

Abstract

Obesity and obesity-related cardio-metabolic risks are major public health problems. The present research was conducted to study the cardio-metabolic risks among the overweight and obese individuals and the benefits of regular physical activity against the risks. Both of community based cross-sectional study and quasi-experimental study were used. Multistage cluster sampling method was applied for community based survey. Total 1,400 respondents (550 males and 850 females) residing in Mandalay city were involved in the community survey and 32 overweight and obese persons voluntarily participated in the intervention study. The intervention included two components: taking regular moderate intensive physical activity or exercise for more than 30 minutes per day for three months and health education about healthy diets. Proportion of the overweight and obesity among respondents were 26.5% (95% CI = 24.25 - 28.87) (23.1% of males and 28.7% of females) and 15.9% (95% CI = 14.11- 17.94) (11.8% of males and 18.6% of females) respectively. In the present study, being overweight and obesity was associated with gender and age ($p < 0.05$), but not associated with socio-economic factors, dietary pattern and physical activity. Among overweight and obese persons, mean values of systolic and diastolic pressure were 128.42 ± 18.16 mmHg and 83.45 ± 28.03 mmHg respectively and mean values of fasting blood glucose and total cholesterol level were 121.36 ± 47.92 mg/dl and 198.07 ± 64.92 mg/dl respectively. Proportions of high blood pressure, high fasting blood glucose, high fasting blood total cholesterol and dyslipidaemia among overweight and obesity were 44.7% (95% CI = 42.1- 47.3), 36.5% (95% CI = 27.5 - 46.4), 43.8% (95% CI = 34.7 - 53.4) and 58.1% (95% CI = 48.5 - 67.1) respectively. BMI was positively correlated with systolic and diastolic pressure, high fasting blood glucose and total cholesterol level ($p < 0.001$). After 3 month intervention with regular moderate intensive physical activity or exercise and having healthy diets, body weight, BMI and cardio-metabolic measures were significantly reduced ($p < 0.05$). But at the point of 6 month follow up, since they could not take physical activity or exercise regularly in that period, CM risks were somewhat increased again. Regarding health related quality of life, total quality of life score (combination of both physical and

mental functioning scale) used by 36 SF form, was significantly increased after the intervention ($p < 0.001$).

In conclusion, the present study showed that taking moderate intensive physical activity or exercise complemented with having healthy diets could reduce the CM risks, and improve the health related quality of life among overweight and obese persons. Therefore, it is one of the empirical evidences to support for the benefits of regular physical activity or exercise and healthy diets on some degree reduction of CM risks. It should be encouraged to take physical activity or exercise regularly and to have healthy diets among overweight and obese individuals in order to get physical and mental well being.