PEER REVIEW HISTORY

This paper was submitted to a another journal from BMJ but declined for publication following peer review. The authors addressed the reviewers' comments and submitted the revised paper to BMJ Open. The paper was subsequently accepted for publication at BMJ Open.

(This paper received three reviews from its previous journal but only two reviewers agreed to published their review.)

ARTICLE DETAILS

TITLE (PROVISIONAL)	DIABETES PREVALENCE SURVEY OF PAKISTAN (DPS- PAK): Prevalence of type 2 Diabetes Mellitus and pre-diabetes using HbA1c: A population-based survey from Pakistan
AUTHORS	Aamir, Azizul Hasan; Ul-Haq, Zia; Mahar, Saeed A; Qureshi, Faisal; Ahmad, Ibrar; Jawa, Ali; Sheikh, Aisha; Raza, Abbas; Fazid, Sheraz; Jadoon, Zahid; Ishtiaq, Osama; Safdar, Nauman; Afridi, Hussain; Heald, Adrian

VERSION 1 – REVIEW

REVIEWER	Christy Costanian University of Ottawa, Canada
REVIEW RETURNED	02-Aug-2018

GENERAL COMMENTS	1) Entire manuscript has to revised by a native English speaker for correct syntax. 2) What variables were controlled for in the multivariable regression analysis? This has not been mentioned anywhere, neither in the methods section or as footnotes in the tables.

REVIEWER	Rayaz A Malik Weill Cornell Medicine-Qatar, Doha, Qatar
REVIEW RETURNED	22-Sep-2018

| GENERAL COMMENTS | This is an important study as it provides the most recent figures for the prevalence of diabetes mellitus across Pakistan. The authors are to be commended for this effort.

Strengths:
1. Large (n=18856) population based up to date prevalence study utilizing appropriate sampling across all regions of Pakistan.
2. They identify a higher prevalence of DM and IGT than previously established and they also show that those with known DM have poor glycemic control with an average HbA1c of 8.68% and those with newly diagnosed DM also have a poor HbA1c of 8.56%.
3. They establish regional variations across Pakistan, which may be relevant to local diets etc.
4. They also establish the risk factors for DM.

Weaknesses. |
|---|---|

	1. HbA1c is not perfect, but has been endorsed by the IDF/ADA/EASD as a test to screen for DM. It also allowed males to participate in the survey as fasting was not required and the test could be undertaken at any time. Furthermore OGTT was undertaken in a sub-sample to validate the HbA1c findings, which showed good sensitivity and specificity. 2. Anemia, which can affect HbA1c, was an exclusion criteria. 3. The authors have to discuss the results of the recently published 2nd NDSP (Basit et al BMJ Open. 2018; 8: e020961) carried out at virtually the same time in Pakistan and explain why their findings are lower than in this study with a reported prevalence of diabetes of 26.3% (16.98%) and pre-diabetes of 14.4% (10.91%). 4. The conclusion in the abstract needs to be rewritten to conclude the findings, as opposed to the use of emotive language. 5. Given that Dr Heald is a senior author, I would recommend that he review the paper, especially for correct use of English grammar.

REVIEWER	tawanda chivese Stellenbosch University, South Africa
REVIEW RETURNED	02-Oct-2018

GENERAL COMMENTS	DIABETES PREVALENCE SURVEY OF PAKISTAN (DPS- PAK): Prevalence of type 2 Diabetes Mellitus and pre-diabetes using HbA1c: A population-based survey from Pakistan bmjopen-2018-025300 Thank you for the opportunity to review this excellent research. The research was done in a rigorous way and the suggestions I have made are merely for the improvement and should not be taken as criticism. General grammar There are several instances where the language needs to be improved. I have noted a few examples here and would suggest that the authors ask a proof reader to go through the articles to improve the writing. 1. The word "HbA1C" should be written with a subscript as follows "HbA1C". The authors can use the replace function in Microsoft Word to do this easily. 2. Page 5, line 40. The authors must put a space between An and HbA1C a. Line 37, page 8, space between "18565", "participated" and "aged" b. Line 5, page 9, space between the "." and "The" c. Line 52, page 9, space between "in" and 1999 Sample Size It is not clear why the authors chose a precision of 20% around a T2DM estimate of 12%. Even if they mean the full width is 10%, it does not seem to make much sense. Do the authors imply that they planned to estimate a proportion of 12% but were willing to err as much as getting a low estimate of 2% or an estimate as high as 22%?

VERSION 1 – AUTHOR RESPONSE

Reviewer 1:
We thank Doctor Christy Costanian for reviewing the paper.
Comment:
1. We have the paper read by a native English speaker.
2. The following variables were included in the multivariate regression: Age, gender, residence area, education, BMI, family history of diabetes, smoking, systolic and diastolic blood pressure.

Reviewer 2:
We thank Professor Malik for his supportive and helpful review
Weakness:
1. We accept that HbA1C is not a perfect way of screening for impaired glucose regulation. However, given the size and disparate nature of the population sample this was the only practical way of undertaking of screening.
2. We have covered the anaemia issue in the limitation section.
3. We have noted the findings of Basit et al (Bmj Open 2018). The methodology for that study was based on 75g Oral Glucose Tolerance diagnostic test for glucose handling as opposed to HbA1c used in our study. While the prevalence of diabetes + pre-diabetes is different in the two studies, the point that both studies make is that both diabetes and pre-diabetes are much more prevalent than previously thought. We made reference to this in the discussion section of the paper.
4. We have revised the conclusion of the abstract to be less emotive i.e. "Strategies need to be developed to incorporate screening, prevention and treatment of type 2 diabetes at a community level."
5. Dr Heald has scrutinised the paper closely.

Reviewer 3:
Thanks to Dr Chivese for taking such trouble over your review and constructive critique.
Comment:
We have revised the language where necessary.
1. We have corrected HbA1C to HbA1c
2. "A-C" Changes have been made.

Sample size:
The 20% precision is relative not absolute. Hence, the full width of potential prevalence is between 10.8-13.2%. We have made clear in the text that the precision is relative not absolute.

VERSION 2 – REVIEW

REVIEWER	Rayaz A Malik Weill Cornell Medicine Qatar
REVIEW RETURNED	21-Nov-2018

GENERAL COMMENTS	The authors have addressed my major concerns, although the english and grammar still need further improvement.

REVIEWER	tawanda chivese University of Cape Town, South Africa
REVIEW RETURNED	06-Dec-2018

GENERAL COMMENTS	The draft still needs the English to be worked on a bit and i hope you will find this useful .

	The reviewer provided a marked copy with additional comments. Please contact the publisher for full details.

VERSION 2 – AUTHOR RESPONSE

Reviewer 2:
We thank Professor Malik for his supportive and helpful review
Comment:
1.   Competing interests "None declared"

Reviewer 3:
Thanks to Dr Chivese for taking such trouble over your review and constructive critique.
Comment:
1.   We have revised the language where necessary and did all the changes as per your provided suggestions
2.   Competing interests "None declared"