Physical Activity and Quality of Life in Hemodialysis Patients and Healthy Controls: A Cross-Sectional Study

Tjaša Filipčič [1], Špela Bogataj [2,3], Jernej Pajek [2,4] and Maja Pajek [3]

[1]Faculty of Education, University of Ljubljana, Ljubljana, Slovenia; tjasa.filipcic@pef.uni-lj.si
[2]Department of Nephrology, University Medical Centre Ljubljana, Ljubljana, Slovenia; spela.bogataj@kclj.si
[3]Faculty of Sport, University of Ljubljana, Ljubljana, Slovenia; maja.pajek@fsp.uni-lj.si
[4] Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia; jernej.pajek@mf.uni-lj.si

univerzitetni klinični center ljubljana
University Medical Centre Ljubljana

Introduction

Hemodialysis (HD) patients have lower functional abilities compared to healthy people, and this is associated with lower physical activity in everyday life. This may affect their quality of life, but research on this topic is limited. Therefore, the present study aimed to determine the relationship between habitual physical activity and quality of life in HD patients and healthy controls.

Methods

	HD patients (n = 93)	Healthy controls (n = 140)
Age (years)	55.04 ± 15.95	51.6 ± 16.1
Male/female (n)	62/31	59/81
Height (cm)	168.22 ± 9.04	170.1 ± 9.7
Weight (kg)	74.17 ± 15.71	75.5 ± 16.3
Weekly dialysis duration (h)	13.88 ± 2.55	n/a
LTI (kg/m^2)	13.51 ± 2.73	13.73 ± 2.63
FTI (kg/m^2)	11.99 ± 4.72	12.03 ± 5.12
Davies comorbidity score	0 (50.5%); 1 (49.5%)	0 (90.7%); 1 (9.3%)

Ninety-three chronic kidney disease patients undergoing hemodialysis at the dialysis units throughout Slovenia and 140 healthy controls took part in the research. The participants' quality of life and physical function were assessed using a 36-item medical outcomes study short-form health survey version 2 (SF-36) and Human Activity Profile (HAP) questionnaires. The adjusted activity score (AAS) from HAP, age, gender, fat tissue index (FTI), lean tissue index (LTI), and Davies comorbidity score were analyzed as possible predictors of the Physical Component Summary (PCS) of the SF-36.

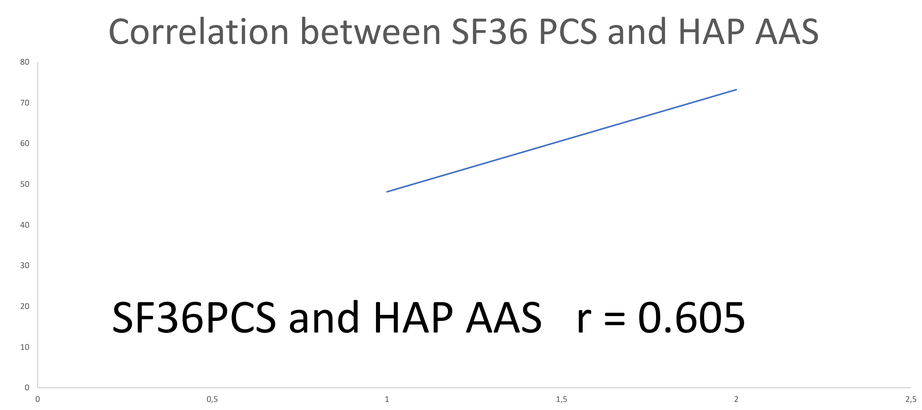
Results

Table 2 shows mean ± SD results for each SF-36 component (mental (MCS) and physical) and for Maximum Activity Score (MAS) and AAS from HAP.

Table 2. Results of the questionnaires.

	HD patients (n = 93)	Healthy controls (n = 140)	Mean difference (95% CI)
SF36 PCS	48.1 ± 7.9	54.7 ± 6.1	6.6 (4.7, 8.5) ***
SF36 MCS	52.7 ± 8.1	54.0 ± 5.9	1.4 (0.5, 3.3)
HAP AAS	73.2 ± 14.0	85.2 ± 9.0	6.5 (4.5, 8.6) ***
HAP MAS	81.0 ± 8.9	87.5 ± 6.9	11.9 (9.0, 14.9) ***

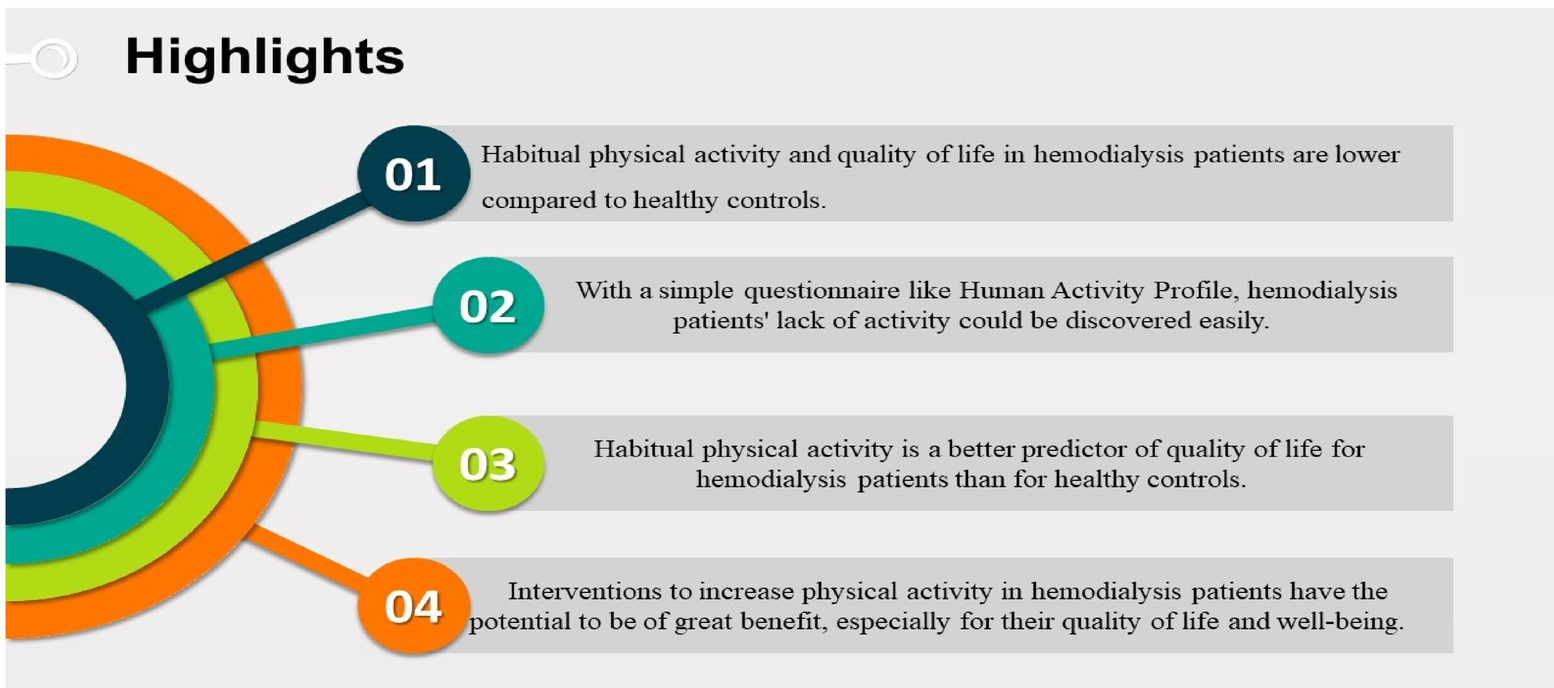
A weak significant positive relationship was seen in HD patients between PCS and LTI (r(91) = 0.219) and inverse relationship between PCS and FTI (r(91) = -0.211). We also observed that the PCS and HAP AAS tended to significantly decline with age.



Regresion analysis showed that the HAP AAS accounted for 32% of the variation in the PCS after controlling for gender, age, LTI, FTI, and Davies comorbidity score effects in HD patients.

Conclusion

The current results show that habitual physical activity is correlated with quality of life in HD patients. It was also found that habitual physical activity is a better predictor of quality of life for HD patients than for healthy controls among the predictors analyzed.



Dr. Špela Bogataj, mag. prof. šp. vzg.
Department of Nephrology, University Medical Centre, Ljubljana, Slovenia