Reviewer’s report

Title: Performance of Neck Circumference to Predict Obesity and Metabolic Syndrome among Adult Saudis: A Cross-sectional study

Version: 0 Date: 14 Jan 2019

Reviewer: Reviewer 2

Reviewer’s report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)?
Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?
Yes - the approach is appropriate

EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results?
Yes - experiments and analyses were performed appropriately

Statistics - Is the use of statistics in the manuscript appropriate?
Yes - appropriate statistical analyses have been used in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?
Yes - the author's interpretation is reasonable

OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound?
Probably - with minor revisions
GENERAL COMMENTS: The study contributes to the existing literature on the potential of neck circumferences as accurate, simple and noninvasive tool for screening obesity and metabolic syndrome (MetS). The authors used gold standard experimental protocol to determine the obesity and component of MetS. The convenient sampling technique employed in the study may not allow the generalization of the results (a limitation also identifies by the author). However, the sample size may allow meaningful conclusion. Find below other suggestions that will help to improve on the quality and soundness of the manuscript.

Title
"A cross sectional study" A Cross Sectional Study (title case)

Abstract
Page 2
Line 4 "Background" add colon
Line 13 "performance of NC to diagnose general obesity .... " change to performance of NC to predict general obesity
Line 15 "obesity, and MetS." remove comma after obesity.
Line 23, please state the mean age of the study population.
Line 28 "Haemoglobin". Change the H to small letter that is hemoglobin (American spelling). It may be more appropriate to use British or American English rather than the mixture of both.
Line 32 "Data were analyzed using SPSS"; please state the vision
Line 37 "Receiver Operator Characteristic (ROC) curves", it is more appropriate to use ROC analyses
Lines 38 & 39 "The cutoff value of NC which possessed good discriminating power ...." between what? Please specify the groups you intended to discriminate.
Line 40 "Yoden index"; spelling Youden's
Line 42 "OR" spell out odd ratio.
Line 43 state the type of logistic regression analysis used.
Line 48 "Results" add colon

Line 50 "ROC analyses..." Do you mean Receiver Operator Characteristic (ROC) curves?

Line 53 "obesity, and MetS." remove comma after obesity

Line 55 "Area Under the Curve (AUC) ranged from 0.86-0.77" start from lowest to highest that is 0.77-0.86.

Line 55 "0.77, and 0.82" remove comma

Line 58 "neck circumference" use NC

Line 58 "to identify" to predict. What of the cutoff values that predict MetS?

positive association

line 65 "Results of adjusted logistic regression analysis" should read as the results of logistic regression adjusted for .......(state the variables adjusted for e.g age etc)

Page 3

Line 12, "NC stands out as an independent predictor of general obesity and the MetS". Any comment/conclusion on central adiposity?

Line 24 Keywords; arrange alphabetically, add comma after metabolic syndrome

Page 4

Background

Lines 4&5"...even some cancers affect human's health, quality of life, and longevity". Not clear paraphrase.

Line 43"Body Mass Index (BMI)" Body mass index.

Line 38 "Except for waist circumference" except for WC

Line 40 "measurement" measurements

Page 5

Line 5 "NC cut-off varies" NC cut-off values varies. And be consistent in the write up cutoff (without hyphen) or cut-off (with hyphen)
Line 5 "gender, and ethnic" remove comma

Line 22 "increased very-low-density" delete increased

Line 27 "hypertension, and vascular injury" remove comma

Page 6

Line 5: "(HHP) Study" (HHP) study

Line 8 "king Saud University" King Saud University

Line 20 "guidelines in the Declaration of Helsinki" any reference?

Line 25 "in 2016" delete

Line 42 Study sample: delete colon

Line 44 "amounted to 3,063" state the male and female proportion and mean age

Line 45 "In this study, non-Saudis were excluded" does the Saudis population selected belong to the same ethnic group (if yes to what level?) or the selection was based on the Saudi indigenes or country of origin.

Line 55 "Neck circumference (NC)" NC

Line 55 "all Participants, using a tape measure" all participant and what is the model of the tape. Is the tape non elastic?

Page 7

Lines 11 and 12 "Valid measures of central obesity including WC, hip circumference (HC), WHpR and WHtR were estimated according to standardized techniques." Reference is need. What of the measurement of the height as component of WHtR. For all the measurement name the instrument and manufactures as applicable.

Line 22 "BMI is defined as a measure" how do you arrive at the BMI? Did you measure the weight before the calculating the BMI? (if yes please include such statement ).

Line 34 "Hypertension:" remove colon

Line 42 "Participants were subsequently classified," as what? In the abstract you made mention of assessment of blood pressure. Did you measure the blood pressure? What the assessment meant for? Since you stated that "Participants were deemed hypertensive if they self-reported that they were currently using any anti-hypertensive medications regardless of their blood pressure readings".
Participants were identified as having diabetes, state the type of diabetes mellitus (type 2?).

Data were summarized as percentages and were compared using Chi-square test or Fisher's exact test as frequency and percentage. You need to specify the type of chi-square used (Chi2 goodness of fit, not Chi2 test of independence). The Fisher exact test may not be applicable here since you are comparing two groups with large frequency. It is not possible to have expected frequency to be less than five in one of the groups (male or female group).

Using independent sample t-test or Mann-Whitney-U test after testing for normality. Here need to mention those variables after each test based on assumption of normality after. Example independent sample t-test (list the variables) or Mann-Whitney-U test (list the variables). It is also more appropriate to report median and interquartile range (not mean and standard deviation) for non-normally distributed data.

Accuracy of NC to diagnose to predict

BMI as the gold standard

"(13)" [13] were achieved were determined

"fit for data" fit for the data, "p-value" P-Value

"while their mean ages were comparable." Not clear. Similar statistically?

"yet the mean value of BMI was higher in females" except for the mean value of BMI which was higher in...

"were nearly equal in both genders" were statistically equal in both gender.

"In table 2;" In Table 2

"were 0.8 and 0.77 for" were 0.8? and 0.77

"WC, and WHtR" remove comma
Discussion

Lines 39 to 60: this more like the result not the implication of your finding. There is no need to make reference to your tables in the discussion section. All the necessary information needed in the tables was reported in the results section.

Line 54: 0.82 -0.86. 0.82

Lines 7 and 13: (12-14) and (16-18) [12-14] [16-18]

Lines 23 and 24: estimated based on large sample size to ensure generalizability of the study results. The sampling technique is also important for generalization of results.

Line 10: (16-18, 39) [16-18, 39]

Line 37: to diagnose to predict

Line 57: Table of abbreviations: The abbreviation should be written in sentence case and arranged alphabetically.

Funding

Line 36: college of medicine research center College of Medicine Research Center
Page 18

Line 11 References

The reference form was not uniform e.g Journal names were written in full in some citation whereas in others they were abbreviated.

Page 21

Line 1 Table 1

Indicate the unit of NC, WC and HC. Delete (NC) (WC) & (HC). Use symbol to indicate the anthropometric measurement that were not normally distributed. Used median and inter quartile rage for not normally distributed variable. P value should be written at least at 3 decimal place e.g <0.001 and percentages to 2 decimal places. The unit of blood pressure is mmHg. Explain the abbreviation below the table e.g LDL; low density lipoprotein

Page 22

Line 2 "central" Central

Table 3

In the first column write the major headings as Obesity (Diabetics & Non-diabetics), Obesity (Non-diabetics), Obesity (Diabetics) similarly, Central Obesity (Diabetics & Non-diabetics), Central Obesity (Non-diabetics), Obesity (Diabetics). Also specify the fist obesity as general?

Page 23

Line 25 "obesity" Obesity

Table 4; add a column containing the cutoff values of NC. Be consistent in presentation of N. present you values in 2 decimal places

Page 24

In the first column you have combination of title case and sentence case.

Note: This reviewer report can be downloaded - see attached pdf file.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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