

PW2-8

Exercise Training Improves Activity and Psychosocial Wellbeing in Adolescents with Congenital Heart Disease (CHD)

Morrison M.L. (1), Sands A.J. (1), McCusker C.G. (1, 2), McKeown P.P. (2), McMahon M. (1), Gordon J. (1), Craig B.G. (1), Casey F.A. (1)

Department of Paediatric Cardiology, The Royal Belfast Hospital for Sick Children, Belfast, Northern Ireland (1)

The Queen's University of Belfast, Belfast, Northern Ireland (2)

Recently, exercise training has emerged as a method of improving activity and psychological health in some patient groups and adolescence may be an ideal opportunity to introduce such positive lifestyle changes. We aimed to ascertain if motivational techniques and a structured exercise program could increase activity and improve wellbeing in patients with CHD.

Patients aged 12-20 years were identified using the Northern Ireland regional database (HeartSuite). Participants completed standard psychological questionnaires and underwent evaluation of exercise ability (formal exercise stress testing and measurement of free-living activity using an ActiGraph accelerometer). Following randomisation the intervention group attended an activity day where they were given a personal exercise programme. The control group received their usual level of care. Patients were followed up at 6 months for reassessment and results obtained were analysed using parametric methods.

One hundred and forty three patients (mean age 15.6 years) consented to participate, 86 were male (60%) and 105 had major CHD (73%). Psychological health appeared well preserved at baseline with few differences across study groups. On formal exercise testing, complex patients performed worse at peak exercise. However, patients with major CHD had significantly higher activity counts. 101 (71%) attended for reassessment. There was a significant increase in duration of exercise test (Pillai's Trace 5.34 ($p < 0.05$)) and average activity counts per minute (Pillai's Trace 46.55 ($p < 0.001$)) for the intervention group at reassessment. This group also had trends toward improved mood and self esteem.

An exercise program to promote activity and healthy lifestyle is both feasible and beneficial for young people with CHD. Exercise training significantly improves peak exercise capacity and free-living activity in this group. Increased activity also appears to have a positive effect on self-esteem and mood parameters. Future interventions targeted around this area may considerably improve outcomes for this population and should be incorporated into formal transition programs.