The adoption of unhealthy, sedentary lifestyles has triggered the prevalence of metabolic diseases like diabetes and obesity. A condition referred to as insulin resistance has been found to be the precursor to these diseases. It commonly manifests itself in most if not all Type 2 diabetic cases. A cure is yet to be found and side effects from current drugs create complications among patients. Thus, alternative therapies from natural, plant-based products like stevioside are becoming a more preferred option. Stevioside that is extracted from Stevia rebaudiana Bertoni has impeccable sweetening potential, which provides an interesting aspect to its proposed antidiabetic potentials. Hence, in-depth investigations were conducted to analyse how stevioside can manifest its effects towards insulin sensitivity in *in vitro* and *in-silico* models. Like many herbal products, scientific data on stevioside's efficacies has been scarce. Its safety of consumption was hence tested through 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide assay on 3T3-L1 adipocytes as an *in-vitro* model. No IC₅₀ was observed as cell viability was only slightly reduced, signifying its non-cytotoxicity towards adipocytes. Preceding the assay, the cells were tested using Oil Red O to confirm differentiation which was also successfully achieved. Stevioside was observed to increase glucose uptake in adipocytes better than a drug both in normal and insulin resistant states based on the glucose uptake assay that was conducted. Through Western blotting, expression of the phosphorylated tyrosine (pY20) protein on the insulin receptor (IR) was also observed to be enhanced by stevioside. This suggests that stevioside has a high probability of interacting with the insulin receptor in improving insulin sensitivity and increasing glucose uptake. Stevioside's actions are therefore, upstream rather than downstream of the insulin signalling pathway and were confirmed through computer simulations. Prior to that, a protein model was constructed using the MODELLER software. Multiple sequence alignment of the human and mouse insulin receptor sequences was first conducted through ClustalW. A human insulin receptor 3D structure with PDBID: 3LOH was selected as the protein template to model the *Mus musculus* insulin receptor. Subsequent docking of the stevioside ligand was conducted via AutoDock Vina and had managed to reveal possible binding sites. Interestingly, stevioside was observed to share the same binding region to that of insulin on the insulin receptor. Henceforth, insulin binding was analysed through radioimmunoassay (RIA) with radioactively tagged 125I-insulin; quantified using a γ-counter. Stevioside was seen to reduce insulin binding but not as severe as S961 treatments; that are positive controls to insulin binding inhibition. In conclusion, stevioside enhances insulin sensitivity in adipocytes by increasing glucose uptake and enhancing expressions of pY20 on IRβ of the insulin signalling pathway. Computer simulations of insulin receptor-stevioside interactions have also revealed docking of stevioside onto a site shared by insulin binding on the receptor. This was confirmed through stevioside’s reduction in total insulin binding analysed through RIA. Therefore, stevioside may have a role in manifesting its effects through the insulin receptor towards improving insulin sensitivity; upstream of the insulin signalling pathway by possibly binding to the insulin receptor.

**Organizational Factors, Health Outcomes, and Their Predictors in Type 2 Diabetes Care in the Occupied Palestine**

Political instability of Palestine influenced economic, social, and health aspects. Diabetes prevalence at Palestine was 10%, with rising fund crisis and diabetes care problems. There was a limited research concerning diabetes care dimensions (organizational factors, and health outcomes) and their predictors. Health outcomes included costs, diabetes self-care management, and glycaemic control. This study described patient characteristics, assessed organizational factors, diabetes self-care management, glycaemic control, and their predictors, evaluated drug utilization pattern, assessed costs and their predictors. This study had two phases, and was carried out at the National Centre for Chronic Diseases and Dermatology, Ramallah, Palestine. Phase one is retrospective cross-sectional in 330 participants recruited by convenience sampling method from a type 2 diabetes patients list who were seen regularly during the past one year. Phase two is an observational follow-up that involved 79 participants selected from phase one participants by simple random sampling; they were followed-up for six months. Data on patient characteristics, organizational factors, diabetes self-care management, and glycaemic control were collected through interview and medical records review for both phases. Data on costs was obtained in phase two from personal interview in each visit. Good glycaemic control was defined as HbA1c ≤7%. Data was analyzed by SPSS v 16.0. Phase one showed that 51.2% were males, mean ± standard deviation age was 60±9.7 years, 88.5% had additional chronic diseases, and 46.1% were obese. The mean total organizational factors score was higher than average score (cumulative percentage=55.4%). Preventive care and patient-health care professionals relationship were the most prominent organizational factors in statistically significant relationships among organizational factors. The overall diabetes self-care management level was higher than average (cumulative percentage=52%). Marital status, body mass index, and diabetes duration were significantly related to follow a diabetic meal plan. Additional chronic diseases number was significantly related to physical exercise participation. Marital status and insulin treatment were significantly related to self-blood glucose monitoring. Gender and diabetes duration were significantly related to medication adherence. HbA1c last readings for 271 participants showed that only 20.3% had good glycaemic control. Unemployment was significantly related to decreased odds of good glycaemic control. Phase two showed that most common prescribed medications were Metformin, followed by Insulin. Many of the participants received Statins and almost half of them received Angiotensin–Converting Enzyme Inhibitors. Estimated health care cost was Israeli Shekel 24,000 (US Dollar 6,480). Medications number and Angiotensin–Converting Enzyme Inhibitors were significantly related to health care cost. This study reflects appropriate overall status of organizational factors and diabetes self-care management. However, the participants’ proportion with good glycaemic control was low. Further investigation and improvement of inappropriate organizational factors and diabetes self-care management dimensions, reviewing prescription mode, and educational programs that emphasize the diabetes self-care management and the health care providers’ role would be of great benefit in health outcomes.