Reviewer’s report

Title: Diabetes Mellitus Type 2 and other Chronic Non-communicable Diseases in the Central Region, Saudi Arabia (Riyadh Cohort 2): A Decade of an Epidemic

Version: 1 Date: 26 March 2011

Reviewer: Arjumand Warsy

Reviewer’s report:

“Major Compulsory Revisions”

1- The title suggests that DMT2 and other chronic non communicable metabolic diseases will be discussed as their prevalence has altered over the years, but the discussion section concentrates mainly on DMT2, with very scarce discussion of the other non communicable diseases. Elaborate more on all the disorders.

2- It is stated that the subjects were recruited randomly from different Primary Health Care Centers (PHCC) across Riyadh using the cluster sampling strategy. Usually people who go to the health centers have some medical problem and are not entirely well. This would bring in a bias and may affect the results of the study, as the sample will not be entirely random. Clarify this.

3- The summary and the sample collection section clearly presents that the samples were collected from individuals 18-70 years of age [5357 males (58.6 %), 3792 females (41.4 %)], but in the diagnostic methods section, applied for the diagnosis of DTM2, obesity, and other disorders, children appear and include 2519 children age range from 7-17 years. This is also presented in the results section, where the prevalence of all the studied disorders is listed for 7-17, 18-45 years etc in the Tables. If the study was conducted on adults, why were the children included? This will certainly affect the comparisons with earlier studies, which are reporting results from adults or older age groups e.g. Al-Nozha et al 2004, reported results on 30-70 years old.

4- Diagnosis was based on WHO proposed cut-offs for diagnosis of DMT2 and impaired fasting glucose (IFG). How about DMT1, what was the method used for diagnosis of this type of diabetes? Surely in the large cohort used in this study, there were several individuals who were already diagnosed as suffering from diabetes and were on different types of medications, e.g. oral hypoglycemic and insulin. What measures were taken to ascertain their inclusion as diabetics, since their blood glucose may be normal if they were on drugs? In the same way, the individuals who were hypertensive may have a normal blood pressure due to the antihypertensive drugs used. What measures were taken to ascertain the inclusion of such individuals as hypertensive?

5- The younger age groups included in this study e.g. 7-10 years old, how was it ascertained that they were observing overnight fast? What diagnostic criteria were applied for diagnosis of DMT1 in this group?

6- There is a detailed presentation, in the Methods section, of collection of diet
information using the food frequency questionnaire. This questionnaire was developed, pre-tested and validated in a pilot study. What is the need to include this information in this paper, since no data, results or discussion covers these points. Similarly why waist and hip circumference (cm) ratio is mentioned in the method section, with no further comment on it in the rest of the paper?

7- The only biochemical measurements presented in the paper is fasting blood glucose, no other measurements are presented. So reduce this section. What does BRP stand for? Give the full name. In the same section it is mentioned that whole blood and serum were placed in plain polystyrene tubes. Why did you need both? What was the use of whole blood in this study? How long time passed between the collection of blood sample and separation of the serum and storage at -200C. Since glucose can be taken up by the red cells and can be utilized by the glycolytic enzymes in the red cells thus decreasing the glucose level, it is essential either to collect the blood in fluoride tubes or to immediately separate serum and the red cells and store at low temperature.

“Discretionary Revisions”

8- If whole-blood glucose was measured than a multiplication factor of 1.15 has to be used to obtain the serum/plasma level.

“Minor Essential Revisions”

9- Make the discussion section stronger, and discuss the different factors that may influence the development of these diseases. There is no mention that these are multifactorial, with both genetic and environmental factors contributing to their etiology.

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

‘I declare that I have no competing interests’