



Investigating the Effect of Maternal Narrative Writing on Depression, Anxiety and Stress in Pediatric Stem Cell Transplantation

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ABSTRACT

Given the prevalence and huge impact of cancer on the life of the child and the family, it has become one of the most important chronic diseases that emerge during childhood. The results of extensive studies have indicated high prevalence of depression, anxiety and exposure to chronic stress in parents, especially mothers, of children with cancer. The present study was conducted to investigate the impact of maternal Narrative writing on depression, anxiety and stress. The present quasi-experimental study was performed on 62 mothers of children with stem cell transplantation cancer using pre-test and post-test single-group design; DASS-21 anxiety and stress depression questionnaire was used to collect required data. In the implementation process, the Narrative therapy was performed during one week, from the third to tenth day of admission after completing the DASS-21 questionnaire by the mothers; finally, the DASS-21 questionnaire was evaluated again after one week. Based on the results of the present study, there was a significant difference between the pretest and post-test scores of depression, anxiety and stress after the intervention ($P < 0.001$); additionally, Narrative therapy decreased depression, anxiety and stress of mothers significantly. The findings of the present study showed that Narrative writing can be used as an effective, simple and cost-effective way to confront and cope with negative events in transplantation centers; it, also, can function as a complementary therapy, along with medical therapies.

Key Words: Narrative Writing, Depression, Anxiety, Stress

DOI Number: 10.14704/nq.2017.15.4.1153

NeuroQuantology 2017; 15, 4: 56-62

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Introduction

Given the prevalence and huge impact of cancer on the life of the child and the family, it has become one of the most important chronic diseases that emerge during childhood (Espirito *et al.*, 2010). Parents often suffer negative feelings like depression, anxiety (Castillo *et al.*, 2009), and post-traumatic stress syndrome (Erin *et al.*, 2012). On the other hand, feelings are an integral part of human life and no one can escape negative emotions ever; however, it is possible to control and keep them under control. Controlling emotion signifies the ability to recognize, express,

show and control negative and positive feelings. The ability to control emotion has positive effect on various aspects of life, such as interpersonal interactions and mental and physical health (Dunham *et al.*, 2008). On the other hand, research has shown that people with psychological distress tend to be reluctant to disclose their emotional experiences (Daridsen *et al.*, 2014). Therefore, emotional inhibition can be related to health indicators, in general, and physical and medical problems, in particular. In addition, it has been shown that inhibiting emotional exertion is strongly associated with the

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Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received: 15 November 2017; **Accepted:** 7 December 2017



ability to control emotions such as depression, anxiety, stress, anger, and the use of ineffective coping skills (Dubey *et al.*, 2010). It can be claimed that people face deepest past obsessions and emotions during the Narrative therapy (Seih *et al.*, 2011) Narrative writing of emotional experiences causes increased strength and capacity of the individual to affect himself, reduced negative mood, proper skills for achieving, self-thinking, organizing one's view of his problem, reducing inhibition, having control over one's actions and feelings, and choosing compromised behaviors (Lu & Stanton., 2010). An analysis of the results of formerly conducted studies show that Narrative writing offers a range of benefits, including mental health promotion, psychological function, and overall body function. In this regard, research has shown that writing about harmful events can affect sensitivity of women who have experienced a specific traumatic situation (Krich, 2011); it can, also, increase women's perceptions of emotional support and improve the quality of their life (Gellaitry *et al.*, 2010). In addition, several studies have also focused on the role of this writing method in increasing mental health and reducing physical problems (Riddle *et al.*, 2016; North *et al.*, 2011; Oconnor *et al.*, 2011; Park & Yi, 2012; Pennebaker & Chung, 2011; Hafeziahmadi *et al.*, 2017) reducing stress and anxiety (Zauszniewski *et al.*, 2014), reducing intrusive thoughts and depression symptoms (Ahmadi *et al.*, 2010; Javedani *et al.*, 2015), and reducing interpersonal sensitivities (Radcliffe *et al.*, 2010). Therefore, due to the prominence of the problems of parents, especially mothers, in dealing with their child's disease and the fundamental role of emotional experiences in the formation and facilitating of interpersonal communication, and in light of the theoretical issues and the research background on Narrative writing, the present study was conducted to examine the effect of maternal Narrative writing on depression, anxiety and stress in pediatric stem cell transplantation..

Methods

Study design and participants

In regard with the nature of collected data and the objective, the present study is a quantitative, applied research. Since the present research has implemented available sampling method, the design is of a semi-experimental, single group, pre-test post-test one which investigates the application of written emotional disclosure in

mothers of children with cancer. The absence of psychological illness and psychological or psychiatric treatments during the study, having the ability to read and write, no physical illness, and being inclined to participate were the main inclusion criteria. The study population, which was estimated as 62 subjects through

$$n = \frac{2(z_{1-\frac{\alpha}{2}} + z_{1-\beta})^2}{\Delta^2} + 1, \text{ with } \alpha = 0.05 \text{ and } \Delta = 0.5,$$

included mothers of children with cancer who were admitted to the pediatric stem cell transplant department of Shariati Hospital in Tehran. After obtaining permission from the Ethics Committee of the Islamic Azad University, Tehran Medical Branch (IR.IAU.TUM.REC.1395.11), the objective and process of the study was clarified for participating mothers and their written consent form was obtained. All questionnaires were encoded and anonymous. Sampling started from May 2016 and continued for 6 months, up to November 2016, in the pediatric stem cell transplant department of Dr. Shariati Hospital in Tehran.

Assessment tool

Depression, Anxiety, Stress Scale Questionnaire (DASS-21) is a 42-item self-report scale, graded based on 4-degree Likert scale. This scale was presented by Lovibond (Lovibond & Lovibond, 1995) and the present study uses its short form, which includes 21 items. This questionnaire consists of 21 phrases related to negative emotions (depression, anxiety and stress), for each of which 7 questions are considered and individual score of each emotion is obtained by the total score of questions related to it. The higher the score, the more the number of problems. After reading each statement, the subject should grade the intensity of the mark applied to that phrase, using a 4-degree Likert scale (between 0 and 3), experienced during the last week. The zero number means that the subject has not experienced the mark he has expressed in the phrase during the last week at all and number 1 means that the mark has been somewhat experienced during the last week; number 2 means that the subject has experienced to a great extent the sign in the phrase during the last week, and number 3 means that he has experienced that mark with major intensity over the past week. Based on the rating of this tool, scores 0-7 signify normal stress, 8 to 9 is mild, 10

to 12 moderate, 13 to 16 severe, and more than 17 is very severe. 0 to 3 signifies normal, 4-5 minimal, 6-7 moderate, 8-9 severe, and more than 9 very severe anxieties. 0 to 4 signifies normal, 5-6 minimal, 7-10 moderate, 11-13 severe, and more than 14 very severe depressions. The reliability of the DASS questionnaire turned out to be 0.95 for depression subscale, 0.94 for anxiety subscale, 0.94 for the stress subscale, and 0.96 for all scales in Crawford's study (Crawford & Henry., 2003). Additionally, the reliability of this questionnaire turned out to be 0.84 for depression subscale, 0.89 for anxiety subscale, and 0.90 for the stress subscale in Asghari Moghadam's study (Asgharimoghadam *et al.*, 2009). According to another study which was conducted on Iranian population, the internal consistency of depression, anxiety and stress scales was determined to be 0.79, 0.77, and 0.78 by Cronbach alpha; additionally, correlation of depression scale was 0.70 with Beck Depression test, that of anxiety was 0.67 with anxiety zone, and that of stress was 0.49 with perceived stress test, all of which turned out to be significant. ($P < 0.001$) (Hajjalizadeh *et al.*, 2008).

Research process

After receiving necessary information about the process and objective of the research, 62 mothers filled written consent form out in order to enter the present quasi-experimental study; the subjects were asked to fill DASS-21 depression, anxiety, stress score questionnaire at pretest stage, before the implementation of Narrative writing plan; then, considering the difficulty of expressing emotions and negative thoughts through words, they were asked to Narrative writing rather than spoken form for every day of a week of, each session for 15 to 30 minutes. They were, also, asked to write about the unpleasant emotional memories, the deepest emotional experiences, or the most important issues which bothers them and they avoid expressing regardless of spelling and writing and without deletion, censor, or paraphrase in the rooms where their child is hospitalized in the stem cell transplant ward. DASS-21 questionnaire was evaluated again in the post-test phase at the end of the implementation stages. Also, questions related to demographic information such as age, education, employment status, number of children, the sex of the child, the duration of the child's illness, and the amount of income were included in the questionnaire. Necessary

information about how to fill the questionnaire out and guaranteed confidentiality was presented to the subjects.

Statistical methods

After inserting collected data in SPSS20, the present research used descriptive statistics (preparation of tables, determination of absolute and relative abundance, mean and standard deviation) and inferential statistics (paired t-test) for data analysis. Paired t-test was used to compare the pre- and post-intervention mean scores; $P < 0.05$ was considered to be statistically significant.

Results

62 mothers were eligible, according to inclusion criteria, and agreed to participate in the present study. The demographic characteristics of mothers and their children are presented in Table 1. The mean age of mothers was 31.7 ± 4.6 years; the majority of them (80.6%) were housewives and 30.7% of them had academic education. The average number of mothers had 2.35 ± 0.92 children and the majority of mothers (46.8%) had 2 children.

Table 1. Demographic characteristics of mothers and their children

Variable	(N)%	Mean±SD
Age of mothers		
22-27	13(21)	31±4.68
28-33	26(41.9)	-
34-39	22(35.5)	-
40-45	1(1.6)	-
Number of children		
1 child	9(14.5)	2.35±0.92
2 children	29(46.8)	-
3 children	20(32.3)	-
4 children	1(1.6)	-
5 children	3(4.8)	-
variable	Sub-category	N(%)
Education	Under diploma	11(17.7)
	Diploma	32(51.6)
	College education	19(30.7)
Occupation	Housewife	50(80.6)
	Clerk	
Sex of the child	Girl	41(66.1)
	Boy	21(23.9)
Age of the child	Less than year	15(24.2)
	2-6 years	31(50)
	7-11 years	9(14.5)
	12-16 years	7(11.3)
Duration of child's disease	Less than 1 years	40(64.5)
	2-6 years	21(33.9)
	7-11 years	1(1.6)
Monthly income	Less than 300 \$	17(27.4)
	More than 300 \$	45(72.6)



The results of paired t-test in Table 2 show that there is a significant difference between the mean depression scores of mothers on the third and tenth day of admission. Mean and standard deviation of maternal depression scores was 25.03±7.06 on the third day of admission and before intervention; however, this rate decreased to 15.12±5.19 one week after the Narrative writing and on the 10th day of admission (p <0/001). The difference between the mean score of depression is 9.91 before and after the intervention. This significant difference indicates that emotional disclosure can reduce the depression of mothers during hospitalization.

Table 2. Frequency and percentage distribution of mothers' depression

Depression status	Before intervention N (%)	After intervention N (%)
Normal	1(1.6)	5(8.1)
Mild	5(8.1)	20(32.3)
Moderate	8(12.9)	32(51.6)
Intense	27(43.5)	4(6.5)
Severe	21(33.9)	1(1.6)
Total	62	62
Minimum-maximum	8-40	6-30
Mean(SD)	25.03(7.06)	15.12(5.19)
Test results	t(14.53)	P value<0.0001

Table 3. Frequency and percentage distribution of mothers' depression

Anxiety status	Before intervention N (%)	After intervention N (%)
Normal	1(1.6)	6(9.7)
Mild	2(3.2)	9(14.5)
Moderate	11(17.7)	30(48.4)
Intense	14(22.6)	8(12.9)
Severe	34(54.8)	9(14.5)
Total	62	62
Minimum-maximum	4-42	2-30
Mean (SD)	21.58(9.06)	13.09(5.6)
Test results	t(69.11)	P value<0.001

Table 3 shows that there was a significant improvement in maternal anxiety scores after the intervention. The mean and standard deviation of maternal anxiety was 21.58±9.69 on the third day of admission, which experienced considerable decrease on the 10th day of admission, 13.09 ± 5.60 (p value <0.001). An 8.94 difference in scores signifies the positive effect of Narrative writing on the anxiety of mothers. Table 4 shows that there was a significant improvement in maternal stress

scores after the intervention (p <0.001). The mean and standard deviation of maternal stress was 27.77±6.64 on the hospitalization day; this rate, also, experienced considerable decrease, 16.67±4.7, on the tenth day of admission; a 10.90 difference before and after intervention indicates the effect of Narrative writing on stress reduction.

Table 4. Frequency and percentage distribution of mothers' depression

Stress status	Before intervention N (%)	After intervention N (%)
Normal	3(4.8)	22(35.5)
Mild	1(1.6)	32(51.6)
Moderate	22(35.5)	3(4.8)
Intense	22(37.1)	4(6.5)
Severe	13(21)	1(1.6)
Total	62	62
Minimum-maximum	42-14	30-10
Mean(SD)	27.77(6.64)	16.87(4.60)
Test results	t(49.17)	P value=0.000

Discussion

The present study was conducted to examine the effect of maternal Narrative writing on depression, anxiety and stress in pediatric stem cell transplantation. According to the findings of the present quasi-experimental study, significant improvement was observed in the mean scores of depression, anxiety and stress after the implementation of Narrative writing program; the results showed that depression, anxiety and stress of mothers were affected by Narrative writing. Kripnet *et al.*, research, which was conducted to investigate the impact of Narrative writing on depressed individuals, posed this method as a useful way to exclude people from depression (Krpant *et al.*, 2013; Rahmati *et al.*, 2017). In addition, Martino et al studied the impact of Narrative writing on the mood and psychological symptoms of parents of children with acute leukemia; they concluded that the level of depression, anxiety and stress of parents decreased significantly after Narrative writing, in comparison to pre-intervention phase (Martino *et al.*, 2013). Based on the findings of Niles *et al.* study, Narrative writing had a positive effect on reducing the symptoms of depression and anxiety and improving physical symptoms of university students (Niles *et al.*, 2014). The results of above-mentioned studies are consistent with the findings of the present research. The results of Garrison and Kahen, entitled "Investigating the



relationship between Narrative therapy and avoidance of Narrative therapy with symptoms of depression and anxiety", showed that Narrative therapy is negatively correlated with depression and anxiety; in other words, the higher the Narrative therapy, the lower the level of depression and anxiety in people and Narrative writing reduces the symptoms of depression through eliminating the negative emotions and elements of thought (Grason & Kahn, 2009). Several theories, which are primarily focused on two issues of emotional regulation and confrontation, have tried to justify the reasons of the effectiveness of Narrative writing. In this regard, the findings showed that Narrative therapy would reduce interpersonal distress (Amorous, 2012). Narrative writing would correct negative views of life in the psychological system (Pennenaker & Chung, 2011). The results of the present study are, also, consistent with the findings of two other studies, one of which was conducted by Karen *et al.* (Baikie *et al.*, 2012) on the effect of Narrative therapy on the reduction of depression, anxiety and stress, and the improvement of physical symptoms in patients with mood disorders, and the other one by Ahmadi *et al.*, which showed that Narrative writing mitigates depression symptoms in university students (Ahmadi *et al.*, 2010). Based on the results of Anderson *et al.* study, narration has reduced the symptoms of post-traumatic stress and depression and improves general health of patients with AIDS (Ironson *et al.*, 2013). The results of Moradmand and Khanbani research showed that training Narrative writing improves anger, depression, and anxiety and increases the level of affection among students located in the experimental group (Moradmand *et al.*, 2016). Based on the results of Sloan, Marx, and Greenberg study, writing about thoughts, obsessions and feelings reduces depression, anxiety, and reduces stress by taking into account the moderating variable (Sloan *et al.*, 2011). The results of above-mentioned studies are consistent with the findings of the present research. According to the theory of inhibition intrusive thoughts occupy part of the limited capacity of memory and affect the cognitive function of the individual in depression. Written disclosure releases negative emotional load induced by the person's cognitive system and improves the cognitive function of individuals, thereby improving depression, through the process of empathy and protection. Also, some findings

indicate a reduction in the symptoms of anxiety and depression and increased function and improvement of interpersonal relationships under the influence of Narrative writing (Anderson *et al.*, 2010). Studies have shown that the effects of the results of these studies have supported the role of Narrative therapy, in particular its written form, in promoting cognitive abilities and mental health of individuals, and suggest that writing about disturbing experiences can improve physical and mental health. In general, Narrative writing can be considered as a simple, low-cost, and effective way to confront and cope with life-threatening experiences. Like any other research, the present study had some limitations, too; samples' not being familiar with the process of Narrative writing and resistance in expressing and writing narratives; emotional, psychological and background characteristics and cultural specificities of participating mothers, and using self-reporting scale that could have led to overestimation or under-estimation of answers have been main limitations of the present study. It is recommended to use interview and clinical examination in both pre- and post-test phases in order to get a more accurate estimate of the severity of the disorder in future studies. It is also recommended to conduct follow-up studies to evaluate the continued effectiveness of narrative over time and to compare this treatment with other treatments for depression, anxiety and stress disorders in other samples with different demographic characteristics.

Conclusion

The results of this study show that Narrative writing has a positive effect on depression, stress and anxiety in mothers; the subjects manage to overcome their feelings and emotions by writing about them and they get to modify and control their emotions. It can be claimed that anti-inhibition nature of Narrative therapy provides deep-seated emotional processing, changes negative mood, and facilitates compromise. These changes can ultimately lead to a decrease in the level of depression, anxiety and stress in individuals, especially mothers. Therefore, it can be predicted that using Narrative therapy as an efficient, non-invasive, low-cost, easy-to-use, and low-cost way to reduce the depression, anxiety and stress of other parents has positive outcomes. According to the findings of this study, the medical team, especially the nurses who play an important role in communicating with the patient,

can consider this as a method of reducing depression, anxiety and stress.

Acknowledgement

The researches feel obligated to hereby thank all individuals, including supervisor and nurses of Pediatric Stem Cell Transplantation Department, Shariati Hospital, Tehran, and mothers, who participated in, and made the completion of, this study possible.

References

- Ahmadi A, Abdollahi MA, Ramezani V, Heshmati R. The impact of written emotional expression on depressive symptoms and working memory capacity in Iranian students with high depressive symptoms. *Procedia Social and Behavioral Science* 2010; 5: 1610-4.
- Amorous L. Emotional disclosure through writing and drawing: A controlled trial on emotion regulation, coping, and subjective well-being outcomes (Doctoral dissertation, University of Tasmania) 2012.
- Anderson T, Guajardo J, Luthra R, Edwrad K. Effects of clinician-assisted emotional disclosure for sexual assault survivors: A pilot study. *Journal of Interpersonal Violence* 2010;25 (6): 1113-31.
- Asgharimoghadam M, Dibajnia P, Saed F, Zanganeh J. Preliminary Validation of Depression Anxiety and Stress Scales (DASS) in non-clinical sample. *Daneshvar Raftar Journal* 2009; 1(31):23-38. [Persian]
- Baikie KA, Geerligs L, Welhem K. Expressive writing and positive writing for participants with mood disorders: and online randomized controlled trial. *J Affect Disorders*, 2012; 136:310-19.
- Castillo-Martinez ID, Juarez-Villegas LE, Palomo-Colli MA, Medina-Sanson A, Zapata-Tarres M. Quality of life in children with acute lymphoblastic leukemia during induction therapy with PedsQL Cancer Module (C). *Boletín Médico del Hospital Infantil de México* 2009;66(5):410.
- Crawford JR, Henry JD. The Depression anxiety stress scales (DASS): normative data and latent structure in a large non-clinical sample. *The British journal of clinical psychology / the British Psychological Society* 2003; 42(2):111-31.
- Davidson AS, Fosgerau CF. General practitioners' and psychiatrists' responses to emotional disclosures in patients with depression. *Patient Education and Counseling* 2014;95(1):61-68.
- Dubey A, Pandey R, Mishra K. Role of emotion regulation difficulties and Positive/negative affectivity in explaining alexithymia-health relationship. An overview. *Indian Journal of Social Science Research* 2010; 3(3):20-31.
- Dunham G. Emotional skill falnes and marital satisfaction. Unpublished Doctoral Dissertation 2008; 34(2): 126-32.
- Espirito E, Gaiva M, Espinosa M, Barbosa D, Belasco A. Taking care of children with cancer: evaluation of the caregivers' burden and quality of life. *Rev. Latino-Am. Enfermagem* 2011; 19(3): 515-22.
- Gellaity G, Peters K, Bloofield D, Home R. Narrowing the gap: the effects of an expressive writing intervention on perceptions of actual and ideal emotional support in woman who have completed treatment for early stage breast cancer. *Psycho-Oncology* 2010;19(1): 77-84.
- Hafeziahmadi MR, Javedani M, Ghiasi B, Samiramis G. Investigation Of The Relationship Between Phase Angle And Micro-Albuminuria In Type 2 Diabetic Patients With A History Of More Than 5 Years Of The Disease In Ilam Province, Iran, *Acta Medica Mediterranea*, 2017, 33: 357. DOI: 10.19193/0393-6384_2017_2_052.
- HajiAlizadeh K, Bhrynyan AM, Naziri GH, Modaresgharavi M. Comparison of the dysfunctional attitudes in drug abusers and normal people and its psychological consequences. *Addiction Journal of Substance Abuse*, 2008; 2(7): 67-68. [Persian]
- Ironson G, O'Cleirigh C, Leserman J, Stuetzle R, Fordiani J, AnnFletcher A, Schneiderman N. Gender-Specific Effects of an Augmented Written Emotional Disclosure intervention on Posttraumatic, Depressive, and HIV-Disease-Related Outcomes: A Randomized, Controlled Trial, *Journal of Consulting and Clinical Psychology* 2013; 81(2): 284-98.
- Javedani M, Aerab-Sheibani H, Madadi Y. Ladanyooonesi relationship between C-reactive protein and carotid artery intima media thickness in polycystic ovarian syndrome patients, *Acta Medica Mediterranea*, 2015, 31: 1393.
- Kadivar M, Seyedfatemi N, Akbari N, Haghani H. The effect of narrative writing on maternal stress in neonatal intensive care settings. *The Journal of Maternal-Fetal & Neonatal Medicine* 2015;28(8):938-43.
- Kahn JH, Garrison AM. Emotional self-disclosure and emotional avoidance: Relations with symptoms of depression and anxiety. *Journal of Counseling Psychology* 2009;56(4): 573-84.
- Krich H. A test of written emotional disclosure as an intervention for posttrumatic stress disorder. *Behaviour and Therapy* 2011; 49(4): 299-304.
- Krpant M, Kross E, Berman G, Deldin JA, Jondis J. An everyday activity as a treatment for depression: The benefits of expressive writing for people diagnosed with major depressive disorder. *The Journal of Affective Disorders* 2013; 150(3): 1148-51.
- Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. *Behaviour Research and Therapy* 1995; 33(3):335-43.
- Lu Q, Stanton AL. How benefits of expressive writing vary as a function of writing instructions, ethnicity and ambivalence over emotional expression. *Psychology & Health* 2010; 25: 669-84.
- Maria M, Freda L, Francesca M, Flavia C. Effects of Guided Written Disclosure Protocol on mood states and psychological symptoms among parents of off-therapy acute lymphoblastic leukemia children. *Journal of Health Psychology* 2013; 18(6):727-36.
- Moradmand M, Khanbani M, Efficacy of written emotional disclosure on self-efficacy and affective control in student with anxiety. *Journal of Applied Psychology* 2016; 1(37):21-37. [Persian].
- Niles AN, Haltom KE, Mulvenna CM, Lieberman MD, Stanton AL. Randomized controlled trial of expressive writing for psychological and physical health: the moderating role of emotional expressivity. *Anxiety, Stress & Coping* 2014;27(1):1-7.
- North RJ, Pai AV, Hixon JG, Holahan CJ. Finding happiness in negative emotions: An experimental test of a novel expressive writing paradigm. *Journal of Positive Psychology* 2011; 6(3), 192-203.



- O'Connor DB, Hurling R, Hendrickx H, Osborne G, Hall J, Walklet E, Whaley A, Wood H. Effects of written emotional disclosure on implicit self-esteem and body image. *British Journal of Health Psychology* 2011;16(3):488-501.
- Park Y, Yi M. Development and effectiveness of expressive writing program for women with breast cancer in Korea. *Journal of Korean Academy of Nursing* 2012; 42(2), 269-79.
- Pennebaker W, Chung K. Expressive writing: Connections to physical and mental health. In Friedman HS (Ed.), *Oxford Handbook of Health Psychology*. New York, NY: Oxford University Press, 2011: 417-37.
- Radcliff M, Lumley A, Kendall J, Stevenson k, Beltran J. Written Emotional Disclosure: Testing Whether Social Disclosure Matters. *Journal of Social and Clinical Psychology* 2010;26(3), 362-84.
- Rahmati S, Delpishe A, Azami M, Hafezi Ahmadi MR, Sayehmiri K. Maternal Anemia during pregnancy and infant low birth weight: A systematic review and Meta-analysis. *International Journal of Reproductive Biomedicine* 2017;15(3):125-34.
- Riddle JP, Smith HE, Jones CJ. Does written emotional disclosure improve the psychological and physical health of caregivers? A systematic review and meta-analysis. *Behaviour Research and Therapy* 2016;80:23-32.
- Rodriguez EM, Dunn MJ, Zuckerman T, Vannatta K, Gerhardt CA, Compas BE. Cancer-related Sources of stress for children with cancer and their parents. *Journal of Pediatric Psychology* 2012; 37(2): 158-97.
- Seih YT, Chung CK, Pennebaker JW. Experimental manipulations of perspective taking and perspective switching in expressive writing. *Cognition & Emotion* 2011;25(5):926-38.
- Sloan DM, Marx BP, Greenberg EM. A test of written emotional disclosure as an intervention for posttraumatic stress disorder. *Behaviour Research and Therapy* 2011;49(4):299-304.
- Zauszniewski JA, Musil CM, Burant CJ, Au TY. Resourcefulness training for grandmothers: Preliminary evidence of effectiveness. *Research in Nursing & Health* 2014;37(1):42-52.