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Effectiveness Of non-Pharmacological Strategies in The Management of Type 2 Diabetes In Primary Care: A Systematic Review And Network Meta-analysis

EIXO 1: SUSTENTABILIDADE NOS SISTEMAS DE SAÚDE

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Introduction: Despite the increasing number of drugs and various guidelines on the management of type 2 diabetes mellitus (T2DM), several patients continue with the disease uncontrolled. There are several non-pharmacological treatments available for managing T2DM, but various of them have never been compared directly to determine the best strategies. Objective: This study evaluated the comparative effects of non-pharmacological strategies in the management of T2DM in primary care or community settings.

Methods: We have performed a systematic review and network meta-analysis (NMA) following the Cochrane collaboration and reported according to the preferred reporting items for systematic reviews and meta-analyses (PRISMA) Statement. We included randomized controlled trials if non-pharmacological strategies in the management of type 2 diabetes were applied in adult patients with T2DM in primary care. The primary outcome was glycemic control (glycated hemoglobin [HbA1c] [%]). We developed search strategies for Embase, Medline, Latin American and Caribbean Health Sciences Literature, Cochrane Central Register of Controlled Trials, Trip database, Scopus, Web of Science, Cumulative Index to Nursing and Allied Health Literature (CINAHL). Four reviewers assessed the studies for their eligibility and their risk of bias in pairs and independently. A NMA have been performed using Stata Statistical Software 18 (Stata Statistical Software: Release 18. College Station, TX, StataCorp LLC, USA).

Results: After removing duplicates, the search strategies yielded 4314 studies. After a thorough evaluation of the references, 129 studies encompassing a total of 35,975 individuals have been included in this review. Twenty and three strategies were founded. The most frequent strategy was diabetes self-management and support (DSMES), followed by diabetes self-management education, technology enabled DSMES, self-monitoring of blood glucose, multidisciplinary approach, health coach, benchmarking, low carb diet, low fat diet, plate diet, food substitution diet, yoga, leaflet, group outpatient visit model, patient-centered communication and shared decision making, and some combinations among two or more strategies. The most frequent comparator has been usual care (92%). The consistency assumption could be accepted at the overall level of each treatment (test for inconsistency: chi2(8) =11.01, p= 0.2011). Regarding relative rankings, DSMES associated with social support showed a 35% probability of being the best treatment in terms of HbA1c reduction, followed by plate diet (16.9%), low fat diet (11.8%) and food substitution diet (10%).

Discussion and conclusions: Although several systematic reviews have evaluated the effectiveness of these strategies in the management of T2DM,to the best of our knowledge to date, there are no systematic reviews and NMA considering the direct and indirect effects of non-pharmacological interventions targeting a greater control of T2DM. Conclusion: This review has founded 23 non-pharmacological strategies in the management of type 2 diabetes in primary care, being the most frequent DSMES, and DSMES associated with social support presented the highest probability to be the best in terms of HbA1c reduction. This research has been supported by the São Paulo Research Foundation (Grant number: 2021/07229-0).

Kewyord: Type 2 Diabetes Mellitus; Primary Care; Systematic Review; Network Meta-Analysis