

Effect of Acupressure on Anxiety and General Psychological Distress among Patients Undergoing Hemodialysis: A Systematic Review

Jimmy Dharwal¹, Srinivasan P², Kanika³

¹M.Sc. Nursing Student, Department of Mental Health Nursing, ²Associate Professor, Department of Mental Health Nursing, ³Associate Professor, Department of Medical Surgical Nursing, Maharishi Markandeshwar College of Nursing, Mullana, Ambala, Haryana, India

Corresponding Author: Jimmy Dharwal

ABSTRACT

Background: Patients with chronic kidney disease along with co morbidities (like diabetes mellitus, hypertension) undergoing hemodialysis are more prone to stress and anxiety. Most often these psychological problems remain unrecognized which reduces the patient's quality of life.

Objectives: To collect the data and review various studies.

Methodology: The study design was systematic review the study includes the studies those who were related to psychological phenomenon like anxiety and general psychological distress among the patients undergoing hemodialysis and the studies showed the effect of acupressure on these phenomenon, and excludes the studies those discussed about the other method to deal with the anxiety and psychological stressor.

Analysis: The data was grouped and analyzed in terms of Meta analysis. Studies were identified through searches of MEDLINE, PUBMED, Elsevier and Google Scholar. Abstracted information is about the study design, population characteristics, interventions and outcomes.

Conclusion: Psychological illnesses are the major problems by which the person with chronic kidney disease suffers which causes significant impairment while patient is under hemodialysis. Several studies came out with the conclusions that administration of acupressure over the acupoints is beneficial along with the auricular acupressure showed significant reduction in the anxiety and general psychological distress.

Key words: Acupressure, anxiety, general psychological distress, patients undergoing hemodialysis, systematic review.

INTRODUCTION

One in 10 people worldwide have kidney disease, according to the first detailed global report on care delivery for kidney disease. Mortality due to CKD is increasing, it rose between 2005 and 2015 by 32% to 1.2 million deaths worldwide. [1] Some studies suggests that psychological distress has been proposed as a risk factor for poor outcomes in CKD patients with even minor stressors having significant

impact on an individual's well-being and health outcomes. [2] Hemodialysis treatment increases the survival rate and life expectancy of the patients, but it involves numerous challenges for the patient. Patients with chronic renal failure are among vulnerable groups. Severity of vulnerability in these patients is expected to exacerbate when they reach old-age. Due to their increased vulnerability the elderly undergoing hemodialysis require greater

care and attention and since they are dependent on dialysis machine, they suffer several forms of stress, including psychosocial tension, disease comorbidity, and lack of social support. [3] A study conducted to evaluate the quality of life, anxiety and distress in patients suffering from chronic kidney disease showed presence of more severe psychological uneasiness at the beginning of hemodialysis therapy and better perception of the life quality for those who have received medical adoption than who did not have it. [4]

MATERIALS AND METHODS

Research Design: Systematic Review

Inclusion Criteria: The study includes the studies those who were related to psychological phenomenon like anxiety and general psychological distress among the patients undergoing hemodialysis and the

studies showed the effect of acupressure on these phenomenon.

Exclusion criteria: The study excludes the studies those discussed about the other method to deal with the anxiety and psychological stressor.

Data Analysis: The data was grouped and analyzed in terms of Meta analysis. Relevant articles based on the topic of anxiety, stress, general psychological stress and other psychological phenomenon coping strategies, depression, quality of life and the effects of acupressure on patients undergoing hemodialysis were identified by search of significant articles PubMed/ Medline, SCOPUS, CINAHL, PsychoINFO, Elsevier and Google Scholar with the following key words: “anxiety”, “stress”, “general psychological distress”, “acupressure”, “hemodialysis”

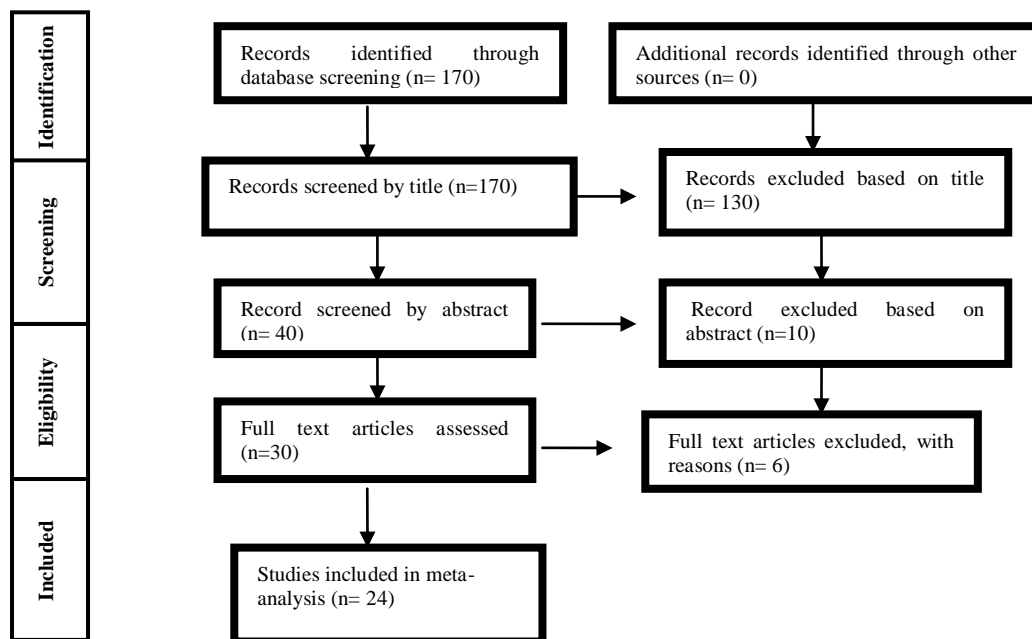


Figure 1. PRISMA Flow Diagram

RESULTS

A systematic review related to the effect of acupressure on anxiety and general psychological distress among patients undergoing hemodialysis. Total 170 studies were selected for review, out of which 24 were found appropriate for systematic

review as shown in Figure 1. Data was divided into three different sections:

Section I: Review related to anxiety among patients undergoing hemodialysis

Section II: Review related to general psychological distress among patients undergoing hemodialysis

Section III: Review related to effect of acupressure on various phenomena.

Review related to anxiety among patients undergoing hemodialysis

Out of 7, three studies (43%) were cross sectional studies showed that person suffering from chronic kidney disease and undergoing hemodialysis suffering from various psychological problems like anxiety and depression which were found negative correlated with quality of life. [5-7] Among these studies, two studies (30%) were descriptive studies assessed the impact of anxiety on patient with hemodialysis, concluded that anxiety have negative effect on perception of quality of life, whereas other study suggests that socio-demographic characteristics have effect on the anxiety and depression among patients undergoing hemodialysis i.e. females reported high level of anxiety than the male and more than 45 year old age people have higher level of depression and vice versa. [8,9] Another randomized uncontrolled trial study suggested that physical exercises have positive effect on anxiety but found no improvements in the mood of the patients. [10] One systematic review assessed that disorder like anxiety remain unrecognized as a disorder with the illness like end stage renal disease which leads to the poor quality of life. [11]

Sample Review

A descriptive study was conducted on anxiety disorders in adults who were treated by hemodialysis in an urban metropolitan centre of U.S.A. The aim of study was to assess the impact of anxiety on patients and its influence on perception of quality of life. Seventy sample of hemodialysis were selected, screening to rate the disorder was done by structured clinical interview and Hamilton Anxiety Depression Scale. The result showed that 45.7% of sample meeting the criteria for an anxiety and 40% for mood disorder. The anxiety disorder was associated with low quality of life ($t=2.4$; $p < 0.05$). The study concluded that anxiety have negative effect

on quality of life and by reducing anxiety, quality of life can be modified in positive direction.

A cluster randomized uncontrolled trial study was conducted on level of anxiety and depression in dialysis patients undertaking regular physical exercise in Polana. Total 86 patients were recruited, after the screening 37 patients were included (meeting the inclusion criteria). Sample was divided into two group i.e. group A with endurance exercise ($n=21$) and group B ($n=16$) with resistance exercise with the help of cluster random sampling technique. Data collection was done by personal questionnaire, Beck Depression Inventory (BDI) and State-Trait Anxiety Inventory (STAI). The results showed that at the end 28 patients were analyzed in group A ($n=20$) and group B ($n=8$) with mean age 63.4 ± 13.7 (14 women and 14 men). Both training did not result into improvements of mood ($p=0.702$). The study concluded that endurance training results in anxiety reduction.

A cross sectional study was conducted to seek association between anxiety, depression and quality of life of chronic renal patients on hemodialysis in Sao Paulo. Total 100 patients were recruited by convenience sampling technique. Data collection was done by socio demographic clinical questionnaire, hospital anxiety and depression scale and kidney disease and quality of life short form. The result showed that there was a negative correlation found between anxiety and depression and the quality of life domains. In addition, the average scores on the Kidney Disease and Quality of Life Short-Form were significantly lower in patients with anxiety and depressive symptoms. The study concluded that there was a negative correlation between depression and anxiety and the health-related quality of life of chronic renal failure patients on hemodialysis.

Review related to general psychological distress among patients undergoing hemodialysis

Out of 7 studies, 4 studies (57%) were cross sectional studies showed that patient had severe stress and utilized poor coping skills to adjust with the situations and also found negative correlation between the level of stress and the coping abilities. [12-15] Two studies (30%) were descriptive studies showed that patients undergoing hemodialysis uses more different coping methods for the adjustment than the peritoneal dialysis and investigated that there was positive correlation between the stress and coping methods which mainly included the avoidance and isolated thoughts. [16,17] Another study was systematic review which finds some psychosocial aspects that affects the patients with hemodialysis like depressed mood, lack of social support, poor socio economic status and distorted families linked with the end stage renal disease. [18]

Sample Review

A cross sectional study was conducted on chronic hemodialysis and peritoneal hemodialysis patients to assess the level of stress and coping abilities in Chennai. Total 50 patients were recruited in the study in which 25 patients were on peritoneal hemodialysis with the mean age of 60 ± 5 yrs (male 19 and female 6) and remaining patients on hemodialysis with mean age of 57.5 ± 7.5 yrs (male 15 and female 10). The results revealed that mean stress score in the CHD patients was higher (78.3%) than in CPD patients (43.3% $p < 0.001$). Coping ability score for CHD patients was 51.9% as compared to chronic peritoneal dialysis (CPD) patients (60.9% $p < 0.001$). The study concluded that CPD patients have better quality of life when compared to CHD.

A systematic review was conducted on the psychosocial aspects of chronic disease i.e. influences on psychopathology, social support, family issues, dialysis unit culture, and socioeconomic status on patients treated with center HD. Depressive affect and decreased perception of social support have been linked with mortality in

several studies of ESRD patients. Decreased marital satisfaction, disturbances in family dynamic, and lower socioeconomic status have been associated with poorer health outcomes and can affect patients' perception of social support and depressive affect. Chronically ill ESRD patients who undergo treatment with constant interaction and observation by medical staff were potentially an ideal group for evaluation of the effects of stress and psychosocial factors on outcomes in those with chronic disease, as well as an excellent patient population for intervention to reduce morbidity and Mortality.

A descriptive study was conducted on the coping Methods to Stress among patients on Hemodialysis and Peritoneal Dialysis in Iran. Seventy patients were recruited in the study with the help of simple random sampling technique. Data collection was done by customized questionnaire and consisted of demographic information and the Jalowiec Coping Scale (JCS) through a structured interview. The mean score of frequency of use of the coping strategy as "sometimes used" for the HD patients was 70.94 ± 18.91 and also for PD patients as "seldom used" was 58.70 ± 12.66 . The results revealed that the mean score of helpfulness of coping strategies in the HD group was 49.57 ± 19.42 as "slightly helpful", whereas in the PD group it was 37.21 ± 14.38 as "slightly helpful" Furthermore, both groups used the emotion-oriented coping styles more frequently than the problem-oriented method. The study concluded that HD patients used coping methods more frequently than the PD patients.

Review related to effect of acupressure on various phenomena.

Out of 10 studies, three studies (30%) were randomized controlled studies found the efficacy of auricular acupressure on reduction of stress, anxiety and improvement in the sleeping pattern along with this it also beneficial in reduction of uremic pruritus among patients undergoing

hemodialysis. [19-21] Among these studies one quasi experimental study suggested that administration of acupressure over acupoints reduces the intensity of thirst among the patients undergoing hemodialysis. [22] Other randomized controlled studies (60%) evaluated the effectiveness of application of acupressure among patients undergoing hemodialysis which resulted into the reduction of level of anxiety, stress, depression, general psychological stress and also effective in improving the condition related to the physiological phenomenon like fatigue and muscle cramps are the major issues with the patients undergoing hemodialysis. [23-28]

Sample Review

A randomized clinical trial study was conducted to assess the effectiveness of acupressure on fatigue among hemodialysis patients in three different hemodialysis centres in Iran. Ninety-six hemodialysis patients participated. Subjects were randomly assigned into acupressure, placebo, and control groups (32 subjects fulfilling the inclusion criteria assigned to each group). Data collection was done by demographic characteristics, visual analog scale of fatigue, and Piper Fatigue Scale. The results with One-way ANOVA tests showed significant differences in the total mean score of fatigue and fatigue mean scores in the behavioral, emotional, sensory, and cognitive dimensions in the acupressure, placebo, and control groups. The study concluded that acupressure may reduce fatigue in hemodialysis patients, and use of this non-pharmacologic technique for hemodialysis nurses is suggested.

A quasi experimental study was conducted to assess the effects of auricular acupressure therapy on stress and sleep disturbances among women belong to 40-60 years of age in Seoul, South Korea. Total 67 study participants (35 in experimental and 32 in control) were recruited in the study. Data collection was done by stress scale, cortisol level in blood, and a sleep status scale. Auricular acupressure therapy

including the auricular acupressure needle on the skin paper tape was applied on an ear for 2 weeks, 2 times per week. For the placebo control group, only the skin paper tape without the auricular acupressure needle was applied on the same acupoints. Measures were a stress scale, cortisol level in blood, and a sleep status scale. The results revealed that there were significant differences on stress (physical: $t = 2.170$, $p < .033$; psychological: $t = 2.117$, $p < .037$), cortisol level in blood ($t = 2.277$, $p < .025$), and sleep status ($t = -3.127$, $p < .004$). The study concluded that health care providers should consider providing auricular acupressure therapy as an alternative method for reducing physical and psychological stress, cortisol level in blood, and sleep

A randomized controlled trial was conducted to evaluate the efficacy of self administration acupressure on care giver stress and its co symptoms like fatigue, insomnia, depression, and health related quality of life in Hong Kong. Total 200 subjects with more than 21 years of age were randomized into self-administered acupressure intervention group and wait-list control group. Subjects self-administered acupressure intervention that include (i) an individual learning and practice session twice a week for 2 weeks, (ii) a home follow-up visit once a week for 2 weeks, and (iii) 15-min self-practice twice a day for 6 weeks. The wait-list control group received the same acupressure training after the intervention group has completed the intervention. The results showed that the intervention group had lower level of caregiver stress, fatigue, insomnia, depression, and higher health-related quality of life after completion of the intervention than participants in the wait-list control group.

CONCLUSION

Psychological illnesses are the major problems by which the person with chronic kidney disease suffers which causes significant impairment while patient is

under hemodialysis. Several studies came out with the conclusions that administration of acupressure over the acupoints is beneficial along with the auricular acupressure showed significant reduction in the anxiety and general psychological distress.

REFERENCES

1. Frellick Marcia. One in 10 People Worldwide Have Chronic Kidney Disease Available from: <https://www.medscape.com/viewarticle/878938>
2. E. Leigh Gibson et al. Differences in Knowledge, Stress, Sensation Seeking, and Locus of Control Linked to Dietary Adherence in Hemodialysis Patients. *Front. Psychol.*, 29 November 2016; <https://doi.org/10.3389/fpsyg.2016.01864>.
3. Sahaf, R., Sadat Ilali, E., Peyrovi, H., Ali, A., Kamrani, A., & Spahbodi, F. Uncertainty, the overbearing lived experience Uncertainty, the Overbearing Lived Experience of the Elderly People Undergoing Hemodialysis: A Qualitative Study. *IJCBNM* January 2017. 55(11), 13–21. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5219560/pdf/IJCBNM-5-13.pdf>
4. Pandey RK, Arya TV, Kumar A, Yadav A. Effects of 6 months yoga program on renal functions and quality of life in patients suffering from chronic kidney disease. *Int J Yoga* 2017;10:3-8
5. Ottaviani, A. C., Betoni, L. C., Cristina, S., Pavarini, I., Say, K. G., Zazzetta, M. S., Orlandi, S. Association Between Anxiety and Depression and Quality of Life of Chronic Renal Patients on Hemodialysis Associação Entre Ansiedade E Depressão E a Qualidade De Vida De Pacientes Renais Crônicos Em Hemodiálise Asociación Entre La Ansiedad Y La Depresión C. *Texto Contexto Enferm.* 2016; 25(3), 1–8
6. Turkistani, I. Nuqali, A. Badawi, M. Taibah, O, Alserihy, O. Morad, M. & Kalantan, E. The prevalence of anxiety and depression among end-stage renal disease patients on hemodialysis in Saudi Arabia. *Renal Failure.* 2014; 36(10), 1510–1515. <https://doi.org/10.3109/0886022X.2014.949761>.
7. Stasiak, C. E. S., Bazan, K. S., Kuss, R. S., Schuinski, A. F. M., & Baroni, G. Prevalence of anxiety and depression and its comorbidities in patients with chronic kidney disease on hemodialysis and peritoneal dialysis. *Jornal Brasileiro de Nefrologia.* 2014; 36(3), 325–331. <https://doi.org/10.5935/0101-2800.20140047>
8. Daniel Cukor, Jeremy Coplan, Clinton Brown, Steven Friedman, Howard Newville, Michal Safier, Lisa A. Spielman, Rolf A. Peterson, Paul L. Kimmel. Anxiety Disorders in Adults Treated by Hemodialysis: A Single-Center Study. *American Journal of Kidney Disease* 2012; DOI: <http://dx.doi.org/10.1053/j.ajkd.2008.02.300>.
9. Theofilou, P. Depression and Anxiety in Patients with Chronic Renal Failure: The Effect of Sociodemographic Characteristics. *International Journal of Nephrology*, 2011, 1–6. <https://doi.org/10.4061/2011/514070>
10. Cohen, S. D, Cukor, D., & Kimmel, P. L. Mini-Review Anxiety in Patients Treated with Hemodialysis. 2016 <https://doi.org/10.2215/CJN.02590316>
11. Dziubek, W., Kowalska, J., Kusztal, M., Rogowski, Ł., Gołębowski, T., Nikifur, M., Woźniewski, M. The Level of Anxiety and Depression in Dialysis Patients Undertaking Regular Physical Exercise Training – A Preliminary Study. *Kidney and Blood Pressure Research*, 2016; 41(1).86–98. <https://doi.org/10.1159/000368548>
12. Hishii, S., Miyatake, N., Nishi, H., Katayama, A., Uzike, K., Hashimoto, H., & Koumoto, K. Psychological distress between chronic hemodialysis patients with and without low back pain. *Environmental Health and Preventive Medicine.* 2016; 21(6), 487–491. <https://doi.org/10.1007/s12199-016-0573-8>
13. Kumar, T. R. U., Amalraj, A., Soundarajan, P., & Abraham, G. Level of stress and coping abilities in patients on chronic hemodialysis and peritoneal dialysis, 2003; 89–91.
14. Juliana, M. & Arjunan, P. Stress and Coping among Indian Haemodialysis Patients. *International Journal of Pharmacy and Biological Sciences Research Article – Biological Sciences International Journal of Pharmacy and Biological Sciences.* 2015;

- 5(4), 2321–3272. Retrieved from www.ijpbs.com%5Cnwww.ijpbsonline.com
15. Shinde, M. & Mane, S. P Stressors and the Coping Strategies among Patients Undergoing Hemodialysis. *International Journal of Science and Research*. 2014; 3(2), 266–276.
 16. Yeh, S. C. J.& Chou, H. C. Coping strategies and stressors in patients with hemodialysis. *Psychosomatic Medicine*, 2007;69(2), 182 <https://doi.org/10.1097/PSY.0b013e318031cdcc>.
 17. Parvan, K., Ahangar, R., Hosseini, F. A., Abdollahzadeh, F., Ghojzadeh, M., Jasemi, M., & Hoseini, F.A. Coping Methods to Stress Among Patients on Hemodialysis and Peritoneal Dialysis. *Saudi J Kidney Dis Transpl* 2015; 26(2), 255–262
 18. Cukor, D., Cohen, S. D., Peterson, R. A., & Kimmel, P. L. Psychosocial Aspects of Chronic Disease: ESRD as a Paradigmatic Illness. *Journal of the American Society of Nephrology* 2007; 18(12), 3042–3055. <https://doi.org/10.1681/ASN.2007030345>.
 19. Kober, A., Scheck, T., Schubert, B., Strasser, H., Gustorff, B., Bertalanffy, P., Hoerauf, K. Auricular acupressure as a treatment for anxiety in prehospital transport settings. *Anesthesiology*. 2003; 98(6), 1328–1332. <https://doi.org/10.1097/00000542-200306000-00005>
 20. Cha, N. H., Park, Y. K., & Sok, S. R. Effects of auricular acupressure therapy on stress and sleep disturbance of middle-aged women in South Korea. *Holistic Nursing Practice* 2017; 31(2), 102–109. <https://doi.org/10.1097/HNP.0000000000000197>
 21. Yan, C., Yao, W., Bao, Y., Shi, X., Yu, H., Yin, P., & Liu, G. Effect of Auricular Acupressure on Uremic Pruritus in Patients Receiving Hemodialysis Treatment: A Randomized Controlled Trial. *Evidence-Based Complementary & Alternative Medicine (eCAM)*, 2015, 1–8. <https://doi.org/10.1155/2015/593196>
 22. Yang, L. Y., Yates, P., Chin, C. C., & Kao, T. K. Effect of acupressure on thirst in hemodialysis patients. *Kidney and Blood Pressure Research* 2010; 33(4), 260–265. <https://doi.org/10.1159/000317933>.
 23. Hmwe, N. T. T., Subramanian, P., Tan, L. P., & Chong, W. K. The effects of acupressure on depression, anxiety and stress in patients with hemodialysis: A randomized controlled trial. *International Journal of Nursing Studies*. 2015;<https://doi.org/10.1016/j.ijnurstu.2014.11.002>.
 24. Bastani, F., Sobhani, M, & Emamzadeh Ghasemi, H.S. Effect of Acupressure on Fatigue in Women with Multiple Sclerosis. *Global Journal of Health Science*.2015; 7(4). <https://doi.org/10.5539/gjhs.v7n4p375>.
 25. Shariati A, Jahani S, Hooshmand M, Khalili N. The effect of acupressure on sleep quality in hemodialysis patients. *Complementary Therapies in Medicine*. 2012; 20(6):417-23. doi: 10.1016/j.ctim.
 26. Agarwal, a, Ranjan, R., Dhiraaj, S., Lakra, a, Kumar, M., & Singh, U. Acupressure for prevention of pre-operative anxiety: a prospective, randomised, placebo controlled study. *Anaesthesia* 2005;60(10), 978–81. <https://doi.org/10.1111/j.1365-2044.2005.04332.x>.
 27. Kolsoom Mohmadi, Nahid Shahgholian, Mahboubeh Valiani, and Hossein Mardanparvar. The effect of acupressure on muscle cramps in patients undergoing hemodialysis. *Iran J Nurse Midwifery Res*. 2016 Nov-Dec; 21(6): 557–561. doi: 10.4103/1735-9066.197684.
 28. Beikmoradi, A., Najafi, F., Roshanaei, G., Pour Esmaeil, Z., Khatibian, M., & Ahmadi, A. Acupressure and Anxiety in Cancer Patients. *Iranian Red Crescent Medical Journal*, 2015. 17(3), e25919.<http://doi.org/10.5812/ircmj.25919>

How to cite this article: Dharwal AJ, Srinivasan P, Kanika. Effect of acupressure on anxiety and general psychological distress among patients undergoing hemodialysis: A systematic review. *Int J Health Sci Res*. 2018; 8(8):328-334.
