

UNIVERSITI TEKNOLOGI MARA

**EFFECTS OF ADAPTED
MALAYSIAN VERSION
PHYSIOTHERAPY
OSTEOARTHRITIS-BASED CARE
PROTOCOL (PTOA-BCP) ON
PHYSICAL PERFORMANCES AND
LEVEL OF DISABILITY AMONG
OVERWEIGHT AND OBESE WOMEN
WITH KNEE OSTEOARTHRITIS**

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ABSTRACT

This study aimed to determine the effects of the adapted Malaysian version physiotherapy osteoarthritis-based care protocol (PTOA-BCP) on physical performances and level of disability among overweight and obese women with knee osteoarthritis (OA). Sixty-three adult women aged 45-65 years with knee osteoarthritis were recruited and divided into three intervention groups based on BMI which were $\leq 23.5 \text{ kg/m}^2$ (n=11), $< 27.5 \text{ kg/m}^2$ (n=15) and $\geq 27.5 \text{ kg/m}^2$ (n=37). They completed 8 weeks of outpatient physiotherapy interventions consisting of lower extremity strengthening, stretching, range of motion, balance, proprioception and aerobic exercises. The changes from baseline to 4th week and 8th week follow-ups were calculated for three physical performances (balance, lower limbs functional strength and endurance performance). Knee range of motion, pain response, hand grip strength, and hamstring length were evaluated on the 8th week. Sessions were ended with post-test disability assessment using the Malay translated version of knee osteoarthritis (OA) questionnaires (M-WOMAC and M-AFI). Results from repeated measure ANOVA showed significant improvements ($p = 0.001$) on balance, lower limb functional strength and endurance within BMI groups but not between the groups. Improvement was notable from baseline to 8th week and 4th week to 8th week duration in all three measures but not from baseline to 4th week duration. Significant improvements ($p = 0.001$) were also shown for pain response and hamstring length but not on knee ROM and hand grip strength ($p>0.05$). In terms of level of disability, M-WOMAC subscales showed significant improvement ($p<0.05$) in the level of disability within all BMI categories as compared to M-AFI which were overweight and obese groups but not on normal weight. All results were comparable to intention to-treat analysis (ITT) and completers-only analysis (COA). In conclusion, 8 weeks of PTOA-BCP may be sufficient to detect changes in physical performances within BMI groups especially overweight and obese groups with COA, but not between the groups. Due to the differences of muscle strength per mass ratio between BMI categories, it is timely that future study develops specific protocol specifically to handle weight loss program by incorporating specific ratio of aerobic and resistance training with low energy diet (LED) for overweight and obese women with knee osteoarthritis.

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