

The Benefits of Patient-Reported Outcome Measures (PROMs) for Haemodialysis Patients in the National Kidney Foundation, Malaysia

Nur Hadiah Dalilati Buhan, Normahwati Mohamad, Siti Fatimah Mohamed, Nor Hazuah Ismail, S.Y. Pang, Nor Adibah Ismail, Nurul Syazwana Mohammad Iqbal, L.H. Loo.

Welfare Department, National Kidney Foundation of Malaysia.

ABSTRACT

Introduction:

Dialysis patients of advanced chronic kidney disease (CKD) go through various symptoms that would lead to a poor health-related quality of life (JRQoL), as there may be many physical and emotional concerns occurring (Mittal SK, et al, 2001). In National Kidney Foundation of Malaysia (NKF), the Patient-Reported Outcome Measures (PROMs) serves to formulate an intervention plan, engage dialysis patients in self-development, and enhance the process of psychosocial support and care. The routine usage of a standardized instrument allows for a better method of monitoring the patients' various health aspects that may have initially not be detected before (Greenhalgh J, 2009).

Aim:

This study aimed to explore the use of PROMs to target specific dialysis patient groups in NKF Malaysia for haemodialysis rehabilitation and psychosocial support.

METHODS

Setting:

As a charity organization, National Kidney Foundation of Malaysia has 29 Dialysis Centers that focuses on providing subsidized haemodialysis for patients who are qualified. As the centers are throughout various locations in Malaysia, such as Sabah and Sarawak, the research did not focus on only one location.

Design:

A yearly routine screening of all the patients dialyzing at the 29 NKF Dialysis Centers are done by the NKF Welfare Department and collected in a cross-sectional multicenter method.

Subjects:

A sample of 1,562 dialysis patients from all the NKF Dialysis Centers were collected by the Welfare Department in 2024.

Screening Criteria:

Patients who are dialyzing in the NKF Dialysis Centers participated in the routine screening with a response rate of 89.5%. Patients who were unable to participate are those who were away due to hospitalization, ill, cognitively impaired, or had refused to be included.

Screening Tool:

The research was conducted with administering the SF-12v2 Health Survey questionnaire. The tool is used in order to measure the physical and mental components of the patient. The patients were also interviewed with supplemental questions for additional details on their lifestyles, physical functionality, psychologically and socially after dialyzing for their treatment.

Statistical Analysis:

Statistical analyses were performed with the IBM SPSS Statistics version 20, using univariate and bivariate analyses.

RESULTS

Profiles:

The mean age of haemodialysis patients was 56.5 years, with 54.7% being male, 61.2% married, and 66.7% having an education level above secondary school. Additionally, 15.8% were employed, 50.7% had diabetes as the etiology, and 82.8% had one or more functional co-morbidities. Among them, 20.6% had cardiorespiratory comorbidity, 34.2% had musculoskeletal comorbidity, and 24.1% had neurological comorbidity. Furthermore, 82.2% had independent mobility, with a mean dialysis duration of 73.5 months.

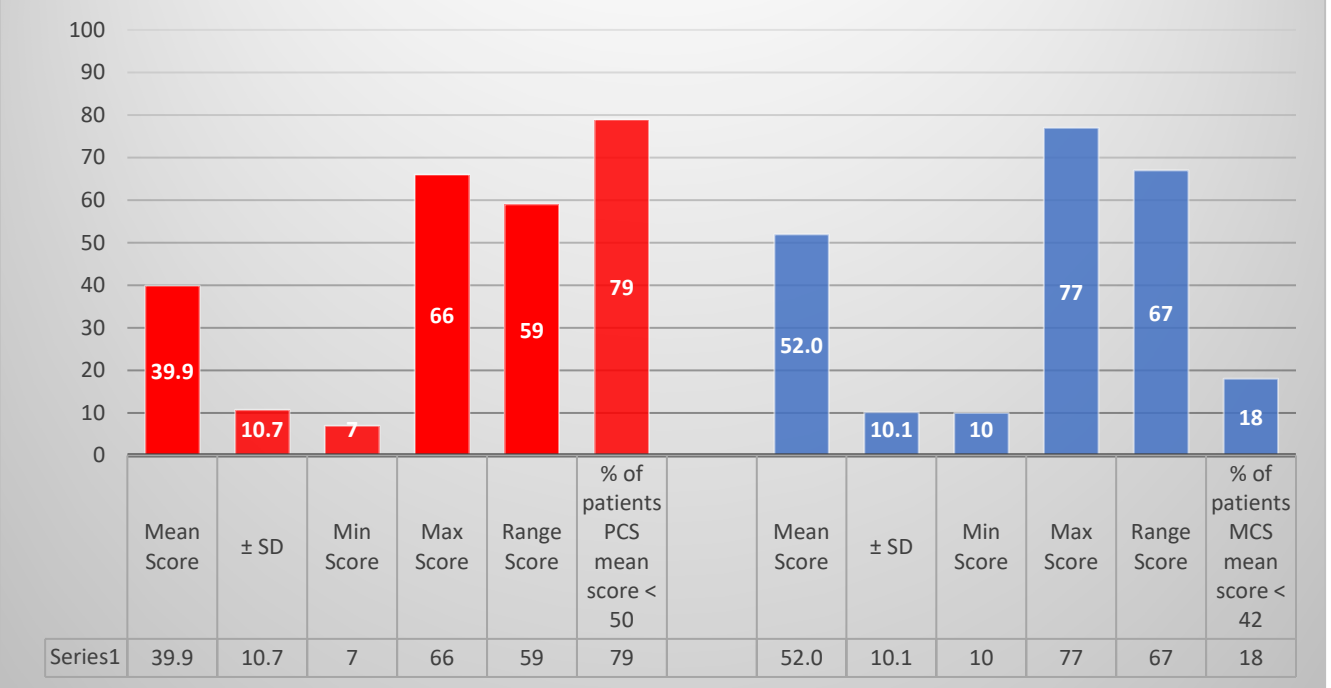
Physical and Mental Health:

The mean physical health score was 40, $\pm$ SD 10.7, while the mean for mental health score was 51.9, $\pm$ SD 10.1, indicating that

RESULTS

higher scores from 0-100 reflect better health as shown in Figure 1. Overall, the targeted dialysis patients were 79% who scored <40 on the mean score for physical health, the cut-off for poorer and worse physical health here, and 18% who scored <42 on mental health, indicating a risk for depressive distress, were targeted for haemodialysis rehabilitation, psychosocial support, and counseling.

Figure 1. Summary of PCS and MCS of Patient-Reported Outcome Measure 2024 at 29 NKF Dialysis Centers



Discussion:

In haemodialysis rehabilitation, 79% of dialysis patients with a physical health score of <40 were encouraged to exercise to improve their body strength, flexibility, gait balance, and endurance for physical health improvement, especially for patients with stable cardiovascular status and not at risk of fractures. There are significant benefits of exercise in improving muscle impairments, physical functions, and overall physical performance in dialysis patients; therefore, addressing the patient and facility-related barriers to exercise can effectively counsel on physical activity (Smart, N.A, et al, 2013). Some of the beneficial exercises include stretching for the hamstring, calf, and heel, as well as squats, step-ups, sit-to-stands, leg raises, walking, and other exercises at home and in dialysis centers. There were multiple randomized trials and meta-analyses reporting that exercises reduce depressive symptoms in people on dialysis (Pu, J., et al., 2019). At the same time, 18% of the dialysis patients with a mental health score of <42 were targeted for psychosocial support to cope with their problematic mental state. The counseling services and support can help dialysis patients develop insights into their stressors and problematic areas, and formulate action plans to improve their physical and mental health. The counseling services can also be extended to their family caregivers on their stresses and concerns, to benefit their psychological well-being. In fact, counseling interventions have been highlighted to be useful for non-clinical depression, and not medication (Kimmel, P.L., et al., 2000).

CONCLUSIONS

Although targeted dialysis patients can be identified and engaged, implementing psychosocial interventions presents challenges since lifestyle changes and problem-solving success are difficult to quantify. Despite the lack of randomized controlled trial evidence, the intrinsic benefits that dialysis patients in NKF Malaysia receive through psychosocial support cannot be overlooked. PROMs are indeed beneficial for problem-solving, performance monitoring, and quality indicators are integrated into NKF Malaysia's routine management for quality care and outcomes.

REFERENCES

1. Kimmel, P.L., Peterson, R.A., Weih, K.L., Simmens, S.J., Alleyne, S., Cruz, I., & Veis, J.A. (2000). Multiple measurement of depression predict mortality in a longitudinal study of chronic haemodialysis outpatients. *Kidney International*, 57(5), 2093-2098
2. Jiang Pu, Zheng Jiang , Weihua Wu, Li Li , Liling Zhang, Ying Li, Qi Liu, Santao Ou. (2019). Efficacy and safety of intradialytic exercise in haemodialysis patients: a systematic review and meta-analysis. *BMJ Open*; 9:e020633. doi:10.1136/bmjopen-2017-020633
3. Black, N., Patient reported outcome measures could help transform health-care. *Bmj*, 2013. 346: p. f167
4. Greenhalgh J (2009) The applications of PROs in clinical practice: what are they, do they work, and why? *Qual Life Res* 18(1):115-123
5. Mittal SK, Ahern L, Flaster E et al. Self-assessed physical and mental function of haemodialysis patients. *Nephrol Dial Transplant* 2001; 16: 1387-1394
6. Davison, S.N, Klarenbach, S., Manns, B., et al (2021). Patient-reported outcome measures in the care of in-centre hemodialysis patients. *J Patient Rep Outcomes*, 5(Suppl 2):93, <https://doi.org/10.1186/s41687-021-00365-3>
7. Smart, N.A., Williams, A.D., Levinger, L, et al. (2013). Exercise and physical activity in patients with chronic kidney disease: a systemic review and metal-analysis. *Nephrology (Carlton)*, 18(11):697-705.
8. Heiwe S, Jacobson SH. Exercise training for adults with chronic kidney disease.. *Cochrane Database Syst Rev* 2011 Oct 5;2011(10):CD003236. doi: 10.1002/14651858.CD003236.pub2. PMID: 21975737; PMCID: PMC10183198.