

# THE RELATIONSHIP BETWEEN MULTIDIMENSIONAL SOCIAL SUPPORT AND KIDNEY DISEASE QUALITY OF LIFE – SHORT FORM AMONGST PERITONEAL DIALYSIS PATIENTS

YX. TOH

The National Kidney Foundation, Singapore

## 1. INTRODUCTION

End stage renal disease is defined as an irreversible process of which an individual's kidneys are no longer able to filter waste products and fluids from the body. With the increasing incidence rate of end-stage renal failure, Singapore aging population and lack of land space, it is important to examine the renal community support in supporting peritoneal dialysis treatment and shift the focus from acute disease to chronic disease management.

The purpose of the study aims to examine the relationship between the multidimensional social support and peritoneal dialysis patient's quality of life. The study hypothesizes that higher perceived level of social support are more likely to lead to perceived better quality of life.

## 2. METHODS

Stratified random sampling method is used to group participants into homogenous strata before a systematic random sampling is conducted. The study consider participants who have been on peritoneal dialysis in The National Kidney Foundation (NKF) for at least a year. This is to allow adequate timeframe for patient and/or their family members to adjust to the change in lifestyle patterns and choices upon the transition into the dialysis treatment phase.

There are 407 patients in NKF that has been on peritoneal dialysis for at least a year during the period of study. The sample size of 165 was determined based on the confidence level of 90% and 5% margin of error.

Quantitative data were collected through home visits with participants by completing two questionnaires, Kidney Disease Quality of Life Short Form (KDQOL-SF) and Multidimensional Scale of Perceived Social Support (MSPSS).

### Correlations

		SocialSpt	KDQOL
SocialSpt	Pearson Correlation	1	.317**
	Sig. (2-tailed)		.004
KDQOL	Pearson Correlation	.317**	1
	Sig. (2-tailed)	.004	
N		83	83

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
significantother	83	1	7	5.74	1.308	-1.574	.264
familysubscale	83	2	7	5.81	1.163	-1.238	.264
friendssubscale	83	1	7	3.99	1.930	-.201	.264
Valid N (listwise)	83						

## 3. RESULTS & ANALYSIS

Out of 165 participants, there were 83 who successfully completed both questionnaire, 14 deceased, 5 hospitalized, 3 that undergone transplant surgery, 6 that has converted their mode of treatment to haemodialysis due to various medical reasons, 32 that refused to participate in the research and 22 that were not contactable. Pearsons Rho Correlation Analysis is utilized to analyze the quantitative data collected from the administered questionnaires by measuring the relationship between two quantitative, continuous variables.

In KDQOL-SF there are five domains - symptoms and problems subscale, effects of disease, burden of disease, physical composite scale (PCS) and mental composite scale (MCS). In MSPSS, there are three subscales, significant others, family and friends. The result showed a positive weak correlation between the two variables – social support and quality of life (Figure 1.1). There were also little to no correlation found between the other domains of KDQOL-SF and MSPSS.

One possible reason for the low correlation is that most of the peritoneal dialysis patients are older and sicker. Lowered quality of life in older patients is consistent with the expected outcome with increasing age due to physical incompetency. Older patients might be more frail in their condition and perceived lower quality of life regardless of their social support.

Past research also found that patients who are unemployed and illiterate perceived lower quality of life regardless of their social support while increased levels of perceived intrusiveness were also associated with compromised quality of life.

## LIMITATION

The data collection process by different researchers was unable to ensure consistencies of how the questionnaires were administered. KDQOL-SF generally requested participants to answer in relation to their symptoms and feelings for the past four weeks which could have affected the accuracy of the results in the event of recent hospitalizations.

The study also did not take into consideration other factors (e.g. age, medical acuity, employment, education) which could influence the level of perceived social support and quality of life.

## CONCLUSION

The study shows a positive and weak correlation between KDQOL and MSPSS and the importance of assessing medical acuity and medical comorbidities in addition to end stage renal failure in participants. The implications of these findings could shed more insights on possible techniques that can be utilized to better support home-based peritoneal dialysis patients and their family members. More studies have to be conducted on this topic for better generalizability and reliability of this research on the role of social support in the context of the individual nested within a community.

## REFERENCES

Bligic, A., Akman, B., Sezer, S., Ozisik, L., Arat, Z., Ozdemir, F. N., and Haberal, M. (2008). Predictors for quality of life in continuous ambulatory peritoneal dialysis patients. *Nephrology* 13: 587-592. doi:10.1111/j.1444-1797.2008.00970.x

Brown, E. A., Johansson, L., Farrington, K., Gallagher, H., Sensky, T., Gordon, F., Silva-Gane, M. D., Beckett, N., and Hickson, M. (2010). *Nephrology Dialysis Transplant* 25: 3755-3763. doi:10.1093/ndt/gfq212

Cheah, J. (2001). Chronic disease management: a Singapore perspective. *British Medical Journal*, 323, 990 – 993

Chow, S. K. and Wong, F. K. (2010). Health-related quality of life in patients undergoing peritoneal dialysis: effects of a nurse-led case management programme. *Journal of Advanced Nursing*, 66: 1780-1792. doi:10.1111/j.1365-2648.2010.05324.x

Department of Statistics Singapore. (2017). Population trends. Retrieved from <https://www.singstat.gov.sg/statistics/visualising-data/storyboards/population-trends>

Glenn, C., Enwerem, N., Odeyemi, Y., Mehari, A., Gillum, R. F. (2015). Social support and sleep symptoms in US adults. *Journal of Clinical Sleep Medicine*, 11, 957. Retrieved from [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list\\_uids=26094921](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=26094921)

Hays, R. D., Kalkich, J. D., Hayes, D. L., Coons, S. J., & Carter, W. B. (1994). Development of the Kidney Disease Quality of Life (KDQOL) Instrument. *Quality of Life Research*, 3, 329–338.

Health Promotion Board. (2016). National Registry of Diseases Office: *Singapore Renal Registry Annual Report 2015*. Retrieved from <https://www.nrdo.gov.sg/docs/librariesprovider3/default-document-library/singapore-renal-registry-annual-report-2015.pdf?sfvrsn=0>

Hocking, R. R. (1976). The analysis and selection of variables in linear regression. *Biometrics*, 32, 1-50.

Ibrahim, N., Chiew-Thong, N. K., Desa, A. and Razali, R. (2013). Depression and coping in adults undergoing dialysis for end-stage renal disease. *Asia-Pacific Psychiatry*, 5: 35–40. doi:10.1111/appy.12042

John, M., Gupta, A., Sharma, R., & Kaul, A. (2017). Impact of residual renal function on clinical outcome and quality of life in patients on peritoneal dialysis. *Saudi Journal of Kidney Diseases and Transplantation*, 28(1), 30. Retrieved from [http://link.galegroup.com.libproxy1.nus.edu.sg/apps/doc/A47762352/AONE?u=nsl\\_ib&sid=AONE&id=bdef3df3](http://link.galegroup.com.libproxy1.nus.edu.sg/apps/doc/A47762352/AONE?u=nsl_ib&sid=AONE&id=bdef3df3)

Khalk, S. (2017, March 5). NKF can't keep up with rising number of new kidney patients. *The Straits Times*. Retrieved from <http://www.straitstimes.com/singapore/health/nkf-cant-keep-up-with-rising-number-of-new-kidney-patients>

Khalk, S. (2017, March 20). High occupancy at dialysis centres. *The Straits Times*. Retrieved from <https://www.tsp.sg/news/singapore/high-occupancy-dialysis-centres>

Kimmel, P. L. (2000). Psychosocial Factors in Adult End-Stage Renal Disease Patients Treated with Hemodialysis: Correlates and Outcomes. *American Journal of Kidney Diseases*, 35(4), 132-140.

Kohli, S., Batra, P., & Aggarwal, H. (2011). Anxiety, locus of control, and coping strategies among end-stage renal disease patients undergoing maintenance hemodialysis. *Indian Journal of Nephrology*, 21(3), 177. Retrieved from [http://link.galegroup.com.libproxy1.nus.edu.sg/apps/doc/A264987798/AONE?u=nsl\\_ib&sid=AONE&id=91b49a48](http://link.galegroup.com.libproxy1.nus.edu.sg/apps/doc/A264987798/AONE?u=nsl_ib&sid=AONE&id=91b49a48)

Lind, D. A., Marchal, W. G., Wathen, S. A. (2013). *Basic Statistics For Business & Economics* (8<sup>th</sup> edition). New York: McGraw- Hill.

Ministry of Health. (2010). National Health Survey. Retrieved from [https://www.moh.gov.sg/content/dam/moh\\_web/Publications/Reports/2011/NHS2010\\_%20-%20low%20res.pdf](https://www.moh.gov.sg/content/dam/moh_web/Publications/Reports/2011/NHS2010_%20-%20low%20res.pdf)

Nayana, S. A., Balasubramanian, T., Nathaliya, P. M., Nimsha Hussain, P., Mohammed Salim, K. T. and Muhammed Lubab, P. (2016). A cross sectional study on assessment of health related quality of life among end stage renal disease patients undergoing hemodialysis. *Clinical Epidemiology and Global Health*, 5(3), 148 – 153. doi: 10.1016/j.cegh.2016.08.005

Nazky, A. E., Alhmad, M., Musli, C., and Nabolsi, M. (2013). Hemodialysis stressors and coping strategies among Jordanian patients on hemodialysis: a qualitative study. *Nephrology Nursing Journal: Journal of the American Nephrology Nurses' Association*, 2013 Jul-Aug; 40(4):321-7.

Oren, B., and Enc, N. (2012). Quality of life in chronic haemodialysis and peritoneal dialysis patients in Turkey and related factors. *International journal of nursing practice*, 19: 547-556. doi:10.1111/j.12098

Prime Minister Office. (2016, March 29). *DPM Tharman Shannugaratnam on the opening of BIK 940 Jurong West NKF Dialysis Centre on 29 March 2016*. Retrieved from <https://www.pmo.gov.sg/newsroom/dpm-tharman-shannugaratnam-opening-bik-940-jurong-west-nkf-dialysis-centre-29-march-2016>

Rolland, J. (1999). Parental illness and disability: A family systems framework. *The Association for Family Therapy*, 21, 242-266.

Valderrabano, F., Jofre, R., Lopez-Gomez, J. M. (2001). Quality of life in end-stage renal disease patient. *American Journal of Kidney Diseases*, 38(3), 443-464. doi:10.1053/ajkd.2001.26824

Wakeel, J. A., Bayoumi, M., Suwaida, A. A., Harbi, A. A., A. A. A., M. A. G., and A. M. (2009). Influences on quality of life in peritoneal dialysis patients. *Renal Society of Australasia Journal*, 5(3), 127-132.

Wolf, E. J., & Mori, D. L. (2009). Avoidant coping as a predictor of mortality in veterans with end-stage renal disease. *Health Psychology*, 28(3), 330-337. <https://doi.org/10.1037/a0013583>

Zimet, G. D., Dahlem, N. W., Zimet, S. G., and Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 1988;52:30-42.

Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., Berkoff, K. A. (1990). Psychometric characteristics of the Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 1990;55:610-617. doi: 10.1080/00223891.1990.9674095.