Author’s response to reviews

Title: The Prevalence, Risk Factors, and Screening Measure for Prediabetes and Diabetes among Emirati Overweight/Obese Children and Adolescents

Authors:

Elham Al Amiri (elham.amiri@moh.gov.ae)
Mona Abdullatif (mona.abdullatif@gmail.com)
Abdishakur Abdulle (asmabdulle@gmail.com)
Nibal Al Bitar (nmf-albitar@hotmail.com)
Elham Zaki Afandi (elham_afandi@live.com)
Monira Parish (drmp_82@yahoo.com)
Gassan Darwiche (ghassan.darwiche@med.lu.se)

Version: 5
Date: 11 December 2015

Author’s response to reviews: see over
Subject: Resubmission - Ms. Version 3

Title: The Prevalence, Risk Factors, and Screening Measure for Pre-diabetes and Diabetes among Emirati Overweight/Obese Children and Adolescents

Dear Editors,

Once again, we wish to thank you very much for your kind reply and invitation to re-submit the subject manuscript. Please note that the required response to reviewer 2 has been added to the manuscript as follows by the point-by-point response below.

Point-by-point response;

Reviewer 1: Emanuele Miraglia del Giudice

"Changes are in the right direction. I am satisfied."

Reviewer 2: Maria Fiatarone Singh

1. "The abstract still states: Unemployment was a risk factor for abnormal glucose testing. I believe it is EMPLOYMENT that is the risk factor?"

   Please be aware that the sentence has been corrected as follows:

   Abstract, Line 56;
   Overall adiposity, family history of T2D, employment and high levels of triglycerides were risk factors associated with abnormal glycemic testing.

2. "Some of the responses to Reviewer 2 should have been incorporated into the text itself, not just stated in the response. For example;

   a) "the number of students who did not consent to the study or to secondary
testing" and "the total pool of students from which the cohort was selected"

b) "the appropriateness of CDC cutoffs for anthropometrics in non-Caucasian cohorts"

c) "the standardization protocol for OGTT testing etc"

a) Please note the additional text in Methods, Line 93:

The School health Program in the UAE have a national physical examination screening program including measuring height and weight and charting BMI on growth charts for all students. The procedure is standardized and conducted by trained school nurses. Instructions, like students being bare-foot and in minimal clothing, are given before weight is measured with electronic scales that are calibrated periodically by biomedical engineering department. List of due date for calibration of electronic scales are maintained in the school health department. In this cross sectional study, we invited all overweight/obese Emirati students from grade 6-12 aged 11-17 years from the records of all public government schools in Sharjah. Of the total (20), only 16 schools have had complete student data in terms of height, weight and calculated Body Mass Index (BMI).

Please note the additional text in Results, Line 204 and the text of Figure 1, Line 520:

From the school health records of 16 schools (the overall cohort n=7088 students), 1436 Emirati students aged 11-17 years were identified, who were either overweight or obese according to our inclusion/exclusions criteria.

Please also note the additional text in Discussion, Line 357:

A potential limitation of studies in pediatric subjects and adolescents could be difficulties in achieving a good response rate with the risk of sampling bias. Letters of invitation were sent to consent parents on using their children’s data. Those who did not respond were sent further second and third reminders. If still not responding the wish of parents was respected and other details of the student were not captured (blood pressure, glycemic testing etc.). We were not able to identify anything distinctive for those children and adolescents concerning age, gender and BMI and we don’t have further data in able to analyze the characteristics of non-respondents in comparison with respondents. In our
study the response rate was 72% at the first invitation and 79% in the second phase (Figure 1). All though we cannot be sure about the student’s reason for not participating in the study and there might be a possibility of selection bias, we assume the main reason to be unwillingness to be exposed to finger pricking.

b) Please note the additional text in Discussion, Line 343:

The reference population used to construct the CDC Growth Charts for children aged 2 years to 20 years is a nationally representative sample obtained from 5 national health examination surveys conducted by NCHS from 1963 to 1994. Survey-specific sample weights were applied to the national survey sample data to assure representation of the U.S. population according to age, gender, and racial/ethnic composition at the time the surveys were conducted. CDC promotes one set of growth charts for all racial and ethnic groups. Racial- and ethnic-specific charts are not recommended because studies support the premise that differences in growth among various racial and ethnic groups are the result of environmental rather than genetic influences (40).

c) Please note the additional text in Methods, Line 127:

OGTT was performed during standardized conditions. Participants were instructed to live as normal as possible in respect to diet and physical activity the days before the OGTT. The test was postponed to another day in the event of ongoing infection. They were also instructed not to exercise and to abstain from food, fluids (except water) and tobacco from 10 pm the night before the test. The 10 hour fasting was confirmed by asking both the participants and their parents.

d) Please note the additional text in Methods, Line 148:

Further, exercise habits using physical activity score based on different levels of physical leisure activity [no activity, activity (1 time/week), regular activity (1-2 times/week), regular activity (3-5 times/week), and regular daily activity were recorded using a validated questionnaire for physical exercise taken from the National Diabetes Register (NDR), [17]. NDR is one of Sweden’s national quality registers operated by the Swedish Society for Diabetology (SFD) on behalf and with the support of local authorities and the Swedish National Board of Health and Welfare. The questionnaire is used for adults as well as children and adolescents (through SWEDIABKIDS) to facilitate systematic quality work at the participating care units.
Relationship by blood is an important risk factor for type 2 diabetes to consider. Previous epidemiologic studies have shown that people with a family history of diabetes in first-degree relatives who are affected with diabetes are 2 to 6 times as likely to have the disease compared with people who have no affected relatives [37]. The United Arab Emirates has one of the highest prevalence of type 2 diabetes in the world and marriages between cousins are common, which could increase the risk of getting type 2 diabetes.

3. “The statistics section still states that mean and SD were used to describe the cohort. However, other than age and height, in the authors' response they indicate that all the other characteristics were NOT normally distributed. Therefore, these should be described as median and range or IQR, not mean and SD. Need to add how data were assessed for eligibility.”

Please note that data are shown as median and IQR in Results, Table 1 and Table 3. Also note the additional text in Statistical evaluation, Line 193:

Statistical analyses were performed using STATA version 12.0 for Windows. Variables were tested for normality both visually and statistically and most of the variables lacked normal distribution. Accordingly non-parametric tests were used and the study population was described using median values with quartiles (q1 to q3). To compare continuous and categorical variables, we used Kruskal–Wallis and Fisher's exact test, respectively. BMI Z-score were used to explore the association between BMI and diabetes or prediabetes. Univariate logistic regression analysis was used to estimate the odds associated with prediabetes and diabetes for selected risk factors. P-value < 0.05 was considered statistically significant.

Sincerely

Dr Elham Al Amiri, MD, (corresponding author)
Department of Pediatrics, Al Qassimi Hospital
Ministry of Health, Sharjah, United Arab Emirates

E-mail: elham.amiri@moh.gov.ae