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Metabolic syndrome is a major health problem worldwide, increasing the risk of cardiovascular diseases and diabetes. The metabolic syndrome is defined as a combination of three or more risk factors for cardiovascular diseases including central obesity, hypertriglyceridemia, high blood pressure, high fasting glucose, and decreased high density lipoprotein (HDL). Physical inactivity is an important risk factor for the development of several chronic diseases. Modern lifestyles have decreased physical activity which is a leading cause of obesity, a major determinant of metabolic syndrome. The problem is of particular concern in countries like India that have a transitional economics and changing lifestyle. The present study aimed to assess the association of physical activity and metabolic syndrome among a middle aged population. Subjects were recruited from amongst those coming for PHCs and OPDs in various hospitals of Delhi. Information related to socio demographic profile, physical activity patterns and dietary habits was collected from 750 subjects identified with metabolic syndrome (MS) as per NCEP ATP III based on anthropometric measurements, blood pressure, blood glucose and lipid levels. The data was compared with that of 750, age and gender matched non metabolic syndrome subjects (NMS). The total sample size was 1500.

It was found that as compared to IDF and WHO definitions, NCEP ATP III is a better criteria for identifying individuals with metabolic syndrome so as to make them aware about their health problems. The data revealed that MS subjects comprised of 44.9% males and 55.1% females. The prevalence of MS increased with age, majority being in the age group of 50-55 years. Almost all MS females (89.3%) and males (85.7%) had low HDL levels, a major characteristic contributing to metabolic syndrome in both the genders. Elevated Blood Glucose was prevalent in fairly large number of both MS males and females (66.46% and 58.59% respectively). On the other hand, high BP was more prevalent in males (61.43%) as compared to females (54.4%). Abdominal Obesity (larger waist circumference) was another major characteristic in a large majority of MS females (82.5%) as compared to
males (51.3%). High triglyceride levels were seen more in males (53.7%) as compared to females (44.55%). Even among the NMS subjects, a large number of both males and females had low HDL levels (53.41% and 64.64% respectively). Abdominal obesity was another component seen in a large number of NMS, especially females (31.1%). A fairly large number of MS males were having sedentary lifestyle as compared to NMS males (65.57% vs 32.35%). Similarly, more of MS female subjects were sedentary as compared to NMS females (70.9% vs 45.27%). Further, in both MS and NMS groups, more of females were sedentary as compared to males. There was a significance difference (p<0.01) in PAL levels of MS and NMS subjects as per chi-square. Odds ratio further showed a 3 times greater risk of MS with decrease in physical activity in terms of PAL values. As per MET minute/week, a fairly large number of MS subjects (69.4% males and 77.5% females) were ‘inactive’ as they were not performing any kind of aerobic physical activity. The relative number of NMS subjects in this category was lesser and the differences were statistically significant as per chi-square (p<0.01). The mean values of waist circumference, blood glucose, blood triglycerides and blood pressure (both systolic and diastolic) increased with increase in the number of metabolic syndrome diagnostic components. In a similar trend, HDL levels decreased with increase in the number of metabolic syndrome diagnostic components. A substantial number of NMS subjects, were having 2 components and were thus at a risk of having metabolic syndrome with the addition of one more component. Regression analysis showed a positive significant association of metabolic syndrome with smoking and alcohol consumption as well as intakes of energy, fats, carbohydrates and thiamine. A negative significant association of PAL levels with metabolic syndrome was found. The study findings are indicative that regular physical activity, along with other lifestyle measures, would help to curb the growing menace of obesity and co morbidities of metabolic syndrome.