



“A STUDY TO ASSESS THE EFFECTS OF FATIGUE LEVEL IN DAILY LIVING ACTIVITIES WITH A VIEW TO DEVELOP AN INFORMATIONAL BOOKLET AMONG KIDNEY TRANSPLANTATION RECIPIENTS IN IKDRC-ITS HOSPITAL OF AHMEDABAD CITY, GUJARAT STATE.”

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ABSTRACT **INTRODUCTION:** The kidney is one of vital organ and its proper function of urinary system is essential to life. Certain disorders related to the kidney are currently the leading cause of death throughout the world. Chronic kidney disease (CKD) is a common and rapidly increasing global public health problem, both in developed and developing countries. Chronic kidney disease is a complex and long-term disease where people commonly experience fatigue and reduced levels of fitness; both of which impact on an individual's ability to carry out routine activities of daily life. One of the methods used for the treatment of chronic renal failure is kidney transplantation.

AIM OF STUDY: The aim of the study is to assess the effects of fatigue level in Daily Living Activities among Kidney Transplant Recipients and find out the association between fatigue level and its effects in Daily Living Activities among Kidney Transplant Recipients and develop an informational booklet on Postoperative reduction of fatigue in daily living activities.

MATERIAL AND METHODS: The survey research approach was used with an Exploratory research design. The investigator used Non-probability Convenient sampling technique for selecting 100 samples. The fatigue pictogram (developed by Fitch et al in 2003 and validated by Mota et al in 2010) was used to assess Effects of fatigue level in Daily Living Activities among Kidney Transplant Recipients. Descriptive and inferential statistics were used to analyse the data.

RESULTS: Out of 100 samples, 29% samples were moderately tired and they were able to do some of the things they normally do / they were able to do what they have to do. Investigator used chi-square test for statistical analysis. The Calculated value of chi square (χ^2) was 136.05 which was more than the Tabulated value 16.91 of chi square (χ^2) at the 9 degree of freedom and 0.05 level of significance.

CONCLUSION: The study concludes that there was a significant relationship between fatigue level and effects of fatigue level in Daily Living Activities among Kidney Transplant Recipients.

KEYWORDS : Kidney Transplant Recipient, Daily Living Activities, Fatigue Level

INTRODUCTION AND BACKGROUND OF THE STUDY

Society has undergone deep changes in its age structures, work structures, and lifestyle habits, resulting in an increase in the elderly population and poor lifestyle habits (eating habits, obesity, sedentary lifestyle, tobacco smoking, alcoholism, hypertension, diabetes, recurrent urinary infections, renal diseases, nephritis, and abnormalities of the urinary tract). This increase reflects in the growing incidence of chronic renal failure. Renal failure leads to several changes in the lives of the sick, especially in their emotional state, resulting in stress or depression. There are other alterations like tiredness, difficulty sleeping, fear of dying, alterations in their body image, impaired sexual function, changes in the several roles they play, limited physical activity (according to the stage of the disease), difficulty in pursuing their professional activities, and lack of ability for self-care.

The kidney is one of vital organ and its proper function of urinary system is essential to life. Certain disorders related to the kidney are currently the leading cause of death throughout the world. Chronic kidney disease (CKD) is a common and rapidly increasing global public health problem, both in developed and developing countries. Chronic kidney disease is a complex and long-term disease where people commonly experience fatigue and reduced levels of fitness; both of which impact on an individual's ability to carry out routine activities of daily life. One of the methods used for the treatment of chronic renal failure is kidney transplantation.

Kidney transplantation or renal transplantation is the organ transplant of a kidney into a patient with end-stage renal disease. Kidney transplantation is typically classified as deceased-donor (formerly known as cadaveric) or living-donor transplantation depending on the source of the donor organ. Living-donor renal transplants are further characterized as genetically related (living-related) or non-related (living-unrelated) transplants, depending on whether a biological relationship exists between the donor and recipient. Exchanges and chains are a novel approach to expand the living donor pool. In February 2012, this novel approach to expand the living donor pool resulted in the largest chain in the world, involving 60 participants organized by the National Kidney Registry. In 2014 the record for the

largest chain was broken again by a swap involving 70 participants.

After undergoing kidney transplantation, some patients still face one symptom that continues after the dialysis sessions: fatigue (physical and mental tiredness that does not get better after resting). Fatigue effects in the everyday lives of kidney transplant patients can be beneficially modified early by changing this scenario.

Fatigue is an unpleasant sensation with physical, psychological and emotional symptoms described as tiredness that cannot be relieved with common strategies to restore energy; it varies in duration, intensity, and reduces, in different degrees, the ability to perform usual activities. Fatigue is felt since before transplantation, due to dialysis, and continues after the surgery. It can have implications such as a low inclination to perform DLA, intrinsic factor of alterations in body image, predisposing factor for the development of depression, side effects of immunosuppressive medications, and even the beginning of organ rejection.

Fatigue is a common symptom in patients with advanced kidney disease, with implications for quality of life (QoL) and clinical outcomes. Fatigue is a complex, multidimensional, and multifactorial phenomenon, which has been defined as 'extreme and persistent tiredness, weakness or exhaustion mental, physical or both'. Common symptoms also include reduced motivation and physical activity, in addition to general lethargy. Renal patients adjust the timing and intensity of their daily activities in order to accommodate their fatigue. For example, some dialysis patients who suffer from post-treatment fatigue require more than 3 hours of rest after each session to recover, which is a considerable burden on top of the treatment regimen.

Chronic fatigue due to the kidney transplantation can also reduce patient's quality of life. The results of some studies demonstrated the significant effects of fatigue, including less ability to exercise and participate in social activities. Some patients claimed fatigue "prevented them from having a normal life". In Kidney Transplant Recipients (KTRs) as well as in patients before transplantation, it has been demonstrated that fatigue is associated with lower quality of life. However, it is unknown how large the impact is of severe fatigue on functional impairment and work status.

OBJECTIVES OF THE STUDY

1. To assess the effects of fatigue level in daily living activities among kidney transplantation recipients.
2. To find out the association between fatigue level and its effects in Daily Living Activities among Kidney Transplant Recipients.
3. To develop an informational booklet on Postoperative reduction of fatigue in daily living activities.

Assumption

The study assumes that,

The kidney transplant recipients may have interference with daily living activities after kidney transplantation.

MATERIAL AND METHODS:

In the present study, the research approach used for the study was Non-experimental with Survey research design. Present study was undertaken at Transplant OPD of IKDRC-ITS hospital of Ahmedabad, Gujarat. The sample consisted of 100 samples that are kidney transplantation recipients who are coming for follow up in transplantation OPD at IKDRC-ITS hospital, Ahmedabad. The investigator adopted the Non-probability convenience sampling technique for this study to select the sample. An informational booklet was developed for people in general so that they can adopt healthy lifestyle and reduce effects of fatigue in daily living activities after kidney transplantation.

The instrument used for generating necessary data was Fatigue pictogram to assess effects of fatigue level in daily living activities among kidney transplant recipients. The investigator collected the data by establishing the rapport with the subject confidentiality of their response was assured. The data were analyzed and interpreted in terms of objectives of the study. Descriptive and inferential statistics were utilized for the data analysis.

Ethical Considerations

With the view of ethical consideration, the investigator has taken permission from Principal of IKDRC College of Nursing Ahmedabad. After that the investigator has discussed and taken permission from Director of IKDRC-ITS hospital, Ahmedabad and written permissions were obtained. Also, the kidney transplant recipients were explained about the purpose of the study and written consent was taken from them for their participation in study. They were explained about the right to refuse from participating in the study. The kidney transplant recipients were assured that the information given by them will be kept as confidential and will be purely used for research purpose.

RESULTS

Table 1: Fatigue Level Of Samples In Terms Of Frequency And Percentage (N=100)

FATIGUE LEVEL	FREQUENCY	PERCENTAGE
0	21	21%
1	39	39%
2	33	33%
3	7	7%

Where, 0- Not at all tired

1- A little bit tired / Somewhat tired

2- Moderately tired

3- Extremely tired

The fatigue level is shown in Table 1 in accordance with the pictogram used. The results revealed that 21% of the samples stated that they were not at all tired, 39% of the samples were a little bit tired / Moderately tired, 33% of the samples were moderately tired and 7% of the samples were extremely tired.

Table 2: Fatigue Effects In Daily Living Activities (dlas) Of Samples In Terms Of Frequency And Percentage (N=100)

FATIGUE EFFECTS IN DLAs	FREQUENCY	PERCENTAGE
0	21	21%
1	22	22%
2	53	53%
3	4	4%

Where, 0- I can do everything I normally do

1- I can do almost everything I normally do

2- I can do some of the things I normally do / I do what I have to do

3- I can do very little

Table 2 shows the fatigue effects in DLAs of samples. The results in table 2 show that 21% of samples stated that they were able to do everything they normally do. 22% of samples stated "I can do almost everything I normally do", 53% of samples stated "I can do some of the things I normally do" and "I do what I have to do" and 4% of samples stated "I can do very little".

Table 3: Association Between Frequency Of Fatigue Level And Its Effects In Daily Living Activities (dlas) Among Kidney Transplant Recipients. (N=100)

EFFECTS OF FATIGUE LEVEL IN DLAs (SCORE)	FATIGUE LEVEL (SCORE)			
	0 (N=21)	1 (N=39)	2 (N=33)	3 (N=7)
0 (N=21)	18	2	1	0
1 (N=22)	3	16	3	0
2 (N=53)	0	21	29	3
3 (N=4)	0	0	0	4

Above table 3 shows that; 18 (18%) samples were not at all tired and they were able to do everything they normally do, 2 (2%) samples were little bit tired / somewhat tired but they were able to do everything they normally do, 1 (1%) sample were moderately tired but he/she was able to do everything he/she normally do and none of samples were extremely tired. 3 (3%) samples were not at all tired and they stated "I can do almost everything I normally do", 16 (16%) samples were little bit tired / somewhat tired and they stated, "I can do almost everything I normally do" and 3 (3%) samples were moderately tired and they stated, "I can do almost everything I normally do". 21 (21%) samples stated, "I can do some of the things I normally do / I do what I have to do" and they were little bit tired / somewhat tired, 29 (29%) samples stated, "I can do some of the things I normally do / I do what I have to do" and they were moderately tired and 3 (3%) samples were extremely tired but they stated, "I can do some of the things I normally do / I do what I have to do". At the last, 4 (4%) samples were stated that they were able to do very little and they were extremely tired.

Table 4: Association Between Fatigue Level And Its Effects In Dlas [N=100]

Association between fatigue level and its effects in DLAs	χ^2		DF	Level of significance
	Calculated value	Tabulated value		
	136.05	16.91	9	significant

Significant at 0.05 level dF (9), $\chi^2 = 136.05$

Above table 4 shows Analysis and Interpretation of Data related to Association between fatigue level and effects of fatigue level in daily living activities among kidney transplant recipients. For that, Investigator used chi-square test for statistical analysis. The Calculated value of chi square (χ^2) was 136.05 which was more than the Tabulated value 16.91 f chi square (χ^2) at the 9 degree of freedom and 0.05 level of significance.

DISCUSSION

This study addressed to assess effects of fatigue level in daily living activities among kidney transplant recipients in IKDRC-ITS hospital, Ahmedabad city of Gujarat state. The investigator used standardized tool Fatigue pictogram for assessment of effects of fatigue level in daily living activities. In this survey, 100 samples participated. In relation to the finding of the study it was revealed that 29% samples were moderately tired and they were able to do some of the things they normally do / they were able to do what they have to do. Investigator used chi-square test for statistical analysis. The Calculated value of chi square (χ^2) was 136.05 which was more than the Tabulated value 16.91 of chi square (χ^2) at the 9 degree of freedom and 0.05 level of significance. Another purpose of study is to develop an information booklet for people in general so that they can adopt healthy lifestyle and reduce effects of fatigue in daily living activities after kidney transplantation. So, the investigator has developed a self-structured informational booklet with title "Be active after transplant and Relieve your fatigue" based on results.

CONCLUSION

For Analysis and Interpretation of Data related to Association between

Frequency of fatigue level and its effects in daily living activities (DLAs) among kidney transplant recipients, Investigator used chi square test for statistical analysis. The Calculated value of chi square (χ^2) was 136.05 which was more than the Tabulated value 16.91 of chi square (χ^2) at the 9 degree of freedom and 0.05 level of significance. So, research hypothesis H1 was accepted and null hypothesis H0 was rejected. Thus, it can be inferred that there is a significant relationship between fatigue level and effects of fatigue level in daily living activities among kidney transplant recipients.

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Conflict Of Interest – Nil

REFERENCES

1. Kidney Transplantation Manual. Brazilian Transplantation Society. profissionais/biblioteca/pdf/manual_transplante_rim.pdf. Accessed May 09, 2011, Available at: <http://www.abto.org.br/abto02/portugues/>
2. Sack, Kevin (18 Feb 2012). "60 Lives, 30 Kidneys, All Linked". New York Times.
3. Jump up Pitts, Byron (15 Apr 2015), "Changing Lives Through Donating Kidneys to Strangers", ABC News Nightline.
4. Mota DDCF, Pimenta CAM, Fitch MI. Fatigue pictogram: an option for assessing fatigue severity and impact. *Nursing School Magazine of USP* 2009;43:1080e7.
5. Manual de Transplante Renal: período pós-transplante. Available at: http://www.abto.org.br/abto02/portugues/profissionais/biblioteca/pdf/manual_transplante_pos.pdf. Accessed May 09, 2011.
6. Rodrigue JR, Mandelbrot DA, Hanto DW, Johnson SR, Karp SJ, Pavlakis M. A cross-sectional study of fatigue and sleep quality before and after kidney transplantation. *Clin Transplant* 2011; 25: E13. Wiley Online Library, PubMed, Web of Science® Times Cited: 12.
7. World health organization burden of disease project 2004) available at <http://www3.who.int/whosis/menu.cfm>.
8. Agarwal SK, dash SC, et al. prevalence of chronic renal failure in adults in Delhi, India. *Nephrol dial transplant*. 2009;111:c197-203.
9. Modi GK, Jha V. the incidence of end stage renal disease in India: a population based study. *Kidney int*. 2011;79:573.
10. Garica GG, harden p, chapman j; world kidney day steering committee. The global role of kidney transplantation. *Lancet* 2012;379:e36-8.
11. www.ikdre-its.org
12. F. O. Procopio, V.P. Cruz, et al (2014). Fatigue effects in DLA of kidney transplantation recipients. <http://dx.doi.org/10.1016/j.transproceed.2014.05.024>
13. Pawlikowska T, Chalder T, Hirsch SR et al. Population based study of fatigue and psychological distress. *BMJ* 1994;308: 763–766.
14. David A, Pelosi A, McDonald E et al. Tired, weak, or in need of rest: fatigue among general practice attenders. *BMJ* 1990;301: 1199–1202.
15. Horigan AE, Schneider SM, Docherty S et al. The experience and self-management of fatigue in patients on hemodialysis. *Nephrol Nurse J* 2013; 40: 113–122.
16. Sklar AH, Riesenber LA, Silber AK et al. Postdialysis fatigue. *Am J Kidney Dis* 1996; 28: 732–736.
17. Kalkman JS, Zwarts MJ, Schillings ML, et al. Different types of fatigue in patients with facioscapulohumeral dystrophy, myotonic dystrophy and HMSNI. Experienced fatigue and physiological fatigue. *Neurol Sci* 2008;29(Suppl2):238–40.
18. Horneber M, Fischer I, Dimeo F, et al. Cancer-related fatigue: epidemiology, pathogenesis, diagnosis, and treatment. *Dtsch Arztebl Int* 2012;109:161–71; quiz 172.
19. Braley TJ, Chervin RD, Segal BM. Fatigue, tiredness, lack of energy, and sleepiness in multiple sclerosis patients referred for clinical polysomnography. *Mult Scler Int* 2012;2012:673936.
20. Kluger BM, Krupp LB, Enoka RM. Fatigue and fatigability in neurologic illnesses: proposal for a unified taxonomy. *Neurology* 2013;80:409–16.
21. Duncan F, Greig C, Lewis S, et al. Clinically significant fatigue after stroke: a longitudinal cohort study. *J Psychosom Res* 2014;77:368–73.
22. Wu LJ, Wu MS, Lien GS, et al. Fatigue and physical activity levels in patients with liver cirrhosis. *J Clin Nurse* 2012;21:129–38.
23. Harris Interactive Poll. New survey provides insight into CKD, exhaustion, anaemia. *Nephrol News Issues* 17:2:29-31, 2003.
24. A medical education institute/Life options publication, vol 1, No.4, December 2004 available at www.lifeoptions.org and www.kidneyschool.org.
25. Martine M. Goedendorp et al. Severe fatigue after kidney transplantation: a highly prevalent, disabling and multifactorial symptom. *Transplant International* 2013, Published by John Wiley & Sons Ltd 26(2013) 1007–1015.
26. Micol Artom et al. Fatigue in advanced kidney disease, *International Society of Nephrology*, (2014) 86, 497–505 doi:10.1038/ki.2014.86.
27. Xiao-Hong Lin et al. Fatigue and its associated factors in liver transplant recipients in Beijing: a cross-sectional study, *BMJ Open* 2017;7:e011840. doi:10.1136/bmjopen-2016-011840.
28. Manisha Jhamb et al, Prevalence and Correlates of Fatigue in CKD and ESRD, 2011 American Society of Nephrology Kidney week and 2013 World Congress of Nephrology annual meeting.
29. Bonner A. et al, The impact of fatigue on daily activity in people with chronic kidney disease. *J Clin Nurse*. 2010;19(21–22):3006–15.
30. Karakan S. et al, Factors related to fatigue and subgroups of fatigue in patients with end-stage renal disease. 2011 Nov;76(5):358-64.
31. Bossola M. et al, Fatigue and its correlates in chronic hemodialysis patients. *Blood Purif*. 2009;28(3):245–52.
32. De Groot I. B. et al, Difference in quality of life, fatigue and societal participation between living and deceased donor kidney transplant recipients. 2013 JulAug;27(4) 415-23. doi: 10.1111/ctr.12165.
33. Black, J.M. (2010). *Medical Surgical Nursing*. (8th ed.), vol-1. New Delhi: Elsevier publishers, New Delhi.
34. Polit D. and Beck, C.T. (2006). *Nursing research (Principles and Methods)*. (7th ed.). Philadelphia: Lippincott Williams & Wilkins.
35. Basvanthappa, B.T. (2012). *Nursing Research*. (3rd ed.) New Delhi: Jaypee Brothers Medical Publishers Pvt Ltd.
36. Campbell, W.G. AND Stephen, V.B. (1973). *Forms and style in thesis writing* (4th ed.). Boston: Houghton Millin Company.
37. Mahajan B. K. (2010). *Methods in Biostatistics for Medical Students and Research workers*. (7th ed.). New Delhi: Jaypee Brothers Medical Publishers (P) Ltd.
38. Sharma, S. K. (2015). *Nursing Research and Statistics*. New Delhi: Elsevier.