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Health-enhancing physical activity improves the quality of life in non-dialysis-chronic kidney disease patient from KNOW-CKD study

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Objectives: It has been well established that decreased quality of life in patients with chronic kidney disease is associated with poor prognosis including mortality, cardiovascular and renal outcomes. Many studies have been showed that physical activities improve the quality of life in the general population. However, the effect of health enhancing physical activity on quality of life improvement in chronic kidney disease has not been sufficiently studied. The purpose of this study was to investigate the effect of the health enhancing physical activity on quality of life in non-dialytic chronic kidney disease patients.

Methods: We analyzed 2238 patients who were collected from 2011 to 2016 using The KoreaN Cohort Study for Outcome in Patients with Chronic Kidney Disease (KNOW-CKD) dataset. Quality of life was measured using the 36-Item Short Form Health Survey questionnaire and health enhancing physical activity was defined by 150 minutes of moderate-intensity aerobic physical activity throughout the week, or 75 minutes of vigorous-intensity aerobic physical activity throughout the week. We used the propensity score matching analysis and linear regression to estimate the 'average treatment effect on the control', 'average treatment effect on the treated' and 'average treatment effect'. The balance of the covariates was validated and visualized with standardized mean difference.

Results: The 'average treatment effects' were 1.9 of kidney component summary score, 4.44 of physical component summary score and 4.45 of mental component summary score, respectively. Both 'average treatment effect on the control' and 'average treatment effect on the treated' showed the similar results with 'average treatment effect'. Health enhancing physical activity showed the statistically significant impact on patient reported quality of life.

Conclusions: Health enhancing physical activity increased the quality of life in patients with non-dialysis chronic kidney disease. Recommending health enhancing physical activity in patients with non-dialysis chronic kidney disease might improve their lives and prognosis.