

Paramedic Strength and Flexibility: Findings of a 6-Month Workplace Exercise Randomised Controlled Trial

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Abstract : Workplace exercise programs have been recommended to improve the musculoskeletal fitness of paramedics with the aim of reducing injury rates, and while they have shown efficacy in other occupations, they have not been delivered and evaluated in Australian paramedics to our best knowledge. This study investigated the effectiveness of a 6-month workplace exercise program (MedicFit; MF) to improve paramedic fitness with or without health coach (HC) support. A group of regional Australian paramedics (n=76; 43 male; mean \pm SD 36.5 \pm 9.1 years; BMI 28.0 \pm 5.4 kg/m²) were randomised at the station level to either exercise with remote health coach support (MFHC; n=30), exercise without health coach support (MF; n=23), or no-exercise control (CON; n=23) groups. MFHC and MF participants received a 6-month, low-moderate intensity resistance and flexibility exercise program to be performed on station without direct supervision. Available exercise equipment included dumbbells, resistance bands, Swiss balls, medicine balls, kettlebells, BOSU balls, yoga mats, and foam rollers. MFHC and MF participants were also provided with a comprehensive exercise manual including sample exercise sessions aimed at improving musculoskeletal strength and flexibility which included exercise prescription (i.e. sets, reps, duration, load). Changes to upper-body (push-ups), lower-body (wall squat) and core (plank hold) strength and flexibility (back scratch and sit-reach tests) after the 6-month intervention were analysed using repeated measures ANOVA to compare changes between groups and over time. Upper-body (+20.6%; p < 0.01; partial eta squared = 0.34 [large effect]) and lower-body (+40.8%; p < 0.05; partial eta squared = 0.08 (moderate effect)) strength increased significantly with no interaction or group effects. Changes to core strength (+1.4%; p=0.17) and both upper-body (+19.5%; p=0.56) and lower-body (+3.3%; p=0.15) flexibility were non-significant with no interaction or group effects observed. While upper- and lower-body strength improved over the course of the intervention, providing a 6-month workplace exercise program with or without health coach support did not confer any greater strength or flexibility benefits than exercise testing alone (CON). Although exercise adherence was not measured, it is possible that participants require additional methods of support such as face-to-face exercise instruction and guidance and individually-tailored exercise programs to achieve adequate participation and improvements in musculoskeletal fitness. This presents challenges for more remote paramedic stations without regular face-to-face access to suitably qualified exercise professionals, and future research should investigate the effectiveness of other forms of exercise delivery and guidance for these paramedic officers such as remotely-facilitated digital exercise prescription and monitoring.

Keywords : workplace exercise, paramedic health, strength training, flexibility training

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