BEHAVIOURAL INTERVENTIONS TO REDUCE THE LEVEL OF HBA1C FOR EFFICIENT AND EFFECTIVE MANAGEMENT OF TYPE 2 DIABETES MELLITUS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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ABSTRACT

This review was carried out to find out the effects of behavioural interventions to reduce the level of HbA1c for efficient and effective management of Type 2 Diabetes Mellitus (T2DM). PubMed, EMBASE and Science Direct and other electronic databases were searched for the published literature. Overall effect size with 95% confidence intervals (CIs) was used to assess the strength of the relationship between interventions and T2DM by using a random effects model. Heterogeneity was also evaluated. 3 randomized controlled experimental studies were selected and included in the review. Studies considering drug co-interventions were excluded. Overall estimate of the mean differences of the behavioural interventions showed that the overall effect size for reduction in HbA1c was about -0.47 with a 95%confidence interval (CI) of -0.79 -0.15 and the I^2 value is 56%. Behavioural interventions were moderately effective in reducing the level of HbA1c to manage type 2 diabetes effectively.

KEYWORDS: *Type 2 Diabetes Mellitus; HbA1c; Behavioural Interventions; Meta-Analysis*

1. INTRODUCTION

The global prevalence of diabetes has been estimated as 415 million in 2015 and by the year 2040 this number may rise to 642 million as projected by the International Diabetic Federation (IDF).[1] Type 2 diabetes mellitus (T2DM) is the most common type of diabetes, accounting for around 90% of all cases of diabetes.[2] T2DM is most commonly seen in older adults, but it is increasingly seen in children, adolescents and younger adults due to rising levels of obesity, physical inactivity and poor diet.[1] Regarding maintaining T2DM efficiently, the level of blood glucose or glycemic status needs to be monitored constantly along with regular involvement in physical activity and exercises.[3-6] In connection to that self-regulatory interventional attempts and role of behavioural interventions have become vital as these interventions are generally aimed at providing patients with the coping skills and strategies required to promote and change their behaviour to manage the disease.[7] In the diabetes literature, these