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Title : The Effects of Exercise and Behavioural Program on Exercise Adherence, Exercise Self-Efficacy and Functional Status Among Community-Dwelling Older Persons

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Exercise is an integral component in the maintenance of health status among older persons. Unfortunately, it is difficult for sedentary older persons to continue and adhere to exercise training for a long term. The possible causes might be due to low level of exercise adherence and exercise self-efficacy (ESE). Thus, an intervention is needed to change this typical sedentary behaviour as it predicts physical activity participation. This study aimed to determine the effects of exercise and behavioural program on exercise adherence, ESE, functional status (physical and psychological functions) among community-dwelling older persons. Sixty-three participants (above 60-year-old) from three different villages voluntarily participated and grouped as (i) Exercise and Behaviour Group, EBG (n=18), (ii) Exercise Group, EG (n=23) and (iii) Control Group, CG (n=22). The participants in EBG received a 6-week group-based multi-component exercise training followed by a 5-week behavioural program. While, the participants in EG received the same exercise prescribed to EBG. The participants in CG did not receive any interventions, but they were asked to continue their daily physical activities and other normal routines. The exercise consisted of endurance, strength, balance, flexibility and loco-motor training for one hour per sessions, three times a week for a duration of six weeks. The behaviour program was delivered following the termination of the 6-week exercise training, for 30-minute per session, twice a week for duration of five weeks. Outcomes (score for exercise adherence, ESE, fear of falls, depression and

quality of life and score for balance performance, upper and lower limb muscle strength, exercise tolerance, upper and lower limb flexibility) of the intervention were measured by single-blinded assessors. Results from the repeated measures ANOVA showed significant differences between groups due to time factor (All, $p < 0.05$), group and time interaction (All, $p < 0.05$) and between-group factor (All, $p < 0.05$) for exercise adherence, ESE, balance, FoF, Right UL Left UL and LL strength, and exercise tolerance, respectively. However, significant results for flexibility were only shown for the right LL at time factor [$F(3.44,206.12)=7.53$], group and time interaction, [$F(6.87,206.12)=3.26$] and between-group factor [$F(2,60)=0.86$] (All, $p < 0.05$). Analysis of covariance (ANCOVA) (controlling for baseline performance and age) for depression [$F(2,58) = 33.49$], physical summary score, PCS [$F(2,58) = 5.33$] and mental summary score [$F(2,56) = 4.08$] (All $p < 0.05$) showed significant main effects among groups with the EBG presented less level of depression and higher scores for PCS and MCS. As a conclusion, the combination of exercise and behavioural program may be a promising intervention rather than exercise training alone in enhancing exercise adherence, ESE, and functional status of older persons residing in the community.