

## ABSTRACT

The World Health Organization (WHO) includes a healthy diet, regular physical activity and avoiding tobacco among the key elements of cardiovascular disease (CVD) prevention. The theoretical part of this thesis focuses on the possible prevention of CVD through a healthy diet. The interrelationships and interconnections between the cardiovascular and immune systems were described and the main immunomodulatory substances in the diet with the potential to positively influence cardiovascular health were mentioned in the context of a literature search.

The practical research focused on assessing whether the dietary habits of people with CVD provide the minimum recommended daily intake (RDI) and adequate intake (AI) of specific immunomodulatory substances in the diet – vitamin C, zinc and omega-3 FA (LCPUFA). The main aim of the thesis was to compare the average daily intake of vitamin C, zinc and omega-3 FA (LCPUFA) from the diet between a control group from the general public and patients diagnosed with CVD.

In order to test the validity of the hypotheses, a quantitative research using a validated short food frequency questionnaire was used in 3 cardiology outpatient clinics in the Zlín region with the consent of physicians. The results of the questionnaire survey provided baseline data on the quantity and frequency of food consumed by patients with CVD (n1 = 102). To determine the daily intake of vitamin C, zinc, and omega-3FA from the diet, it was necessary to determine the nutritional composition of foods using the FSANZ database system.

The study found that the mean daily dietary intake of vitamin C in the group (KVO; n1 = 102) was 118.8 mg, 15.9 % higher than the average RDI of 102.5 mg for men and women. Women were more likely to take in more vitamin C from their diet than men. Mean daily zinc intake was found to be 5.7 mg, 32.9 % lower than the mean RDI of 8.5 mg for men and women. Based on the results of omega-3 FA (LCPUFA) intake, there was a 19.4 % lower intake from diet than the AI of 250 mg for men and women. The main objective of this study was to compare the dietary intake of immunomodulatory components between control and KVO groups. There was a statistically significant difference in the daily dietary intake of omega-3 FAs (LCPUFAs) between the (KVO; n1=102) and control (K; n2=111) groups; (201.9 vs. 311.4 mg/day;  $p < 0.001$ ) in favour of the non-KVO risk group. There was no significant difference in dietary vitamin C and zinc intake between the control and KVO groups ( $p > 0.05$ ). Differences in dietary vitamin C intake were found in the analysis between sexes, (KVO; n1=56) and (K; n2=74) in women (127 vs. 102.5 mg/day;  $p = 0.009$ ).

Ensuring long-term health is possible through good eating habits a balanced diet and a healthy lifestyle. In general, prevention is key, especially when it comes to health care.