1. **David E. Laaksonen et. al. (2002)** conducted a Prospective Cohort study on Metabolic Syndrome, Development of Diabetes Mellitus and Application and Validation of Recently Suggested Definitions of the Metabolic Syndrome. Four definitions based on the WHO and NCEP recommendations were compared. The WHO definition including waist-hip ratio > 0.90 or body mass index $\geq 30 \text{ kg/m}^2$ was the most sensitive and least specific in detecting the 47 prevalent and 51 incident cases of diabetes. The NCEP definition in which adiposity was defined as waist girth $> 102 \text{ cm}$ detected only 61% of prevalent and 41% of incident diabetes, although it was the most specific (0.89 and 0.90). The WHO definition seems valid as judged by its relatively high sensitivity and specificity in predicting diabetes. The NCEP definition including waist $> 102 \text{ cm}$ also identifies persons at high risk for diabetes, but it is relatively insensitive in predicting diabetes.

2. **Garcia M et. al. (2002)** had done a study on quality of life of diabetes patients for improving blood glucose control and for improving blood pressure (BP), control, diabetic complications, and hypoglycemic episodes. Two cross-sectional samples of type II diabetic patients were randomized to therapies for blood glucose control. The specific questionnaire assessed specific domains of QOL, including mood disturbance (Profile of Mood State), cognitive mistakes (Cognitive Failures Questionnaire), symptoms, and work satisfaction; the generic questionnaire (EQ5D) assessed general health. In patients with type2 diabetes, complications of the disease affected QOL, whereas therapeutic policies shown to reduce the risk of complications had no effect on QOL.

3. **Uwe Bott et. al. (2002)** validated Diabetes-Specific Quality-of-Life Scale for Patients with Type II Diabetes and assessed its psychometric properties in a large sample of patients with type II diabetes in a population based study. A total of 657 patients completed the diabetes-specific quality-of-life scale (DSQOLS), which comprised 64 items on individual treatment goals (10 items), satisfaction with treatment success (10 items), and diabetes-related distress (44 items). All six subscales were significantly correlated with a validated well-being scale and treatment satisfaction. The scale is able to distinguish between patients with different treatment and dietary regimens and to detect social inequities.

4. **D Molnar (2004)** had done review on the prevalence of the metabolic syndrome and type 2 diabetes in children and adolescents. Population-based data suggest that the epidemic of
pediatric obesity is being followed by an increase of type II diabetes mellitus, especially in the United States and in minorities. For the European countries, there are no population-based incidence and prevalence data concerning type II diabetes mellitus in children and adolescents. From the available data, the magnitude of the problem in the European Caucasian population seems to be much less than in North America.

5. **Ali Hussein Alwan and Ameer Alhusuny (2004)** conducted a hospital based cross-sectional study on (300) diabetic type 2 DM patients to determine the proportion of MS among patients with type 2 DM and its association with MS risk factors at Merjan Teaching Hospital in Al Hilla City. The results showed that, out of 300 diabetic patients, the proportion of MS was 226 (75.3%). Hypertension was presented in (73.7%) of patients. Patients with high triglyceride were 71 times more likely to develop MS than patients with normal triglyceride. Study concluded that high proportion of MS was found among diabetic type II patients in this study.

6. **Viter Mogre et. al. (2004)** studied Prevalence, components and associated demographic and lifestyle factors of the metabolic syndrome in type 2 diabetes mellitus. This cross-sectional study was conducted among 200 previously diagnosed type 2 DM patients receiving care from an outpatient clinic of the Tamale Teaching Hospital, Ghana. The prevalence of MetS was 24.0% (n=48). The prevalence was higher in women (27.3%, n= 42) compared to men (13.0%, n=6). The commonest occurring components of the MetS included abdominal obesity (77.0%) and elevated FPG (77.0%) denoting uncontrolled diabetes. The prevalence of elevated BP was found to be 44.0% (n=88) and was higher in men (56.5%) than in women (40.3%).

7. **Sandy Maumus et. al. (2005)** conducted a Prospective Study on the Prevalence of Metabolic Syndrome among 371 Healthy French Families. The prevalence of metabolic syndrome was 5.9% in men and 2.1% in women. In offspring of affected people, it seems to be predictive of higher values of TNF-α and low HDL cholesterol levels, which are two major cardiovascular factors. Therefore, in terms of prevention, it is important to identify and follow subjects with metabolic syndrome as well as their offspring, even in apparently healthy populations, to enable early disease management.

8. **Dario Giugliano (2006)** in a cross-sectional study of 732 women from the Nurses’ Health Study I cohort (83) assessed effect of diet on metabolic syndrome, found that a prudent
pattern was inversely associated with plasma concentrations of CRP and E-selectin, whereas the Western pattern showed a positive relation with CRP, E-selectin, sICAM-1, and sVCAM-1 after adjustment for all confounders. A positive correlation between the Western pattern and higher plasma CRP levels has also been found in men(42). Moreover, a Western-type dietary pattern that increases chronic inflammation raises the risk of developing type II diabetes (84).

9. J L Patel et. al. (2008) studied clinical profile of metabolic syndrome and its individual components in type II diabetes mellitus subjects and their asymptomatic first-degree relatives. Type II diabetes mellitus (T2DM) subjects age >40 years and their asymptomatic first-degree relatives age>30 years were randomly selected. Among T2DM subjects: Ninety percent were hypertensive, 85% had low HDL, 30% males and 80% females had central obesity, 85% had metabolic syndrome. Among asymptomatic first-degree relatives of T2DM subjects, 48.7% had metabolic syndrome; hypertension, low HDL, central obesity, impaired glucose tolerance.

10. Pranita Kamble et. al. (2009) had done a study on Metabolic syndrome in 300 randomly selected adult population of rural Wardha, central India. Blood sample was collected after overnight fasting and was subjected to biochemical quantification such as fasting blood sugar, total cholesterol, triglycerides. The magnitude of metabolic syndrome was low among rural adults of Wardha as compared to reported values in urban areas. BMI of 23.32 kg/m and higher was found to predict significant risk of metabolic syndrome in these study subjects.

11. Antti-Jussi Pyykkönen et. al. (2009) conducted a study to test associations between stressful life events, their accumulation, and the metabolic syndrome in a large population-based cohort. This was a population-based, random sample of 3,407 women and men aged 18–78 years residing in Western Finland. The severity of 15 stressful life events pertaining to finance, work, social relationships, health, and housing was self-rated.. Accumulation of stressful life events was associated with insulin resistance, obesity, and triglycerides.

12. Somlak Chuengsamarn et. al. (2010) done a research work titled association between metabolic syndrome and risk of cardiovascular disease, using different criteria and stratified by sex. A cross-sectional study with 608 subjects enrolled at the out-patients department of the Thai Internal Medicine. Among the different component of metabolic syndrome, blood pressure gave the strongest association with cardiovascular risk. The appropriate components
to predict cardiovascular risks are: high blood pressure and cut off point of waist circumference in females, as defined by the IDF criterion, and high triglyceride in males, as defined by the IDF criterion.

13. **Juan J. Chillarón et. al. (2010)** conducted a cross-sectional study to determine the prevalence of metabolic syndrome in patients with type-1 diabetes and to identify associated factors in Spain. Overall, 31.9% of patients with type-1 diabetes had metabolic syndrome. In addition, there was a direct relationship between the number of components of metabolic syndrome present and prevalence of microangiopathy, which reached 100% in patients who satisfied all diagnostic criteria. Metabolic syndrome was common in patients with type-1 diabetes and was associated with microvascular complications.

14. **Angel Rodríguez et. al. (2010)** studied Risk factors associated with metabolic syndrome in type II diabetes mellitus patients according to World health Organization, Third Report national cholesterol education Program, and International Diabetes Federation definitions. Hypertension, dyslipidemia, and glycosylated hemoglobin (HbA1c) $ 7\%$ were associated with increased risk of WHO-defined metabolic syndrome. The risk factors for metabolic syndrome in type II diabetes mellitus patients are highly dependent on the criteria used to define the syndrome, supporting the need for a single clinically useful and epidemiologically useful definition.

15. **Hyelim Yoo (2011)** assessed contributors to the metabolic syndrome among law enforcement officers to examine the independent and joint association of physical activity and body mass index with the risk of the metabolic syndrome in 448 sample of police officers. Among the total participants, 27.5% had the metabolic syndrome, 48.7% and 31.7% were classified as being overweight or obese, respectively. Higher levels of BMI and lower levels of physical activity were both associated with an increased risk of the metabolic syndrome in police officers.

16. **Prasad Katulanda et. al. (2012)** analysed prevalence pattern and correlates of Metabolic syndrome among Sri Lankan adults by a population-based cross-sectional study conducted between years 2005–2006. MS was defined according to the International Diabetes Federation criteria. The independent co-variants were: gender, age category, area of residence, ethnicity, level of education, income and physical activity. The crude prevalence of MS was 27.1% and age-adjusted prevalence was 24.3%. Urban adults (34.8%) had a
significantly higher prevalence than rural adults (21.6%). Study concluded that MS is common among Sri Lankan adults affecting nearly one-fourth of the population.

17. **Sathyanarayana Rao K.N and Subbalakshmi N K (2012)** conducted prevalence of metabolic syndrome and comorbid conditions in inmates of old age homes. This study involved 180 subjects aged between 55-75 years of either sex housed in old age homes. Metabolic syndrome was found in 57.67% of study subjects. Prevalence of metabolic syndrome was higher in age group 55-60 years. Disease load of dyslipidemia, diabetes mellitus and hypertension was higher in metabolic syndrome group. In patients receiving treatment for diabetes and hypertension frequency of subjects with hyperglycemia and blood pressure was higher in metabolic syndrome group compared to non-metabolic syndrome group.

18. **Dimitrios Tziallas et. al. (2012)** evaluated health related quality of life in patients with metabolic syndrome. The aim of this study is to investigate whether MetS is associated with lower health related quality of life (HRQoL) and depression. The Medical Outcomes Study, Short Form 36 (SF 36) was used to assess HRQoL. A predominance of anxiety [60%] and depressive symptoms [67%] was observed among subjects with MetSyn. Patients with MetSyn undergoing a therapeutic approach showed no improvement in its general and mental health. The presence of MetSyn was associated with more impaired HRQoL as well as depressive behaviours.

19. **Muhammad Zafar Iqbal Hydrie (2012)** had done a study on risk factors for Type 2 Diabetes Mellitus: Metabolic Syndrome, Insulin Resistance and Primary Prevention. The epidemiological survey was designed among 500 randomly selected households in Lyari, an urban area within Karachi city in 2004. Study showed high prevalence of metabolic syndrome. To initiate preventive programs, dietary changes should be made within the population, as marked differences in dietary patterns which were apparently contribute to the risk of developing metabolic syndrome in the same population.

20. **Dhananjay Yadav et. al. (2013)** had done a study on prevalence of Metabolic Syndrome in Type II Diabetes Mellitus using NCEP-ATPIII, IDF and WHO Definition and Its Agreement in Gwalior Chambal Region of Central India. The study aimed to determine the prevalence of metabolic syndrome (Met S) in people with type II diabetes mellitus (T2DM). National Cholesterol Education Program (NCEP) ATPIII Criteria, International Diabetes
Federation and the World Health Organization (WHO) definitions were used in quantifying the metabolic syndrome and also the concordance between these three criteria’s used for identifying metabolic syndrome. Fasting blood glucose, Blood lipids (T-cholesterol, triglyceride, HDL-cholesterol) were assessed and anthropometry blood pressure were measured from all the subjects. Maximum prevalence of Metabolic syndrome was recorded when IDF criteria was followed.

21. Mun Chieng Tan et. al. (2013) had done a comparative study using WHO, NCEP ATP III, IDF and Harmonized definitions for analyzing prevalence of metabolic syndrome in Malaysian type II diabetic patients. This study involved 313 patients diagnosed with type II diabetes mellitus (T2DM) at two Malaysian tertiary hospitals. The overall prevalence rate of MetS was 95.8% according to the WHO, NCEP ATP III, IDF and the Harmonized definitions. The WHO against NCEP ATP III criteria evidenced the highest sensitivity (99.66%) whereas Harmonized criteria against all the other three definitions showed the highest specificity (100%) in identifying MetS. In conclusion, the new Harmonized criteria established the highest prevalence of MetS among the four definitions applied. There was a very good concordance between the WHO and NCEP ATP III criteria.

22. Patrícia Passos Simões et. al. (2013) conducted a study with the objective to describe the profile of diabetes mellitus type II patients (DM2) and to identify the presence of metabolic syndrome in Brazilian population. Dyslipidemia was present in 42.5% of the patients (n=54). When evaluating the BMI, mean value was 29.7 Kg/m. Mean and standard deviation values of fasting glucose were above normal. In the studied population, the prevalence of MetS was approximately 32%. Poor glycemic control, hypertension and overweight were highly prevalent in the studied population.

23. Annie Thomas and Alyce Ashcraft (2013) assessed risk of Type II Diabetes Risk among Asian Indians in the US. The study used a descriptive correlational design with thirty-seven adult non-diabetic Asian Indian subjects between 20 and 70 years of age. Twenty-one subjects (56.82%) reported a family history of type II diabetes. Only 9 subjects reported hypertension, and most (75.75%) had a blood pressure value of<120/82 mmHg taken during the past one month before the study. The decreased physical activity was associated with a higher Body Mass Index (BMI) and body fat percentage.
24. **Deepak Pathania et. al. (2014)** conducted a community-based cross-sectional study to determine metabolic syndrome in a rural area of Ambala district, Haryana. A multi-stage cluster sampling technique was employed to draw the required sample size. Anthropometric measurements such as height, weight, and waist circumference were measured using standard guidelines. A total of 110 (9.2%) subjects out of 1200 were found to have MS. It was found more in females (11.64%) than males (6.45%). The prevalence of MS increased with a higher waist circumference. Most cases (88.8%) of MS had fasting blood sugar levels between 150 and 200 mg/dl.

25. **Jaspinder Kaur (2014)** conducted a cross-sectional study to assess and screen risk factors for Metabolic syndrome and its components. The frequency of MetS was 17.38% as per modified National Cholesterol Education Program–Adult Treatment Panel III criteria. Common concerns of female gender, increasing age and BMI, sedentary lifestyle, stress and positive family history should be considered for early identification and appropriate intervention and would help to promote healthy dietary habits and physically active lifestyles that may fight against the growing epidemic of Metabolic Syndrome.

26. **Manal A Murad et. al. (2014)** had done a case control study titled Assessment of the Common Risk Factors Associated with Type II Diabetes Mellitus in Jeddah. Adult Saudis of both genders who were known diabetic patients were recruited as cases if they had fasting blood glucose levels $\geq 126$ mg/dl. Nondiabetic Saudi attendants of the primary health care centres (PHCs) were selected as controls. A pretested designed questionnaire was used to collect data from 159 cases and 128 controls. Results of this study showed that cases were more likely than controls to be men, less educated, natives of eastern Saudi Arabia, retired, lower-salaried, or married or divorced.

27. **Naji J Aljohani (2014)** assessed Risk factors of Metabolic Syndrome among adults in Kingdom of Saudi Arabia. The kingdom-wide prevalence of MetS was determined in this epidemiologic study. A total of 4578 Saudis aged 15-64 was randomly selected from 20 regions in Saudi Arabia. Results showed that the overall prevalence of MetS is 28.3%. Prevalence was significantly higher in males than in females. Prevalence of MetS was the highest in the northern and central region, and showed a parallel increase with age, and inversely with educational status. Region was also a significant contributor to MetS.
28. **Hamidreza Roohafza et. al. (2014)** studied relationship between metabolic syndrome and its components with psychological distress. A total of 9553 men and women aged ≥19 years from three counties in central Iran were selected. The mean age of 9553 participants (50% male) was 38.7 ± 15.8 years. After adjusting for demographic factors, MetS, central obesity, and hypertension were associated with high distress level. Study concluded that the presence of association between the MetS as well as its key components and high distress level signifies the importance of integrating psychological assessment and intervention in the standard management of MetS patients.

29. **N Bergmann et. al. (2014)** had done a meta-analysis study on chronic psychosocial stress as a risk factor for the development of the metabolic syndrome (MES). Thirty-nine studies were included. Regarding the four elements of MES: i) weight gain: the prospective studies supported etiological roles for relationship stress, perceived stress, and distress, while the studies on work-related stress (WS) showed conflicting results; ii) dyslipidemia: few studies on psychosocial stress as a risk factor for dyslipidemia were available to draw a conclusion; however, a trend toward a positive association was present; iii) type II diabetes mellitus (DM2): prospective studies supported perceived stress and distress as risk factors for the development of DM2 among men. iv) hypertension: marital stress and perceived stress might have an influence on blood pressure (BP), while no association was found regarding distress.

30. **Ana Spasic et. al. (2014)** conducted a cross-sectional study that included 86 patients with type II diabetes mellitus, in the territory of the City of Niš. Health-related QOL of patients was measured using the short form survey (SF-36) that produces an 8-scale health profile. Male respondents perceived a better QOL compared to women, especially in the vitality and pain domains. The patients with co-morbidity (93.64%) had lower QOL score in all domains. High QOL represents an ultimate goal and an important outcome of all medical interventions in diabetic patients. Uncontrolled diabetic patients had a lower QOL than controlled diabetics.

31. **U Sinha, B Mukhopadhyay (2015)** done a study on the effects of socio-demographic and lifestyle factors on metabolic syndrome in the urban elderly of Kolkata. Between 2010 and 2012, 108 male and 100 female Bengali aged 65 to 79 years in the middle-class, urban area of Salt Lake city, Kolkata were randomly selected. The prevalence of MetS was 34.13%, 47.12%, and 35.58% according to the 3 different criteria. MetS was associated with
hypertension and hypertriglyceridemia in males, and hypertension, obesity, and low high-density lipoprotein in females. The prevalence of MetS was relatively higher in the Salt Lake city of Kolkata than in other Indian urban cities.

32. Nicola Magnavita (2015) done a study to evaluate the association between psychological damage caused by common occupational trauma and metabolic syndrome. 571 workers from 20 small Italian companies were invited to fill in the Psychological Injury Risk Indicator (PIRI) during their routine medical examination at the workplace. Compared to workers with no psychological injury, workers with a high PIRI score had a significantly increased risk of having at least one metabolic syndrome component. There was a significant increase in the risk of hypertriglyceridemia in male workers, and of hypertension in female workers.

33. Aliasghar A Kiadaliri (2015) done a systematic review of studies in Iran on quality of life in people with diabetes. Evaluation of health-related quality of life (HRQoL) among people with diabetes has been growing in Iran over the last decade. A total of 46 studies passed the inclusion criteria and were included in the review. Most studies investigated HRQoL among people with type II diabetes. The Short Form Health Survey (SF-36) and WHO quality of life instruments (WHOQOL) were the main instruments used in these studies. Studies showed that people with diabetes had lower HRQoL than people without diabetes. Better socioeconomic status and better control of cardiovascular risk factors were associated with better HRQoL among the patients with diabetes.

34. Biju Jacob et. al. (2015) had done a study to find out the prevalence of metabolic syndrome among newly detected type II diabetes mellitus patients in central Kerala along with its association with age, gender, socio-economic class and also to compare male and female subgroups of metabolic syndrome. This was an observational study comprising of 503 patients (297 men, 206 women) in the age group of 30-60 years with recently documented type II diabetes. The prevalence was found to be 66.2% according to the modified National Cholesterol Education Program Adult Treatment Panel 3 (NCEP ATP3) criteria for Asians. Associations of metabolic syndrome were noted for systolic and diastolic hypertension, elevated triglycerides (more in men) low high-density lipoprotein (more in women) and waist circumference (p<0.05).

35. Kwabena Nsiah et. al. (2016) studied Prevalence of metabolic syndrome in type 2 diabetes mellitus patients. This was a cross-sectional study aimed at determining the
prevalence of metabolic syndrome (MetS) and its individual components and the most critical predictive risk factors of MetS in 150 type 2 diabetic patients at the Diabetes Centre of the Komfo Anokye Teaching Hospital in Kumasi, the Ashanti Region of Ghana. The prevalence of MetS was 58% in the studied Ghanaian population. Hypertension was the commonest risk factor (60%), followed by central obesity (48.67%) and dyslipidemia (37%).