

META-ANALYSIS: EFFECT OF PHYSICAL ACTIVITY ON HbA_{1c} LEVEL IN TYPE II DIABETES MELLITUS PATIENTS

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ABSTRACT

Background: A reduction in daily physical activity may result in obesity and insulin resistance, which are important components of metabolic syndrome. The purpose of this study was to examine the effect of physical activity on HbA_{1c} level in type II diabetes mellitus patients.

Subjects and Method: A systematic review and meta-analysis was conducted using PICO, Population= patients diagnosed with type II Diabetes Mellitus, Intervention= high physical activity, Comparison= low physical activity, and Outcome= HbA_{1c} level. Articles were collected from PubMed, Science Direct, Scopus, Clinical Key, and Google Scholar databases. Keyword used "tertiary prevention and DM", "diet", "physical activity", "diet and DM" "physical activity and DM". The inclusion criteria was full-text experimental study using randomized controlled trial (RCT). Articles selected using PRISMA flow diagram and the quantitative study was assessed using Review Manager 5.3.

Results: A meta-analysis study obtained from 9 articles located in United States, Australia, Italy, and India, resulted that physical activity in type II Diabetes Mellitus patients reduced HbA_{1c} level 0.81 units than those with low physical activity and it was statistically significant (SMD= -0.81; 95% CI= -1.20 to -0.43; p < 0.001).

Conclusion: High physical activity is effective to reduce HbA_{1c} level in type II Diabetes Mellitus patients.

Keywords: physical activity, HbA_{1c}, type II Diabetes Mellitus

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