Effects of Communication Skills Training on Aggression and Quality of Life of Male Patients with Chronic Mental Illnesses

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ABSTRACT

Background: Chronic mental illnesses affect cognitive status and behavior, which lead to social and communication impairment and behavioral problems. This research investigated the influence of communication skills training on aggression and quality of life of the patients with chronic mental illnesses.

Methods: This study is a quasi-experimental study with pretest and posttest. First, a total of 30 patients with chronic mental illnesses were selected based on the inclusion criteria. Next, they were randomly assigned into the control and experimental groups. The experimental group received techniques of communication skills for 10 sessions (each session 60 minutes, one session per week). The research instruments were The World Health Organization Quality of Life and Buss–Perry Aggression Questionnaire. Statistical analysis was conducted through analysis of covariance (ANCOVA).

Results: Our findings indicated that the means of quality of life scores (F=41.62, P=0.001) and aggression (F=11.30, P=0.002) were significantly different between research groups after the intervention.

Conclusion: Communication skills training improve behavioral problems and quality of life in patients with chronic mental illnesses. Thus, it is necessary to use these skills to prevent and decrease behavioral problems and promote social skills in patients with mental disorders.

1. Background

Many studies have reported that patients who diagnosed with psychotic disorders such as major depression (Dumais et al. 2005), schizophrenia, schizoaffective disorder (Nederlof et al. 2013; Nolan et al. 2005), and bipolar disorder (Ballester et al. 2012) are engaged in violent behaviors more than healthy population. In general, aggression is an inclination towards attack, menace, and struggle in agitating situations (Ružić et al. 2008). However, the most

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victims of aggressive behavior of inpatients in psychiatric department are medical staff (Ziest et al. 1980; Anderson & West 2001). Different factors are involved in increasing the risk of showing violent behavior, including illness-related factors (severity of psychotic symptoms and the type of disorder) (Winsper el al. 2013), personality characteristics (Barlett & Anderson 2012), environmental variables (Simons et al. 2011), lack of insight, and impulsive behavior (Krakowski 2003).

Some recent studies on the increased incidence of aggression in patients with psychotic disorder highlighted the role of environmental factors and poor communication skills (Gerdtz et al. 2013; Pulsford et al. 2013). However, other studies on aggression among mental illness patients indicated that aggression was a determinant factor for psychiatrics to diagnose mental disorders (Chan & Chow 2014; Singh et al. 2012). On the other hand, stigma towards mental diseases leads to increase in anxiety, withdrawal, and deterioration in social performance. Thus, all these factors would result in increase in aggressive behavior in patients with mental diseases (Fresan et al. 2009).

Patients with mental disorders have impaired cognition and behavior that ends in problems with interpersonal skills (Yoon et al. 2008). Onset of chronic mental diseases in early age prevents affected individuals from learning social skills (Vakilian & Jashem Abadi 2008). Patients diagnosed with schizophrenia behave poorly in communication and interpersonal skills, especially in collaboration, adjustment, and centralization compared to patients with other mental disorders (schizoaffective, paranoid schizophrenia, and psychosis). In addition, information exchange process in psychotic men is poorer than relations with others (Moore et al. 2012).

Social skills impairment becomes stable over time in the absence of psychological interventions, and it gets resistant to medical treatment (Sadock & Sadock 2012; Dimatteo et al. 2002). Although, it seems that mental illness responds to medical treatment, a large proportion of these patients experience psychological symptoms that result in downgrading their life quality. In order to understand the causes of aggressiveness in mental illnesses, other factors such as quality of life (Strous et al. 2009), personality traits, and family functions (Abbasi et al. 2009) should be considered. Quality of life is an individual's perception of his or her position in life in the context of the culture, beliefs, and expectations (Kalatehjari et al. 2007).

Functional cognition is an index of independent function of life and job that is influenced by mental illness (Fagiolinia & Goraccib 2007). Researchers in this area have shown the relationship between positive and negative psychotic symptoms and physical function, independent life, and quality of life (Awad 1997; Mohr 2007). They have also investigated that quality of life reduce the hospitalization time (Saarini et al. 2007; Hofhuis et al. 2008). However, individuals who learn communication skills display lower degrees of aggression (Vyskocilova & Prasko 2012).

A meta-analysis research indicated that social skills training can improve social skills of the patients with chronic psychosis and can reduce their psychiatric symptoms (Yousefi & Ghorbanalipour 2009; Kurtz & Mueser 2008). This intervention is useful for the patients with psychological disorders that have interpersonal problems such as difficulty in establishing new relationships, responding to critiques, declining offers, expressing their feelings, having close friends, marital rlations, and so on. (Nolan et al. 2005).

This method is an appropriate intervention for a range of psychiatric disorders like bipolar disorder (Goldstein et al. 2008), schizophrenia (Roder et al. 2002), anxiety disorder (Herbert et al. 2005), and substance abuse (Botvin & Wills 1985). Social skills was defined as a typical strategy that individuals use to perform effectively their social responsibility (Kravits et al. 2010). In other words, social skills are individuals' abilities in response to environment that lead to generate, maintain, and increase their positive influence in interpersonal relationships (Leberton & Tuma 2006).

Social skills training include behavioral, cognitive, perceptual, and emotional skills. It encompasses 3 components; 1) Social perception (detection of nonverbal and verbal stimuli), 2) Social cognition (analyzing the social stimulus), and 3) Behavioral response (generate effective verbal, nonverbal, and paralinguistic responses) (Drake & Bellack 2005). Behavioral factors of social skills are abilities to have healthy interaction with others, as well as flexibility and self-adjustment with environment. Based on the concept of social skills, optimal social behavior requires individual's ability to understand the situation and integrate with certain behaviors (3 components) that have effective and positive results in the concrete social situation (Vyskocilova & Prasko 2012; Deniz et al. 2009).

Social skills can help patients with psychosis to manage stressful events, solve problems and challenges, and improve medication adherence and psychological intervention (Kopelowica et al. 2006; Kern et al. 2009; Patterson et al. 2005).

On the other hand, in recent years, researchers emphasize that low quality of life in patients with schizophrenia plays an important role in aggravating symptoms of

psychosis (Ritsner & Gibel 2006). Therefore, maintaining and developing quality of life is necessary and should be considered in intervention therapeutic programs. In this regard, several studies have been performed on the relationship of chronically mental illness symptoms with other disorders. However, there is a gap in the study of training programs with regard to decrease in negative and positive symptoms of the chronically mental illnesses. Therefore, the current study aimed to investigate the influence of communication skills on improving the quality of life and decreasing aggression in male patients with chronic mental illnesses.

2. Materials & Methods

The present study is a quasi-experimental research with pretest-posttest design and follow up. First, study patients were selected through convenience sampling method according to inclusion criteria out of patients referred to Lavasani Hospital from July 2014 to December 2014. Then, they completed Buss–Perry Aggression Questionnaire (BPAQ) and The World Health Organization Quality of Life (WHOQOL)-BREF. To respect the rights of the participants, some information was provided about the performance of the program and the researcher emphasized on the principle of the confidentiality of personal information. Informed consent forms were obtained from participants' parents or guardians before the actual training. The inclusion criteria were as follow: not showing any severe or pervasive cognitive impairment, having obvious psychotic symptoms, and recovery period between two hospitalizations and consciousness problem, having healthy orientation, demonstrating a minimum of IQ score of 90, and having high school diploma.

Exclusion criteria were as follows: showing impaired judgment, impaired orientation, low level of education, lack of parental or guardian consent, delusions and hallucinations, mental retardation, personality disorder, and using anti-aggressive drugs.

Finally, 30 patients who took the optimal cutoff score (78) for diagnosing aggression were selected. They were randomly assigned into the experimental (intervention) group and control group.

The intervention group received communication skills trainings (Table 1) in 10 sessions (1 hour for each session per week), but the control group did not receive any intervention. The researcher followed the standardized procedures and techniques of the training program to the letter. To minimize the environmental differences between the intervention and control groups, the same person instructed both groups and the sessions were held in the same place. Part of each

Table 1. Contents of communication skills training.

Sessions	Sessions objectives
First session	Initial introduction, briefly explain the objectives of the sessions, Homework: focusing on the relationship with others
Second session	Improving an effective relationship, preparation and termination of a relationship, identifying personality characteristics
Third session	Non-verbal communication, identifying environment factors
Forth session	Effective conversation, barriers to effective listening
Fifth session	Learning reflecting and feeling in relationships, fostering empathy, identifying different responses
Sixth session	Modes of communication in society, identifying the benefits of self-disclosure
Seventh session	Learning coping strategy in different relationships, growing power to say no
Eighth session	Awareness of the advantages and disadvantages of conflict, distinguishing between conflicts, managing individuals or groups conflicts
Ninth session	Implementable model of cooperative problem solving, coping with problems
Tenth session	Learning structure of love mode and its influence in relationships

session was devoted to reviewing the content, topics, and assignments from the previous session. At the end of each session, the assignments were given for the next therapy session. After the intervention sessions, the posttest was taken from the intervention and control groups. Also, 1 month after study completion, the therapeutic effects in both groups were assessed with the same questionnaire.

WHOQOL was used to assess the quality of lives of study participants. This questionnaire is a short form of "World Health Organization Quality of Life" that was published by WHO in 1991. It comprises 24 items that measure physical and psychological health, environment, social relationships, general health, and apparent quality of life (Montazeri et al. 2005). Participants respond to items on a 5-point Likert-type scale. Its internal consistency reliability (The Cronbach α) was reported in the original study between 0.73 and 0.89. In the Persian study, the internal consistency reliabilities were as follows: total=0.88, physical health=0.70, mental health=0.77, social relationship=0.65, and environment quality=0.77 (Rahimi et al. 2006).

In order to assess aggression, we used BPAQ. It has 29 items (Buss & Perry 1992) and was prepared in 1992. The items are scored on a 5-point Likert-type scale. It includes 4 subscales of physical aggressive, verbal aggressive, aggression, and hostility. Its internal consistency reliabilities were as follows: physical aggressive=0.82, verbal aggressive=0.81, aggression=0.83, and hostility=0.80 (Montazeri et al. 2005). In its Persian version, the Cronbach α was reported as 0.89 (Mohammadi 2007). The collected data were analyzed through analysis of covariance by SPSS ver 20.

3. Results

Table 2 presents the sample characteristics of the participants in the study.

As shown in Table 2, most patients were diagnosed with schizophrenia (32.3%). The educational level of patients ranged from high school to bachelor's degree, and 51.6% of them had a diploma. In addition, the highest range of patients' age was 41(19.4%). As shown in Table 3, the re-

Table 2. Demographic characteristic of patients in both research and control groups (n=15 in each group).

Mental disorder	[a]n_i	[a]P	Level of education	[a]n_i	[a]P
Schizophrenia	10	32.3	High school	12	38.7
Depression	8	25.8	Diploma	16	51.6
Bipolar	6	19.4	BA/BS	2	6.5
Schizoaffective	6	19.4	Total	30	100

Abbreviations: P: Relative frequency, n_i: Absolute frequency.

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Table 3. Results of covariance analysis of aggression and quality of life.

Variable	Group	[b]SS	[b]df	[b]MS	F	P-value	[b]R^2
Aggression	Pretest	3802.50	1	3802.50	19.13	0.001	0.40
	Group	1363.26	1	1363.26	11.30	0.002	0.28
	Error	5564.22	28	198.72	-	-	-
Quality of life	Pretest	4927.900	1	4927.900	50.85	0.001	0.64
	Group	3850	1	3850	41.62	0.001	0.60
	Error	2737.82	28	97.79	-	-	-

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[b] Abbreviations: SD: Standard Deviation, df: Degree of Freedom, SS: Sum of Square, MS: Means of Square, R^2: Partial Eta Square.

* P<0.05.

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sults indicate that the influence of communication skills training is statistically significant in the scores of aggression posttest scores (partial eta squared=0.28). Therefore, there is a significant difference between a pair of means (F=11.30, df=1, P=0.002). Furthermore, there is a significantly difference between pretest and posttest results of quality of life scores (F=41.62, df=1, P=0.001, Eta=0.64).

4. Discussion

The current study was performed to investigate the influence of communication skills in aggression and quality of life in male chronically mental ill patients. The findings indicated that communication skills play a critical role in decreasing the aggression and increasing quality of the patients' lives. These results are consistent with previous studies results (Rodriguez et al. 2015; Mazurek et al. 2013; Dahuji & Tarakkoli 2014; Fukui et al. 2011; Curtis et al. 2013). In general, chronically mentally ill patients have problems in communication with others. In other words, chronically mentally ill patients have demanding of quality of life (Khodabakhshi Koolaee et al. 2014).

Social skills training has influence on the promotion of self-care in chronically ill patients (Koujalgi et al. 2014). Durand and Merges (2001) found out that functional communication training improves effective relationship with others and reduces behavioral problems, especially aggression. However, there is a negative relationship between aggression and communication skills as well as self-disclosure (Herrenkohl et al. 2007). Lack of communication skills causes other disabilities. It is worth mentioning that mental illness, especially chronically mental illness creates critical problems which ends in patient's isolation (Hematimansh et al. 2012). The recent research performed on social skills training to stabilize outpatients with schizophrenia indicated that social skills training improved psychopathology, social discomfort, social cognition, social withdrawal, interpersonal communication, and quality of life compared with the treatment-as-usual (Rus-Calafell et al. 2013).

Furthermore, teaching cognitive behavioral social skills to older patients with schizophrenia improved their dysfunctional behavior such as lack of motivation, depression, anxiety, negative self-esteem, and life dissatisfaction (Granholm et al. 2013). In addition, social skill training had a remarkable effect on improving adaptive functioning and decreasing negative symptoms such as apathy and anhedonia (Kurtz & Mueser 2008; Koujalgi et al. 2014; Avery et al. 2009). In this regard, previous research showed that communication skills training in dementia care promoted the quality of lives in patients with dementia and increased their positive interactions in different situations (Eggenberger et al. 2013). Based on the findings of the present and previous studies, it can be argued that the status of communication skills in chronically mentally ill patients is related to their quality of lives. In other words, self-confidence, skills, and abilities of these patients in communication and communal living skills improve their daily living capacity and enhance their quality of lives (Khodabakhshi Koolaee et al. 2014)).

Thus, we suggested that communication skills be taught to mentally ill patients to improve their behaviors. In addition, it is recommended that future studies be conducted with longer follow up periods, and also determine the other factors, which were influenced by communication skills training. However, the limitations of this study which restricts its generalization relates to first using only male subjects in this research and second, the few number of studied mental disorders that were confined to schizophrenia, depression, bipolar, and schizoaffective disorders.

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Conflict of Interests

The authors declared no conflict of interests.

References

Abbasi, M, Dehghani, M, Yazd Khasti, H & Mansori, N 2009, '[Family fumctioning in families of patients with anxiety and depressive disorder with general population families (Persian)]', *Journal of Family Research,* vol. 5, no. 3, pp. 361-70.

Amini, H, Alimadadi, Z & Nejatisafa, A 2009, '[Quality of life in a group of patients with bipolar disorder and some of their clinical characteristics (Persian)]', *Iranian Journal of Psychiatry and Clinical Psychology,* vol. 15, no. 2, pp. 175-82.

Anderson, A & West, SG 2011, 'Violence against mental health professionals: when the treater becomes the victim', *Innovations in Clinical Neuroscience,* vol. 8, no. 3, pp. 34-39.

Avery, R, Startup, M & Calabria K 2009, 'The role of effort, cognitive expectancy appraisals and coping style in the maintenance of the negative symptoms of schizophrenia', *Psychiatry Research,* vol. 167, pp. 36–46.

Awad, AG 1997, 'Quality of life rediscovered: implications for clinical outcome and health economics in schizophrenia'. *Journal of Psychiatry and Neuroscience,* vol. 22, no. 4, pp. 229-36.

Ballester, J, Goldstein, T, Goldstein, B, Obreja, M, Axelson, D, Monk, K, et al. 2012, 'Is bipolar disorder specifically associated with aggression?' *Bipolar Disorders*, vol. 14, no. 3, pp. 283-90.

Barlett, CP & Anderson, CA 2012, 'Direct and indirect relations between the Big 5 personality traits and aggressive and violent behavior', *Personality and Individual Differences*, vol. 52, no. 8, pp. 870-75.

Botvin, GJ & Wills, TA 1985, 'Personal and social skills training: Cognitive-behavioral approaches to substance abuse prevention, in S Catherine, MS Bell & DS Battjes (eds), *Prevention research: Deterring Drug Abuse among Children and Adolescents,* National Institute on Drug Abuse, Rockville.

Buss, AH & Perry, M 1992, 'The aggression questionnaire. *Journal of Personality and Social Psychology,* vol. 63, no. 4, pp. 452-59.

Chan, O & Chow, KK 2014, 'Assessment and determinants of aggression in a forensic psychiatric institution in Hong Kong, China', *Psychiatry Research*, vol. 220, no. 1, pp. 623-630. doi: 10.1016/j.psychres.2014.08.008

Curtis, JR, Back, AL, Ford, DW, Downey, L, Shannon, SE, Doorenbos, AZ, et al. 2013, 'Effect of communication skills training for residents and nurse practitioners on quality of communication with patients with serious illness: a randomized trial', *Journal of the American Medical Association,* vol. 310, no. 21, pp. 2271-281.

Dahuji, ZK & Manzari Tavakkoli, AR 2014, '[Influence of communication skills on marital satisfaction and life quality among mothers of girls high school students' (Persian)]', *Applied Psychology,* vol. 2, no. 5, pp. 23-30.

Deniz, ME, Ozturk, A, Turan, DE, & Ozyesil, Z 2009, Evaluation of depression with respect to different social skill levels: a Turkish Study. *Social Behavior and Personality*, vol. 37, no. 7, pp. 881-88.

Dimatteo, MR, Giordani, PJ, Lepper, HS & Croghan, TW 2002, 'Patient adherence and medical treatment outcomes: a meta-analysis', *Medical Care,* vol. 40, no. 9, pp. 794-811.

Drake, RE & Bellack, AS 2005, 'Psychiatric rehabilitation', in BJ Sadock & VA Sadock, (eds), *Kaplan & Sadock´s Comprehensive Textbook of Psychiatry.* 8th edn, Lippincott Williams & Wilkins, Philadelphia.

Dumais, A, Lesage, AD, Alda, M, Rouleau, G, Dumont, M, Chawky, N, et al. 2005, 'Risk factors for suicide completion in major depression: a case-control study of impulsive and aggressive behaviors in men', *American Journal of Psychiatry*, vol. 162, no. 11, pp. 2116-124.

Durand, VM & Merges, E 2001, 'Functional communication training a contemporary behavior analytic intervention for problem behaviors', *Focus on Autism and Other Developmental Disabilities,* vol. 16, no. 2, pp. 110-19.

Eggenberger, E, Heimerl, K & Bennett, MI 2013, 'Communication skills training in dementia care: a systematic review of effectiveness, training content, and didactic methods in different care settings', *International Psychogeriatrics,* vol. 25, no. 3, pp. 345-58.

Fagiolinia, A & Goraccib, A 2007, 'The long term maximising potential for rehabilitation in patients with schizophrenia', *European Neuropsychopharmacology*, vol. 17, no. 2, pp. 123-29.

Fresán, A, Robles-García, R, De Benito, L, Saracco, R & Escamilla, R 2009, 'Development and psychometric properties of a brief instrument to measure the stigma of aggressiveness in schizophrenia', *Actas Espanolas de Psiquiatria*, vol. *38*, no. 6, pp. 340-44.

Fukui, S, Ogawa, K, & Yamagishi, A 2011, 'Effectiveness of communication skills training of nurses on the quality of life and satisfaction with healthcare professionals among newly diagnosed cancer patients: a preliminary study. *Psycho-Oncology,* vol. 20, no. 12, pp. 1285-291.

Gerdtz, MF, Daniel, C, Dearie, V, Prematunga, R, Bamert, M & Duxbury, J 2013, 'The outcome of a rapid training program on nurses' attitudes regarding the prevention of aggression in emergency departments: a multi-site evaluation', *International Journal of Nursing Studies*, vol. 50, no. 11, pp. 1434-445.

Goldstein, TR, Miklowitz, DJ & Mullen, KL 2008, 'Social skills knowledge and performance among adolescents with bipolar disorder', *Bipolar Disorders,* vol. 8, no. 4, pp. 350-61.

Granholm, E, Holden, J, Link, PC, McQuaid, JR & Jeste, DV 2013, 'Randomized controlled trial of cognitive behavioral social skills training for older consumers with schizophrenia: defeatist performance attitudes and functional outcome', *American Journal of Geriatric Psychiatry,* vol. 21, no. 3, pp. 251-62.

Hematimanesh, A, Azkhosh, M, Khodabakhshi Koolaee, A & Khodaee, MR 2012, '[Effectiveness of a group training program for social life skills in the improvement of daily life skills of male patients with schizophrenia [Persian]', *Journal of Research in Rehabilitation Sciences,* vol. 1, no. 1, pp. 113-21.

Herbert, JD, Gaudiano, BA, Rheingold, AA, Myers, VH, Dalrymple, K & Nolan, EM 2005, 'Social skills training augments the effectiveness of cognitive behavioral group therapy for social anxiety disorder', *Behavior Therapy,* vol. 36, no. 2, pp. 125-38.

Herrenkohl, TI, McMorris, BJ, Catalano, RF, Abbott, RD, Hemphill, SA & Toumbourou, JW 2007, 'Risk factors for violence and relational aggression in adolescence', *Journal of Interpersonal Violence,* vol. 22, no. 4, pp. 386-405.

Hofhuis, JG, Spronk, PE, van Stel, HF, Schrijvers GJ, Rommes, JH & Bakker, J 2008, 'The impact of critical illness on perceived health-related quality of life during ICU treatment, hospital stay, and after hospital discharge: a long-term follow-up study', *Chest,* vol. 133, no. 2, pp. 377-85.

Kalateh Jari, M, Bagheri, H & Hasani, MR 2007, '[The effect of aerobic exercise on quality of life in schizophrenia patients (Persian)]', *Shahrekord University of Medical Sciences,* vol. 9, no. 3, pp. 28-36.

Kern, RS, Glynn, SM, Horan, WP & Marder, SR 2009, 'Psychosocial treatments to promote functional recovery in schizophrenia', *Schizophrenia Bulletin,* vol. 35, no. 2, pp. 347-61.

Khodabakhshi Koolaee, A & Falsafinejad, MR 2014, 'Effects of communal living skills on improving activities of daily living of male patients with Schizophrenia', *Schizophrenia Research,* vol. 1, no. 1, pp. 4-8.

Khodabakhshi Koolaee, A, Meherara, M, Navidian, A & Mossalanejad L 2014, '[The effectiveness assertiveness skills training on student's mental health-related factors (Persian)]', *Iranian Journal of Psychiatric Nursing,* vol. 1, no. 4, pp. 74-38.

Khoshabi, K 2003, '[The Assessment of communication and interaction skills in psychotic patients (Persian)]', *Journal of Rehabilitation,* vol. 3, no. 10, pp. 12-19.

Kopelowicz, A, Liberman, RP & Zarate, R 2006, 'Recent advances in social skills training for schizophrenia', *Schizophrenia Bulletin,* vol. 32, no. 1, pp. 12-23.

Koujalgi, SR, Patil, SR, Nayak, RB, Chate, SS & Patil, NM 2014, 'Efficacy of social skill training in patient with chronic schizophrenia: an interventional study', *Journal of the Scientific Society,* vol. 41, no. 3, pp. 156-61.

Krakowski, M 2003, 'Violence and serotonin: influence of impulse control, affect regulation, and social functioning', *Journal of Neuropsychiatry and Clinical Neurosciences*, vol. 15, no. 3, pp. 294-305.

Kravits, K, McAllister-Black, R, Grant, M & Kirk, C 2010, 'Self-care strategies for nurses: a psycho-educational intervention for stress reduction and the prevention of burnout', *Applied Nursing Research,* vol. 23, no. 3, pp. 130–38.

Kurtz, MM & Mueser, KT 2008, 'A meta-analysis of controlled research on social skills training for schizophrenia', *Journal of Consulting and Clinical Psychology,* vol. 76, no. 3, pp. 491-504. doi: 10.1037/0022-006X.76.3.491

Lebreton, B & Tuma, A 2006, 'A quantitative approach to assessing the profitability of car and truck tire remanufacturing', *International Journal of Production Economics,* vol. 104, no. 2, pp. 639–52.

Mazurek, MO, Kanne, SM, & Wodka, EL 2013, 'Physical aggression in children and adolescents with autism spectrum disorders', *Research in Autism Spectrum Disorders,* vol. 7, no. 3, pp. 455-65.

Mohammadi, N 2007, '[A preliminary study of the psychometric properties of Buss and Perry's aggression questionnaire (Persian)]', *Journal of Social Science and Humanities of Shiraz University*, vol. 25, no. 4, pp. 135-51.

Mohr, P 2007, 'Quality of life in the long-term treatment and the role of second-generation antipsychotics', *Neuro Endocrinology Letters,* vol. 28, no. 1 pp. 117-33.

Montazeri, A, Goshtasebi, A, Vahdaninia, M & Gandek B, 2005, '[The short form health survey: translation and validation study of the Iranian version; Quality of life research: an international (Persian)]', *Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation,* vol. 14, no. 3, pp. 875-82.

Moore, AD, Hamilton, JB, Knafl, GJ, Godley, PA, Carpenter, WR, Bensen, JT, et al. 2012, 'Patient satisfaction influenced by interpersonal treatment and communication for African American men the North Carolina–Louisiana Prostate Cancer Project (PCaP)', *American Journal of Men's Health,* vol. 6, no. 5, pp. 409-19.

Nederlof, AF, Koppenol-Gonzalez, GV, Muris, P & Hovens, JE 2013, 'Psychiatrists' view on the risk factors for aggressive behavior in psychotic patients', *Clinical Schizophrenia & Related Psychoses*, vol. 7, no. 3, pp. 131-37.

Nolan, KA, Volavka, J, Czobor, P, Sheitman, B, Lindenmayer, JP, Citrome, LL, et al. 2005, 'Aggression and psychopathology in treatment-resistant inpatients with schizophrenia and schizoaffective disorder', *Journal of Psychiatric Research*, vol. 39, no. 1, pp. 109-15.

Patterson, TL, Bucardo, J, McKibbin, CL, Mausbach, BT, Moore, D, Barrio, C, et al. 2005, 'Development and pilot testing of a new psychosocial intervention for older Latinos with chronic psychosis', *Schizophrenia Bulletin,* vol. 31, no. 4, pp. 922-30.

Pulsford, D, Crumpton, A, Baker, A, Wilkins, T, Wright, K & Duxbury, J 2013,'Aggression in a high secure hospital: staff and patient attitudes', *Journal of Psychiatric and Mental Health Nursing*, vol. *20*, no. 4, pp. 296-304.

Rahimi, A, Ahmadi, F & Gholyaf M, 2006, '[Effects of applying continuous care model on quality of life in hemodialysis patients (Persian)]', *Iran Journal of Nursing,* vol. 13, no. 52, pp. 123-34.

Ritsner, MS & Gibel, A, 2006, 'The effectiveness and predictors of response to antipsychotic agents to treat impaired quality of life in schizophrenia: a 12-month naturalistic follow-up study with implications for confounding factors, antidepressants, anxiolytics, and mood stabilizers', *Progress in Neuro-Psychopharmacology & Biological Psychiatry,* vol. 30, no. 8, pp. 1442-452.

Roder, V, Brenner, HD, Müller, D, Lächler, M, Zorn, P, Reisch, T et al. 2002, 'Development of specific social skills training programmes for schizophrenia patients: results of a multicenter study', *Acta Psychiatrica Scandinavica,* vol. 105, no. 5, pp. 363-71.

Rodriguez, EM, Donenberg, GR, Emerson, E, Wilson HW & Javdani, S 2015, 'Externalizing symptoms moderate associations among interpersonal skills, parenting, and depressive symptoms in adolescents seeking mental health treatment', *Journal of Youth and Adolescence,* vol. 44, no. 4, pp. 952-63.

Rus-Calafell, M, Gutiérrez-Maldonado, J, Ortega-Bravo, M, Ribas-Sabaté J & Caqueo-Urízar, A 2013,' A brief cognitive–behavioural social skills training for stabilised outpatients with schizophrenia: A preliminary study', *Schizophrenia Research*, vol. 143, no. 2, pp. 327-36.

Ružić, K, Frančišković, T, Šuković, Z, Žarković-Palijan, T, Buzina, N, et al. 2008,' Predictors of aggressiveness in schizophrenic patients treated in inpatient forensic institutions' *Collegium Antropologicum*, vol. *32*, no. 2, pp. 331-37.

Saarini, SI, Suvisaari, J, Sintonen, H & Pirkola, S 2007,' Impact of psychiatric disorders on health-related quality of life: General population survey. *British Journal of Psychiatry,* vol. 190, no. 4, pp. 326-32.

Sadock, BJ & Sadock, VA 2012. Kaplan and Sadock's synopsis of psychiatry: behavioral sciences [N Porafkari, Persian trans.], 10th edn, Foroozesh, Tehran.

Simons, RL, Lei, MK, Beach, SR, Brody, GH, Philibert, RA & Gibbons, FX 2011,' Social environment, genes, and aggression evidence supporting the differential susceptibility perspective', *American Sociological Review*, vol. *76*, no. 6, pp. 883-912.

Singh, JP, Grann, M, Lichtenstein, P, Långström, N & Fazel, S 2012, 'A novel approach to determining violence risk in schizophrenia: developing a stepped strategy in 13,806 discharged patients', *PloS One*, vol. 7, no. 2, pp. 31727. doi: 10.1371/journal.pone.0031727

Strous, RD, Ritsner, MS, Adler, S, Ratner, Y, Maayan, R, Kotler, M, et al. 2009, 'Improvement of aggressive behavior and quality of life impairment following S-adenosyl-methionine (SAM-e) augmentation in schizophrenia', *European Neuropsychopharmacology,* vol. 19, no. 1, pp. 14-22.

Vakilian, S & Hashem Abadi, B 2008, 'Effects of adding social skill training to cognitive behavioral group therapy on the treatment of social phobia in college students of Iran', *Journal of Fundamental of Mental Health,* vol. 10, no. 38, pp. 87-97.

Vyskocilova, J & Prasko, J 2012, 'Social skills training in psychiatry', *Act Nerv Super Rediviva,* vol. 54, no. 4, pp. 159–70.

Winsper, C, Singh, SP, Marwaha, S, Amos, T, Lester, H, Everard, L, et al. 2013, 'Pathways to violent behavior during first-episode psychosis: a report from the UK National EDEN study', *Journal of the American Medical Association Psychiatry*, vol. 70, no. 12, pp. 1287-293.

Yoon, JH, Minzenberg, MJ, Ursu, S, Walters, R, Wendelken, C, Ragland, JD, et al. 2008, 'Association of dorsolateral prefrontal cortex dysfunction with disrupted coordinated brain activity in schizophrenia: relationship with impaired cognition, behavioral disorganization, and global function', *American Journal of Psychiatry,* vol. 165, no. 8, pp. 1006-014.

Yousefi, R & Ghorbanalipour, M 2009, '[The comparison of appraisals and attitudes toward illness in schizophrenia, schizoaffective and major depression disorder (Persian)]', *Journal of Clinical Psychology,* vol. 1, no. 3, pp. 1-12.

Ziest, JR, Logue, PE & Carty, SM 1980, 'Psychological measurement of memory deficits in dialysis patients', *Perceptual and Motor Skills,* vol. 50, no. 1, pp. 311-18.