

Exercise level, intrinsic motivation, physical fitness, and their association with adiposity and oxytocin receptor rs53567 and rs2254298 gene variants among Malaysian urban young adults

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ABSTRACT

Introduction: Intrinsic motivation predicts higher exercise participation and long-term sustenance. Common variants in the oxytocin receptor gene (OXTR) have been associated with socially-related personality traits and behaviors, and obesity pathogenesis. The study aims to investigate the association of exercise level, intrinsic motivation, and physical fitness, with adiposity and OXTR rs53567 and rs2254298 among a sample of Malaysian urban young adults in Sunway City. **Materials and Methods:** A total of 273 participants (M/F = 118/155; aged 21.5 ± 2.9) self-reported their socio-demographics, exercise levels via International Physical Activity Questionnaire (IPAQ) Short Form, and intrinsic motivation via Motives for Physical Activities Measure – Revised (MPAM-R). Physical fitness was assessed by three-minute step test, while anthropometric and body composition measurements were also taken. Genotyping was performed by allele-specific real-time PCR. **Results:** Men reported higher exercise levels and higher MPAM Interest, Competence, and Social than women. MPAM Interest and Competence were significantly positively correlated with vigorous, moderate and total METs, and were also significantly associated with Waist-Height Ratio. MPAM Fitness was significantly associated with Waist-Hip Ratio. Physical fitness was significantly positively correlated with vigorous and total METs. OXTR rs53567 was significantly associated with MPAM Appearance only, but not exercise levels, physical fitness, and adiposity. Men were more physically active and intrinsically more motivated to exercise than women. The desire to have fun and engage with challenges when exercising correlates with more frequent exercise, and is a predictor of lower adiposity. **Conclusion:** OXTR rs53567, but not rs2254298, influences motivation for being physically active in order to become more physically attractive.