of patients in three subscales: leisure planning, financial problems and social relationships out of five subscales ($p<0.01$) [10].

Regarding the employment and living skills of schizophrenic patients, there was a direct relationship between these two variables. In both inpatient and outpatient groups, the mean test scores for employed people showed the independence of most of them in living skills, while the mean scores for unemployed patients reflected need for help of the most people of this group for living skills. Also, in healthy persons, the mean scores for the Kohlman Evaluation of Living Skills in employed patients were generally lower than those for the unemployed persons.

Therefore, in general and regardless of the group's type, the score of the Kohlman Evaluation of Living Skills of employed people was significantly lower than those of the unemployed. In fact, occupation and group variables (healthy, in patient, and outpatient) were statistically significant predictors of the Kohlman Evaluation of Living Skills score.

Agrebo et al. believe that unemployment increases the risk of schizophrenia, whereas the development schizophrenia increases the likelihood of unemployment in people [17]. Jacobs et al. showed in their study that people with good job history, job interview skills, and non-psychiatric disease diagnosis were more inclined to find a career than those diagnosed with psychologic illness and poor employment history or who receive income from various sources such as social security insurance [18].

Due to the lack of cooperation of many therapeutic centers in terms of the geographical extent of research

performance and due to the limited internal research on living skills of schizophrenic patients, there is a need for more extensive studies in order to compare and generalize these results to more population.

The schizophrenic patients of this study, regardless of hospitalization or daily referral to care center, were notably in trouble in the areas of self-care, safety and health, money management, and leisure time living skills. According to the results of this study and other researches, it seems that handling these issues can devote more extensive framework of the living skills program of the majority of schizophrenic patients. To increase the generalize ability of the results of the study to entire population of schizophrenic patients, we suggest that the study be performed in bigger sample sizes and in different patients. The comparison of the living skills of schizophrenic patients with other psychotic disorders, as well as carrying out the test in men and in women, can help understand gender differences in living skills. The assessment of life skills by means of other tools can give more extensive information in the areas that need treatment interventions.

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Authors' Contributions

All authors had equal role in design, work, statistical analysis and manuscript writing.

Conflict of Interest

The authors declare no conflict of interest.

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References

1. Christiansen CH, Baum CB, Bass JD. 3rd ed. Occupational therapy: Performance, participation, and well-being. United State of America: SLACK Inc; 2005: 605.
2. Hagedorn R. Tools for practice in occupational therapy. First ed. London: Churchill Livingstone; 2000:155.
3. Hansen RA, Atchison B. Condition in occupational therapy effect on occupational performance. 2nd ed. United State of America: L: ppincott Williams and Wilkinss; 1999:68.
4. Velligan DI, Alphs LD. Negative Symptoms in Schizophrenia: The importance of identification and treatment. Psychiatric Times2008; 25(3): 12.
5. Dimitri P, Granholm E, Patterson TL. Psychosocial functioning on the independent living skills survey in older outpatients with schizophrenia. Schizophr Res 2004; 69(2-3): 307–316.
6. Stuart GW, Sundeen SJ. Principles and practice of psychiatric nursing. 9th ed. St. Louis: Mosby; 1995: 112.
7. Kohlman TL. The Kohlman evaluation of living skills. American Ooccupational Therapy Inc 1992; 7(43-45): 49.
8. Najaran-Mohammadabad N. [The survey of daily living skills of schizophrenic patient in Ebn-e-Sina psychiatric hospital of Mashhad with Kohlman evaluation] [dissertation]. Tehran: University of social welfare and rehabilitation; 2003: 95.
9. Semba H, Sekiguchi M, Hirotaka N, et al. [Activities of daily living in patients with schizophrenia analysis by the Functional Independence Measure (FIM)] [Japanese]. Rigakuryoho Kagaku 2002; 17(1): 72-75.
10. Heinrichs RW, Statucka M, Goldberg J and Mc Dermid Vaz S. The University of California Performance Skills Assessment (UPSA) in schizophrenia. Schizophr Res 2006; 88(1-3): 135-141.
11. Klapow JC, Evans J, Patterson TL, et al. Direct assessment of functional status in older patients with schizophrenia. Am J Psychiatry 1997; 154(7): 1022-1024.
12. Burnett J, Dyer CB, Naik AD. Convergent validation of the Kohlman evaluation of living skills as a screening tool of older adults' ability to live safely and independently in the community. Arch Phys Med Rehabil 2009; 90(11): 1948-52.
13. Hayas D, Mosenteen D, Thimmaiah D, et al. Age–related changes in activities of daily living ability. Australian Occup Ther J 2003; 51: 192-198.
14. Cara E, MacRae A. Psychosocial occupational therapy: A clinical practice. 2nd ed. Canada: Thomson Delmar Learning; 2005: 155.
15. Hempill-Pearson BJ. 2nd ed. Assessment in occupational therapy mental Health. 2nd ed. United State of America: Slack Inc; 1999: 231-233.
16. Kazazi L, Karbalaei-Noori A, Rafie H and Karimlou M. The reliability and validity of Kohlman evaluation of living skills in schizophrenic patients. J Res Rehabil Sci 2010; 6(1): 85-89.
17. Agrebo E, Byrne M, Eaton WW and Mortensen PB. Marital and labor market status in the long run in Schizophrenia. Arch Gen Psychiatry 2004; 61(1): 28-33.
18. Jacobs HE, Wissusik D, Collier R, et al. Correlations between psychiatric disabilities and vocational outcome. Hosp Community Psychiatry 1992; 43(4): 365-369.

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