

Review

Literature and Art Therapy in Post-Stroke Psychological Disorders

Yeongcheol Eum¹ and Jongeun Yim²

¹Division of General Studies, Sahmyook University, Seoul, Republic of Korea

²Department of Physical Therapy, Sahmyook University, Seoul, Republic of Korea

Stroke is one of the leading causes of morbidity and long-term disability worldwide, and post-stroke depression (PSD) is a common and serious psychiatric complication of stroke. PSD makes patients have more severe deficits in activities of daily living, a worse functional outcome, more severe cognitive deficits and increased mortality as compared to stroke patients without depression. Therefore, to reduce or prevent mental problems of stroke patients, psychological treatment should be recommended. Literature and art therapy are highly effective psychological treatment for stroke patients. Literature therapy divided into poetry and story therapy is an assistive tool that treats neurosis as well as emotional or behavioral disorders. Poetry can add impression to the lethargic life of a patient with PSD, thereby acting as a natural treatment. Story therapy can change the gloomy psychological state of patients into a bright and healthy story, and therefore can help stroke patients to overcome their emotional disabilities. Art therapy is one form of psychological therapy that can treat depression and anxiety in stroke patients. Stroke patients can express their internal conflicts, emotions, and psychological status through art works or processes and it would be a healing process of mental problems. Music therapy can relieve the suppressed emotions of patients and add vitality to the body, while giving them the energy to share their feelings with others. In conclusion, literature and art therapy can identify the emotional status of patients and serve as a useful auxiliary tool to help stroke patients in their rehabilitation process.

Keywords: art therapy; literature therapy; music therapy; post-stroke depression; story therapy
Tohoku J. Exp. Med., 2015 January, 235 (1), 17-23. © 2015 Tohoku University Medical Press

Introduction

Stroke is one of the leading causes of morbidity and long-term disability worldwide (Roger et al. 2011). In addition, stroke is a major public health concern and considered 1 of the 12 health conditions with the highest burden of disease (Brown and Schultz 2010). Approximately 795,000 people in the US experience a new or recurrent stroke each year, of which about 610,000 are first attacks, and it is estimated that around 6.4 million Americans are stroke survivors (Goldstein et al. 2011). Although the annual stroke incidence and death rates have been decreasing over time as a result of active stroke prevention campaigns and recent advances in acute stroke management, the prevalence of stroke will continue to increase in the future, as the aging population continues to increase and acute stroke management continues to improve (Roger et al. 2011). Moreover, as stroke is a potentially fatal disease, reduction of mortality after the onset of the illness is an important initial aim. However, as survival rates following

stroke continue to rise, reduction of morbidity becomes a more pressing aim, as life after stroke should be worth living (Broomfield et al. 2011). Since the physical consequences of stroke are variable and may include impairments in the motor and sensory systems, language, perception, emotional, and cognitive functions, estimation and understanding of disability after stroke is a high priority for health care systems (Kelly-Hayes et al. 1998; Geyh et al. 2004).

Depression is a common and serious psychiatric complication of stroke. Approximately 40% of patients will develop depression after the acute stroke event (the frequency of major depression is 21.7% and minor depression is 19.5%) (Robinson and Spalletta 2010). Post-stroke depression (PSD) delays the effects of therapy and slows down the recovery process due to the patient's resignation from rehabilitation and the lack of willingness and motivation to regain physical fitness. Depression further substantially delays the adaptation of the patient to the new life situation after stroke (Brown et al. 2012; Kijowski 2014).

Received October 30, 2014; revised and accepted December 8, 2014. Published online December 26, 2014; doi: 10.1620/tjem.235.17.

Correspondence: Jongeun Yim, DSc, Department of Physical Therapy, Sahmyook University, 815 Hwarangro, Nowon-gu, Seoul 139-742, Republic of Korea.
e-mail: jeyim@syu.ac.kr

Depressed patients have more severe deficits in activities of daily living, a worse functional outcome, more severe cognitive deficits, and increased mortality compared to stroke patients without depression. Among patients admitted to acute stroke units or rehabilitation settings, the frequency of major depression is 19%, and another 19% meet diagnostic criteria for minor depression (Robinson 2006). In comparison, among community samples, the prevalence of major depression is 14% and about 9% of patients show minor depression (Robinson 2006). There is a general consensus that PSD is significantly associated with a poor prognosis. Early studies on the functional impact of PSD showed significantly more severe impairments in activities of daily living among patients with PSD compared with non-depressed stroke patients (Robinson 2003). Studies from Robinson's group further demonstrated that PSD predicts a poor functional recovery after stroke (Robinson 2006). PSD was also found to be associated with more severe cognitive deficits, as assessed with both global measures of cognitive functions and more specific neuropsychological tests (Bolla-Wilson et al. 1989). A 2-year follow-up study that included 140 acute stroke patients showed that major (but not minor) depression was significantly associated with more severe cognitive deficits 12 months after stroke compared to stroke patients without depression (Robinson 2006). After adjusting for patient demographic and clinical factors, it was found that patients with PSD had significantly more and longer hospitalizations, more outpatient visits, and an increased risk of suicide than non-depressed stroke patients (Stenager et al. 1998). Caring for patients with PSD also lead to higher stress among caregivers (Jia et al. 2006). Finally, several studies reported that PSD is significantly associated with increased short-term (12 and 24 months) and long-term (10 years) mortality (House et al. 2001).

There is a bidirectional relationship between stroke and depression, with each condition having a negative impact on the onset, course, prognosis, and treatment of the other condition. Since 1990, 9 prospective studies have provided evidence of an association between antecedent depression and stroke, supporting the bidirectional relationship (Ramasubbu and Patten 2003). It is likely that depression increases stroke morbidity and mortality through biological mechanisms such as increased activity in the hypothalamic-pituitary-adrenal (HPA) axis, sympathetic stimulation, pro-inflammatory cytokine levels, and behaviors such as diminished adherence to medical treatment regimens, neglect of self-care, physical inactivity, poor diet, and substance abuse (Katon 2003). Stroke lesions or brain ischemia increases the risk of depression through similar biological mechanisms including increased production of HPA axis hormones and pro-inflammatory cytokines in addition to the disruption of neural circuits underlying emotional regulation (Bhogal et al. 2004; Spalletta et al. 2006). The comorbid bidirectional relationship between stroke and depression indirectly indicates that treatment or preventive intervention of one may have a positive impact on both, and

modifying shared causative factors may have preventive potential for both disorders.

Literature therapy (also known as biblio/poetry therapy) is defined as the therapeutic use of literature for treatment of mental disorders or for mental health (Cohen 1994; Eum et al. 2014). It is a psychotherapeutic approach that provides information and outlines approaches readers can adopt to develop insight and awareness of negative thoughts and emotions, provides answers to problems and supports them to practice these approaches in their daily lives (Jorm et al. 2002; Campbell and Smith 2003; Eum et al. 2014). The UK National Institute for Clinical Excellence (NICE) (2009) has recommended bibliotherapy as a treatment for unrelenting sub-threshold depressive symptoms or mild-to-moderate depression. Also Naylor et al. (2010) reported the efficacy of bibliotherapy that the approach was as effective as standard care involving antidepressant medication prescription. Moreover, Comparison of the treatment effects and drop-out rates of bibliotherapy with conventional face-to-face therapy have also been assessed in a systematic review and meta-analysis and they found that both approaches to therapy have comparable effects in 21 studies comparing the effects of bibliotherapy with face-to-face psychotherapy for depression and anxiety disorders. They concluded that bibliotherapy could be used as an adjunct to conventional therapies (Cuijpers et al. 2010). Art therapy can be defined as the therapeutic use of art making, within a professional relationship, by people who experience illness, trauma, or challenges in living (Gussak 2007). Art therapy helps to overcome psychological disabilities through non-verbal treatment methods. For example, music and dance therapy provide non-verbal experiences, as they use sensory stimulation, symbolic motions, rhythms, and colors that could facilitate the addressing of the patients' psychological issues (Reynolds et al. 2000). Art holds the potential for enhancing the quality of treatment for clients by increasing expression and facilitating insight. In one study, an art therapy intervention enhanced psychological well-being by decreasing negative emotional states and enhancing positive ones in a group of older women with breast cancer (Puig et al. 2006). Also, in another study, they conducted art therapy program for prison populations and founded that there was a significant decrease in depressive symptoms in those inmates who participated in the program (Gussak 2007).

So far, few efforts have been undertaken to reduce or prevent PSD and treatment has been limited to pharmacological therapies, which can cause side effects (e.g., cardiovascular or gastrointestinal, sexual dysfunction, and sleep disturbance) (Carod-Artal 2010). These side effects may further aggravate patients' morbidity. Moreover, it is difficult to achieve complete remission of PSD through pharmacological intervention alone (Youn et al. 2013). Therefore, to reduce or prevent PSD, psychological treatment should be included in the treatment (Carod-Artal 2010; Youn et al. 2013).

Theory

Psychological treatment for stroke patients can be divided into verbal and non-verbal treatment (Yalom 1980). The most typical verbal treatments are therapy methods for emotional disabilities, with literature therapy being the most representative. Other verbal treatments include poetry and story therapy. Non-verbal treatments are carried out for patients with language disabilities, and the most typical include art and music therapy. Integrated therapies use both verbal and non-verbal forms of treatment. Stroke patients usually have motor, sensory, language, and cognitive disabilities due to acute brain damage after occlusion of cerebral blood vessels (Geyh et al. 2004). These disabilities are often accompanied by severe changes in emotions. Therefore, rather than depending on one defined form of treatment, the therapist should integrate therapies that fit the patient's needs and desires. Any treatment will be more efficient if the patient takes an active interest in the treatment process.

Literature Therapy for Stroke Patients

Mood changes due to stroke include depression and anxiety (Sagen et al. 2010). Depression can be viewed as a mood disorder characterized by chronic sadness or loss of enjoyment and is usually more severe in patients with higher socio-economic status (Lenzi et al. 2008). In its initial phase, depression is usually related to biological changes, but depression that occurs later is often related to social functions (Robinson 2003). Therefore, emotional disorders such as depression and anxiety that appear after stroke must be dealt with effectively to help with rehabilitation (Aström et al. 1993). Literature treatment is an auxiliary tool that treats neurosis as well as emotional or behavioral disorders; thus, it might be an effective therapy method for PSD as well (Jacobs and Mosco 2011; Eum et al. 2014).

Poetry Therapy: Poetry therapy improves cognitive functions after stroke and helps the patient return to a normal social life. Poetry can add vibes to the lethargic life of a patient with PSD, thereby acting as a natural treatment (Goldstein 1987). Patients can learn and uncover previously hidden facets about themselves by reading poetry to which they can relate. They sometimes experience catharsis through the laments expressed in poems (Furman et al. 2002), as stroke patients experience lamentations due to their own physical pains and limitations (Miller et al. 2013). By reading the words of a poet who expresses heartfelt emotions, patients experience changes in their emotions that allow them to look back at the past and to portray and heal themselves (Mazza 2006). For example, the poem of Rainer Maria Rilke who cries out for the pains and sufferings of patients can have a therapeutic effect, as it allows depressed patients to concentrate on their treatment (Stepakoff 2009).

*Whom will you cry to, heart? More and more lonely,
your path struggles on through incomprehensible
mankind. All the more futile perhaps
for keeping to its direction,
keeping on toward the future,
toward what has been lost. - Rainer Maria Rilke*

Story Therapy: The largest portion of nervous system recovery after stroke normally occurs within 3-6 months (Brunner et al. 2014). Thus, to assist rehabilitation during this period, both physical and story therapy should be provided simultaneously. Story therapy should be carried out during the time in which nervous system recovery primarily occurs (Benowitz et al. 1983). Story therapy redefines the problems of stroke patients from a relative perspective. In other words, as all humans have a social mindset, story therapy can change how patients perceive their problems by providing stories of other humans (Schneider and May 1995).

During treatment, stroke patients discuss many topics, which are often pessimistic and full of criticism. The sudden life change caused by the stroke turns their lives into "problem-saturated stories" (Benowitz et al. 1983). In short, patients have to continue living while being tied down by their problems. "Thick description" changes this in another way (Morgan 2000). The goal of story therapy in stroke patients is to change their problem-saturated stories into thick description. When thick description is strengthened further, it is called "alternative story," and refers to the story that the patient wishes to live. Likewise, story therapy can change the gloomy psychological state of patients into a bright and healthy story, and therefore can help stroke patients to overcome their emotional disabilities (Brownell et al. 1983).

Art Therapy for Stroke Patients

Art therapy helps to overcome psychological disabilities through non-verbal treatment methods. For example, music and dance therapy provide non-verbal experiences, as they use sensory stimulation, symbolic motions, rhythms, and colors that could facilitate the addressing of the patients' psychological issues. Stroke patients often suffer from chronic depression, which can be accompanied by other symptoms such as loss of appetite, excessive eating, insomnia, excessive sleeping, low self-esteem, and attention deficit disorders (Keller et al. 2000). Therefore, physical therapy alone would not be sufficient to address all these issues in patients suffering from PSD (Parikh et al. 1990). It is necessary to provide psychological therapy in addition to physical therapy. Art therapy is one form of psychological therapy that can treat depression and anxiety in stroke patients (Wald 1983).

Art Therapy: Through art activities, stroke patients gain the ability to look inside themselves, form a relationship with their therapist, and naturally communicate with

others (Wadeson 2010). Art therapy conducted together with physical therapy should be approached from the perspective of intact abilities. For example, due to their physical limitations, stroke patients have difficulties with activities requiring precision, and thus should be involved in gross motor activities such as painting, forming clay, and working with large paper mosaics that require less precise motor control. Tools should also be substituted according to the control capacities of patients (Wald 1984).

Art therapy for stroke patients can be called “clinical art therapy.” This term describes diagnosis and treatment using the visual medium of art in a clinical setting with medical staff (Landgarten 2013). Thus, art therapy in stroke rehabilitation can be divided into diagnosis, training, and therapy. Stroke patients can express their internal conflicts, emotions, and psychological status through art works or processes; it is further possible to make diagnoses through this process (Gonen and Soroker 2000). Furthermore, shapes, colors, perspectives, identification of dimensional structures, and textures create a variety of stimulation and provide visual and cognitive training that is effective in strengthening performance intelligence (Grégoire 1998). Such art activities provide patients with the cornerstone for verbal and non-verbal communication that manifest in sensory-motor, cognitive, and physical therapy effects (Wadeson 2000). Taking this into consideration, art therapy helps patients accept their disabilities and limitations after the stroke and acts as a useful medium to discover new goals and joys in life (Wald 1984).

Music Therapy: Many stroke patients suffer from anxiety and depression due to the loss of motor functions resulting from hemiplegia. From a psychological viewpoint, music therapy represents an effective method to alleviate

this condition (Baker and Roth 2004). Music therapy increases physical activity in stroke patients and helps to overcome PSD (Nayak et al. 2000). For example, playing percussion instruments not only increases physical activity but also improves physical, emotional, and cognitive functions. Since music therapy was introduced as part of a neurological rehabilitation program in early 1988 in the United States, it has been continuously reported that walking abilities have improved as well (Maratos et al. 2008).

Music therapy for stroke patients can be approached in three ways. First, improvised playing involves spontaneously making sounds according to the instructions of therapists by selecting musical mediums such as voice, physical sounds, percussions, string instruments, keyboards, and woodwind instruments (Nayak et al. 2000). This method allows patients to express themselves by reacting to the sound and projecting their negative emotions through music. This approach does not require musical training (Magee and Davidson 2002). Second, songs are tools that help to express what patients feel and soothe their loneliness. Patients can express their emotions (e.g., happiness, sadness) and their hopes and despairs through songs (Maratos et al. 2008). Therapists assist patients to alter their negative emotions to positive ones through the process of psychological therapy (Vink et al. 2003). Third, music imaging refers to the experience of musical listening and imagery (Rojo et al. 2011). Patients experience imagery through the music program provided by the therapist and subsequently discuss their imagery with the therapist. Music therapy is an effective form of psychological therapy; it can soothe the suppressed emotions of patients and add vitality to the body, while giving them the energy to share their feelings with others (Maratos et al. 2008).

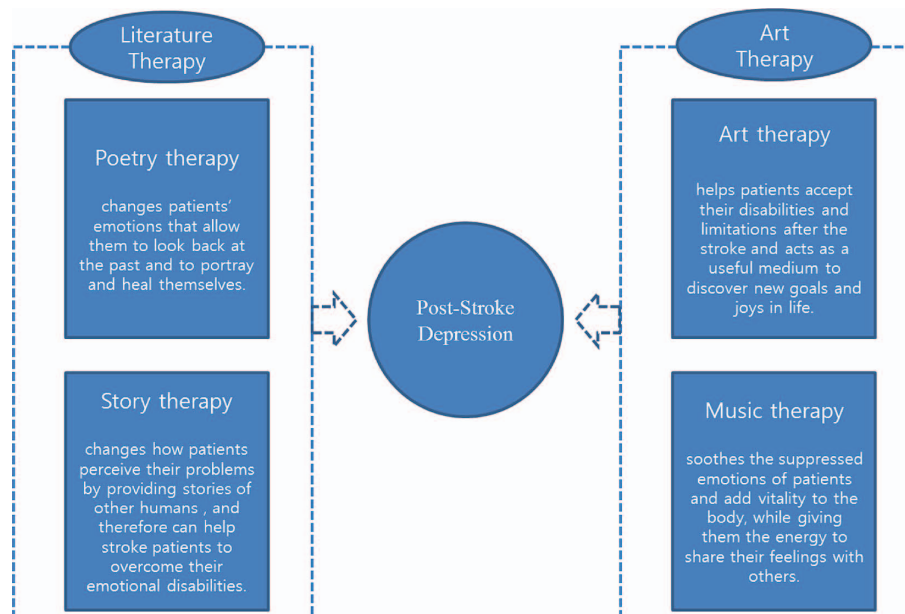


Fig. 1. Psychological approach to reduce or prevent post-stroke depression.

Integrated Psychological Therapy for Stroke Patients

Various psychological therapy methods have been developed. Recently, therapies that are matched to the patients' needs and preferences have been gaining interest. For example, literature therapy for patients who are more capable in literature comprehension is preferred over non-verbal art therapy (Floyd et al. 2004). In integrated literature therapy, the literary mediums are primary and supplemented by methods, techniques, and mediums of art therapy (Wollersheim and Wilson 1991). The National Association for Poetry Therapy (NAPT) states that "Literature therapy is a comprehensive therapy method and uses various tools to supplement physical, mental and psychological health. Thus, literature is used primarily or secondarily. Trained literature therapists have participants write to identify their problems and express their emotions through writing to help them make changes in their lives."

As psychological rehabilitation has a major impact on future stroke treatment, appropriate therapy methods must be considered (Lincoln and Flannaghan 2003). If literature therapy is the primary treatment method, art therapy and others can be used as supplementary treatment methods (Landreville and Bissonnette 1997), then comprehensive psychological therapy can be used to diagnose the status of patients to further suggest therapy methods preferred by patients. In order to treat stroke patients with emotional and sensory disorders, various psychological treatment methods must be used in combination (Lincoln and Flannaghan 2003). From this perspective, artists, consultants, literary scholars, and educators must collaborate to help with the treatment (Fig. 1). For example, when stroke patients are in despair and say "I'm ruined" or "I have nothing to live for anymore," poetry therapy would allow them to express their lamentations while music therapy would help to vent for more therapeutic effects. In short, an integrative psychological therapeutic approach that combines literature and art therapy can identify the emotional status of patients and serve as a useful auxiliary tool to help stroke patients in their rehabilitation process.

Future Research

Future studies should aim to develop a comprehensive psychological therapy program for clinical patients suffering from PSD. As integrated literature therapy was established by borrowing from methods such as free association, active imagination, and gestalt therapy, comprehensive psychological therapy should construct the following system focusing on literature and art therapy for stroke patients. During the initial phase, the therapist and patient form a rapport to identify the patient's emotional state and choose appropriate therapy methods. During the action phase, the therapist carries out the treatment while providing feedback to the patient. During the integration phase, psychological treatment actively addresses the patient's depression and anxiety. The reorientation phase provides the stage for a new setting where therapist and patient decide on the goals

to treat the after-effects of the stroke. Taking into account that stroke is often accompanied by depression and anxiety, rehabilitation effects can be maximized by combining both physical and psychological therapy. These efforts should be supported by clinical research, which will benefit stroke patients in the future.

Conflict of Interest

The authors declare no conflict of interest.

References

- Aström, M., Adolfsson, R. & Asplund, K. (1993) Major depression in stroke patients. A 3-year longitudinal study. *Stroke*, **24**, 976-982.
- Baker, F. & Roth, E.A. (2004) Neuroplasticity and functional recovery: training models and compensatory strategies in music therapy. *Nordic Journal of Music Therapy*, **13**, 20-32.
- Benowitz, L.I., Bear, D.M., Rosenthal, R., Mesulam, M.M., Zaidel, E. & Sperry, R.W. (1983) Hemispheric specialization in nonverbal communication. *Cortex*, **19**, 5-11.
- Bhagal, S.K., Teasell, R., Foley, N. & Speechley, M. (2004) Lesion location and poststroke depression: systematic review of the methodological limitations in the literature. *Stroke*, **35**, 794-802.
- Bolla-Wilson, K., Robinson, R.G., Starkstein, S.E., Boston, J. & Price, T.R. (1989) Lateralization of dementia of depression. *Am. J. Psychiatry*, **146**, 627-634.
- Broomfield, N.M., Laidlaw, K., Hickabottom, E., Murray, M.F., Pendrey, R., Whittick, J.E. & Gillespie, D.C. (2011) Post-stroke depression: the case for augmented, individually tailored cognitive behavioural therapy. *Clin. Psychol. Psychother.*, **18**, 202-217.
- Brown, C., Hasson, H., Thyselius, V. & Almborg, A.H. (2012) Post-stroke depression and functional independence: a conundrum. *Acta Neurol. Scand.*, **126**, 45-51.
- Brown, A.W. & Schultz, B.A. (2010) Recovery and rehabilitation after stroke. *Semin. Neurol.*, **30**, 511-517.
- Brownell, H.H., Michel, D., Powelson, J. & Gardner, H. (1983) Surprise but not coherence: sensitivity to verbal humor in right-hemisphere patients. *Brain Lang.*, **18**, 20-27.
- Brunner, I.C., Skouen, J.S., Erslund, L. & Grüner, R. (2014) Plasticity and response to action observation: a longitudinal fMRI study of potential mirror neurons in patients with subacute stroke. *Neurorehabil. Neural Repair*, **28**, 874-884.
- Campbell, L.F. & Smith, T.P. (2003) Integrating self-help books into psychotherapy. *J. Clin. Psychol.*, **59**, 177-186.
- Carod-Artal, F.J. (2010) Post-stroke depression: can prediction help prevention? *Future Neurol.*, **5**, 569-580.
- Cohen, L.J. (1994) Bibliotherapy: a valid treatment modality. Research-based practice. *J. Psychosoc. Nurs. Ment. Health Serv.*, **32**, 40-44.
- Cuijpers, P., Donker, T., van Straten, A., Li, J. & Andersson, G. (2010) Is guided self-help as effective as face-to-face psychotherapy for depression and anxiety disorders? A systematic review and meta-analysis of comparative outcome studies. *Psychol. Med.*, **40**, 1943-1957.
- Eum, Y., Yim, J. & Choi, W. (2014) Elderly health and literature therapy: a theoretical review. *Tohoku J. Exp. Med.*, **232**, 79-83.
- Floyd, M., Scogin, F., McKendree-Smith, N.L., Floyd, D.L. & Rokke, P.D. (2004) Cognitive therapy for depression: a comparison of individual psychotherapy and bibliotherapy for depressed older adults. *Behav. Modif.*, **28**, 297-318.
- Furman, R., Downey, E., Jackson, R. & Bender, K. (2002) Poetry therapy as a tool for strengths-based practice. *Adv. Soc. Work*, **3**, 146-157.

- Geyh, S., Cieza, A., Schouten, J., Dickson, H., Frommelt, P., Omar, Z., Kostanjsek, N., Ring, H. & Stucki, G. (2004) ICF Core Sets for stroke. *J. Rehabil. Med.*, **44**, 135-141.
- Goldstein, M. (1987) Poetry: a tool to induce reminiscing and creativity with geriatrics. *Am. J. Soc. Psychiatry*, **7**, 117-121.
- Goldstein, L.B., Bushnell, C.D., Adams, R.J., Appel, L.J., Braun, L.T., Chaturvedi, S., Creager, M.A., Culebras, A., Eckel, R.H., Hart, R.G., Hinchey, J.A., Howard, V.J., Jauch, E.C., Levine, S.R., Meschia, J.F., et al. (2011) Guidelines for the primary prevention of stroke: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*, **42**, 517-584.
- Gonen, J. & Soroker, N. (2000) Art therapy in stroke rehabilitation: a model of short-term group treatment. *The Arts in Psychotherapy*, **27**, 41-50.
- Grégoire, P.A. (1998) Imitation response and mimesis in dementia. *Art Therapy*, **15**, 261-264.
- Gussak, D. (2007) The effectiveness of art therapy in reducing depression in prison populations. *Int. J. Offender Ther. Comp. Criminol.*, **51**, 444-460.
- House, A., Knapp, P., Bamford, J. & Vail, A. (2001) Mortality at 12 and 24 months after stroke may be associated with depressive symptoms at 1 month. *Stroke*, **32**, 696-701.
- Jacobs, N.N. & Mosco, E. (2011) Bibliotherapy as an adjunctive treatment. *Evidence-Based Adjunctive Treatments*, **7**.
- Jia, H., Damush, T.M., Qin, H., Ried, L.D., Wang, X., Young, L.J. & Williams, L.S. (2006) The impact of poststroke depression on healthcare use by veterans with acute stroke. *Stroke*, **37**, 2796-2801.
- Jorm, A.F., Christensen, H., Griffiths, K.M. & Rodgers, B. (2002) Effectiveness of complementary and self-help treatments for depression. *Med. J. Aust.*, **176** Suppl, S84-96.
- Katon, W.J. (2003) Clinical and health services relationships between major depression, depressive symptoms, and general medical illness. *Biol. Psychiatry*, **54**, 216-226.
- Keller, M.B., McCullough, J.P., Klein, D.N., Arnow, B., Dunner, D.L., Gelenberg, A.J., Markowitz, J.C., Nemeroff, C.B., Russell, J.M. & Thase, M.E. (2000) A comparison of nefazodone, the cognitive behavioral-analysis system of psychotherapy, and their combination for the treatment of chronic depression. *N. Engl. J. Med.*, **342**, 1462-1470.
- Kelly-Hayes, M., Robertson, J.T., Broderick, J.P., Duncan, P.W., Hershey, L.A., Roth, E.J., Thies, W.H. & Trombly, C.A. (1998) The American Heart Association Stroke Outcome Classification. *Stroke*, **29**, 1274-1280.
- Kijowski, S. (2014) Difficulties in post-stroke gait improvement caused by post-stroke depression. *Chin. Med. J.*, **127**, 2085-2090.
- Landgarten, H.B. (2013) *Clinical art therapy: A comprehensive guide*, Routledge, New York.
- Landreville, P. & Bissonnette, L. (1997) Effects of cognitive bibliotherapy for depressed older adults with a disability. *Clin. Gerontol.*, **17**, 35-55.
- Lenzi, G.L., Altieri, M. & Maestrini, I. (2008) Post-stroke depression. *Rev. Neurol.*, **164**, 837-840.
- Lincoln, N. & Flannaghan, T. (2003) Cognitive behavioral psychotherapy for depression following stroke: a randomized controlled trial. *Stroke*, **34**, 111-115.
- Magee, W.L. & Davidson, J.W. (2002) The effect of music therapy on mood states in neurological patients: a pilot study. *J. Music Ther.*, **39**, 20-29.
- Maratos, A., Gold, C., Wang, X. & Crawford, M. (2008) Music therapy for depression. *Cochrane Database Syst. Rev.*, 1-20.
- Mazza, N. (2006) Voices in flight: integrating movement/dance with poetry therapy. *J. Poet. Ther.*, **19**, 147-150.
- Miller, K.K., Combs, S.A., Van Puymbroeck, M., Altenburger, P.A., Kean, J., Dierks, T.A. & Schmid, A.A. (2013) Fatigue and pain: relationships with physical performance and patient beliefs after stroke. *Top. Stroke Rehabil.*, **20**, 347-355.
- Morgan, A. (2000) What is narrative therapy? *An easy-to-read introduction*. Dulwich Centre Publications, Adelaide, South Australia, pp. 11-32.
- National Institute for Clinical Excellence (NICE) (2009) Depression: the treatment and management of depression in adults (update). London (UK). Clinical guideline, No. 90.
- Nayak, S., Wheeler, B.L., Shiflett, S.C. & Agostinelli, S. (2000) Effect of music therapy on mood and social interaction among individuals with acute traumatic brain injury and stroke. *Rehabilitation Psychology*, **45**, 274-283.
- Naylor, E.V., Antonuccio, D.O., Litt, M., Johnson, G.E., Spogen, D.R., Williams, R., McCarthy, C., Lu, M.M., Fiore, D.C. & Higgins, D.L. (2010) Bibliotherapy as a treatment for depression in primary care. *J. Clin. Psychol. Med. Settings*, **17**, 258-271.
- Parikh, R.M., Robinson, R.G., Lipsey, J.R., Starkstein, S.E., Fedoroff, J.P. & Price, T.R. (1990) The impact of poststroke depression on recovery in activities of daily living over a 2-year follow-up. *Archi. Neurol.*, **47**, 785-789.
- Puig, A., Lee, S.M., Goodwin, L. & Sherrard, P.A. (2006) The efficacy of creative arts therapies to enhance emotional expression, spirituality, and psychological well-being of newly diagnosed Stage I and Stage II breast cancer patients: A preliminary study. *The Arts in Psychotherapy*, **33**, 218-228.
- Ramasubbu, R. & Patten, S.B. (2003) Effect of depression on stroke morbidity and mortality. *Can. J. Psychiatry*, **48**, 250-257.
- Reynolds, M.W., Nabors, L. & Quinlan, A. (2000) The effectiveness of art therapy: does it work? *Art Therapy*, **17**, 207-213.
- Robinson, R.G. (2003) Poststroke depression: prevalence, diagnosis, treatment, and disease progression. *Biol. Psychiatry*, **54**, 376-387.
- Robinson, R.G. (2006) *The clinical neuropsychiatry of stroke: Cognitive, behavioral and emotional disorders following vascular brain injury*, Cambridge University Press, New York.
- Robinson, R.G. & Spalletta, G. (2010) Poststroke depression: a review. *Can. J. Psychiatry*, **55**, 341-349.
- Roger, V.L., Go, A.S., Lloyd-Jones, D.M., Adams, R.J., Berry, J.D., Brown, T.M., Carnethon, M.R., Dai, S., de Simone, G., Ford, E.S., Fox, C.S., Fullerton, H.J., Gillespie, C., Greenlund, K.J., Hailpern, S.M., et al. (2011) Heart disease and stroke statistics: 2011 update. A report from the American Heart Association. *Circulation*, **123**, e18-e209.
- Rojjo, N., Amengual, J., Juncadella, M., Rubio, F., Camara, E., Marco-Pallares, J., Schneider, S., Veciana, M., Montero, J. & Mohammadi, B. (2011) Music-supported therapy induces plasticity in the sensorimotor cortex in chronic stroke: a single-case study using multimodal imaging (fMRI-TMS). *Brain Inj.*, **25**, 787-793.
- Sagen, U., Finset, A., Moum, T., Mørland, T., Vik, T.G., Nagy, T. & Dammen, T. (2010) Early detection of patients at risk for anxiety, depression and apathy after stroke. *General Hosp. Psychiatry*, **32**, 80-85.
- Schneider, K.J. & May, R. (1995) *The psychology of existence: An integrative, clinical perspective*, McGraw-Hill, New York.
- Spalletta, G., Bossu, P., Ciaramella, A., Bria, P., Caltagirone, C. & Robinson, R.G. (2006) The etiology of poststroke depression: a review of the literature and a new hypothesis involving inflammatory cytokines. *Mol. Psychiatry*, **11**, 984-991.
- Stenager, E.N., Madsen, C., Stenager, E. & Boldsen, J. (1998) Suicide in patients with stroke: epidemiological study. *BMJ*, **316**, 1206.
- Stepakoff, S. (2009) From destruction to creation, from silence to speech: poetry therapy principles and practices for working with suicide grief. *The Arts in Psychotherapy*, **36**, 105-113.
- Vink, A., Birks, J., Bruinsma, M. & Scholten, R. (2003) Music therapy for people with dementia. *Cochrane Database of Systematic Reviews*, **4**, 1-47.
- Wadson, H. (2000) *Art therapy practice: Innovative approaches*

- with diverse populations*: University of Texas Press, Texas.
- Wadeson, H. (2010) *Art psychotherapy*, Wiley, New Jersey.
- Wald, J. (1983) Alzheimer's disease and the role of art therapy in its treatment. *Am. J. Art Ther.*, **22**, 57-64.
- Wald, J. (1984) The graphic representation of regression in an Alzheimer's disease patient. *The Arts in Psychotherapy*, **11**, 165-175.
- Wollersheim, J.P. & Wilson, G.L. (1991) Group treatment of unipolar depression: a comparison of coping, supportive, bibliotherapy, and delayed treatment groups. *Professional Psychology: Research and Practice*, **22**, 496-502.
- Yalom, I.D. (1980) *Existential Psychotherapy*, Basic Books, New York.
- Youn, J.I., Sung, K.K., Song, B.K., Kim, M. & Lee, S. (2013) Effects of electro-acupuncture therapy on post-stroke depression in patients with different degrees of motor function impairments: a pilot study. *J. Phys. Ther. Sci.*, **25**, 725-728.
-