

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Prevalence of comorbidities and their associated factors in patients with type 2 diabetes at a tertiary care department in Ningbo, China: a cross-sectional study
AUTHORS	Li, Xueyu; Chattopadhyay, Kaushik; Xu, Shengnan; Chen, Yanshu; Xu, Miao; Li, Li; Li, Jialin

VERSION 1 – REVIEW

REVIEWER	David Vivas-Consuelo Universitat Politècnica de València. INECO. Research Unit for Economics and Health Management. SPAIN
REVIEW RETURNED	24-Jul-2020

GENERAL COMMENTS	<p>This article is a follow-up to another recently published by the same co-authors:</p> <p>Li J, Chattopadhyay K, Xu M, Chen Y, Hu F, Chu J, et al. (2020) Prevalence and associated factors of vascular complications among inpatients with type 2 diabetes: A retrospective database study at a tertiary care department, Ningbo, China. PLoS ONE 15(6): e0235161. https://doi.org/10.1371/journal.pone.0235161</p> <p>It is focused on studying multimorbidity in patients with DM type 2 and independently associated factors in a hospital setting.</p> <p>The topic covered is not novel in the literature and presents some deficiencies that I list:</p> <ol style="list-style-type: none">1. The prevalence of DM type 2 in the health district is not well defined in the article. What is the health district population?. How many patients with DM type 2?2. Are the 4777 patients included fixed throughout the study or are new patients are included each year. What is the mortality rate?3. Although not directly targeted by this study, the effect of complications of DM2 type 2 and possible cardiovascular events (ictus, MI, and others) is not analysed, which would not strictly be co-morbidities but consequences. See Sancho-Mestre C, Vivas-Consuelo D, Alvis-Estrada L, Romero M, Usó-Talamantes R, Caballer-Tarazona V. Pharmaceutical cost and multimorbidity with type 2 diabetes mellitus using electronic health record data. BMC Health Serv Res. 2016;16(1):394. Published 2016 Aug 17. doi:10.1186/s12913-016-1649-24. In Figure 1 it would be interesting to consider the age effect, how many co-morbidities are presented in each age range, or in each age as a continuous variable. The age range of 60+ is obviously very numerous. It should be subdivided into 60-69 and 70+.
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	<p>5. Only 6% of patients do not have multimorbidity. This seems a very low percentage and produces an asymmetry with those patients considered to be multimorbid.</p> <p>6. The criterion for multimorbidity could be made more accurate by making clusters of patients depending on the type or number of co-adjutant clinical conditions. Strictly speaking a patient with HTA and DM2, for example, would not be multimorbid. Nor would a patient with sleep disorders and DM2.</p> <p>See: Fortin M, Stewart M, Poitras ME, Almirall J, Maddocks H. A systematic review of prevalence studies on multimorbidity: toward a more uniform methodology. <i>Ann Fam Med.</i> 2012;10(2):142-51. doi:10.1370/afm.1337.</p> <p>Other studies considered multimorbidity prevalence 3+ chronic conditions. Basham CA. Regional variation in multimorbidity prevalence in British Columbia, Canada: a cross-sectional analysis of Canadian Community Health Survey data, 2015/16. <i>Variations régionales de prévalence de la multimorbidité en Colombie-Britannique (Canada) : analyse transversale des données de l'Enquête sur la santé dans les collectivités canadiennes de 2015-2016.</i> <i>Health Promot Chronic Dis Prev Can.</i> 2020;40(7-8):225-234. doi:10.24095/hpcdp.40.7/8.02</p> <p>7. Another issue is the degree of control of DM2; as the study is carried out over several years, what is the control criterion? Mean value of HBA1c tests?.</p> <p>In my opinion, the article requires significant improvements to be published.</p>
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REVIEWER	<p>Jeannine Uwimana Nicol Centre for Evidence-based Healthcare Faculty of Medicine and Health Sciences Stellenbosch University & School of Public Health College of Medicine and Health Sciences University of Rwanda</p>
REVIEW RETURNED	10-Sep-2020

GENERAL COMMENTS	<p>Congratulation to the author team for conducting a study on a very important topic and relevant in enhancing the prevention and management of chronic diseases. The manuscript is written in an acceptable manner but will require a professional English editor to improve the readership. Also, the definition of multimorbidity needs to be revised to fit the WHO and the literature. Multimorbidity refers to the presence of two or more chronic conditions. Please refer to the WHO website. Hence, will suggest to rather use comorbidity in T2DM. The source of the data used has some flaws, it could have been supplemented by other forms of data collection. I have provided some few comments for the authors team to look at to strengthen the manuscript.</p> <p>Feedback for the BMJ paper Title: “A retrospective database study to explore multi-morbidity among patients with type 2 diabetes in a tertiary care department in Ningbo, China” Strengths and limitations of the study Page 6 _Line 33: Our study had the usual routinely collected data issues as an existing medical records database was used – its main purpose is medical management and not research.</p>
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	<p>This is not a valid reason for poor quality data. The research team should have ensured that the routine data as source of data collection to answer the research questions. Was no any other source of data that could have supplemented to the routine data?</p> <p>Pg5- line 9: One such non-communicable disease is type 2 diabetes (T2DM), a complex metabolic disorder... this needs to be rephrased. It could read 'One of the most prevalent NCDs is type 2 diabetes...'</p> <p>Pg5 – line 15:T2DM is rarely presented in isolation and is accompanied by other chronic conditions..' would suggest to rephrase: T2DM is rarely represented in isolation and accompanied by other chronic conditions'</p> <p>Pg7- line 10-15 : 'Multi-morbidity was defined as having T2DM and at least one other chronic condition.....' to my knowledge multi-morbidity is define as a presence of more than two chronic conditions. Please refer to Multi-morbidity – Technical Series of Safer Primary Healthcare. https://apps.who.int/iris/bitstream/handle/10665/252275/9789241511650-eng.pdf?sequence=1</p> <p>Given that the definition of multi-morbidity and criteria used for inclusion of study respondents are not in line with international standard, I would suggest that the team revised their objective and title to Comorbidity fits the definition used for this study.</p> <p>Pg7 – line 27: Section on Ethics is very short and actually doesn't provide any useful information regarding the ethical clearance consideration. Would suggest the authors to expand on this section.</p> <p>Do the results address the research question or objective? The results do address the research objectives in part. It could have been better to use additional means for data collection given that the authors identified the short fall of the routine data system. The data has quite a considerable number of missing data.</p> <p>Are Results presented clearly? The results are well presented. However, need quite professional editing for good readership.</p> <p>Are the discussion and conclusions justified by the results? The discussion and conclusion are justified by the results. However, would be great to have key main findings linked to current literature and evidence. Some of the discussion are out of the objectives of this study parameters.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Reviewer Name: David Vivas-Consuelo

Please leave your comments for the authors below

This article is a follow-up to another recently published by the same co-authors:

Li J, Chattopadhyay K, Xu M, Chen Y, Hu F, Chu J, et al. (2020) Prevalence and associated factors of vascular complications among inpatients with type 2 diabetes: A retrospective database study at a tertiary care department, Ningbo, China. PLoS ONE 15(6): e0235161.

<https://doi.org/10.1371/journal.pone.0235161>

Response: As suggested, we have now added the following in the discussion:

Comorbidities are not synonymous with complications.[reference] In a previous study on the vascular complications of T2DM, we included microvascular complications (i.e., diabetic retinopathy,

nephropathy, and neuropathy/foot) and macrovascular complications (i.e., coronary heart disease, stroke, and peripheral arterial disease) and found that more than half of the patients with T2DM had vascular complications.[reference]. In the present study, we explored comorbidities in patients with T2DM using a recommended definition. Comorbidity was defined as the co-existence at least one other chronic condition, either a physical (non-communicable/infectious disease) or mental health condition.[references] Unlike the previous study, in the present study, microvascular complications were excluded, as these were consequences of T2DM and should not be considered as comorbidities.[references]

It is focused on studying multimorbidity in patients with DM type 2 and independently associated factors in a hospital setting. The topic covered is not novel in the literature and presents some deficiencies that I list:

Response: Thank you very much for reviewing the manuscript. We have now amended the manuscript. The health issues in any particular population or setting could be different from others, and thus, we have explored and reported it using robust methods as required by BMJ Open.

1. The prevalence of DM type 2 in the health district is not well defined in the article. What is the health district population? How many patients with DM type 2?

Response: We have mentioned the following in the introduction:

China has the largest T2DM epidemic in the world, and in Ningbo, its prevalence in adults ≥ 40 years of age is 21%.[reference]

We have now added the following information:

The population of the city is approximately 8.2 million.[reference]

2. Are the 4777 patients included fixed throughout the study or are new patients are included each year. What is the mortality rate?

Response: This was a cross-sectional study - there was no follow-up and data (on each eligible patient) at one specific point in time were analysed. We have mentioned the following in the methods: An existing computerised medical records database was used for conducting this cross-sectional study... This retrospective study included eight years of data, from 1 January 2012 to 31 December 2019, and information was available on 6755 patients...

Adult patients (≥ 18 years) with T2DM were included. If a patient was admitted more than once during the study period, data pertinent to the last admission were extracted to obtain the most recent information on health conditions...

We have now added the following information in the manuscript:

Since it was a real-time database, new patients were added continuously.

In Ningbo, the diabetes-related mortality is 14.5 per 100,000 population.[reference]

3. Although not directly targeted by this study, the effect of complications of DM2 type 2 and possible cardiovascular events (ictus, MI, and others) is not analysed, which would not strictly be comorbidities but consequences. See Sancho-Mestre C, Vivas-Consuelo D, Alvis-Estrada L, Romero M, Usó-Talamantes R, Caballer-Tarazona V. Pharmaceutical cost and multimorbidity with type 2 diabetes mellitus using electronic health record data. *BMC Health Serv Res.* 2016;16(1):394. Published 2016 Aug 17. doi:10.1186/s12913-016-1649-2

Response: Thank you for your feedback. We have now amended the manuscript based on the feedback from the other reviewer – we have now used the term comorbidity.

Macrovascular complications are included but not microvascular complications. We have amended the following text for clarity:

The index condition was T2DM. Comorbidity was defined as the co-existence at least one other chronic condition, i.e., either a physical non-communicable disease (duration ≥ 3 months), a mental health condition (duration ≥ 3 months), or an infectious disease (duration ≥ 3 months).[references] T2DM-specific complications (i.e., microvascular complications such as diabetic retinopathy, nephropathy, and neuropathy/foot) were excluded as these were consequences of the index condition; hence, they were not considered as comorbidities.[references]

4. In Figure 1 it would be interesting to consider the age effect, how many co-morbidities are presented in each age range, or in each age as a continuous variable. The age range of 60+ is obviously very numerous. It should be subdivided into 60-69 and 70+.

Response: Based on your suggestion, we have added another graph (figure 2) and used the suggested categories for age.

Figure 1. Number of comorbidities in our study.

Figure 2. Number of comorbidities in our study in the different age groups.

Figure 2 shows the number of comorbidities in our study in the different age groups. In the ≥ 70 years age group, 68.5% (1247) had ≥ 3 comorbidities, whereas the prevalences were only 33.1% (102), 43.5% (592) and 55.5% (715) in the 18-39, 40-59, and 60-69 years age groups, respectively.

Table 2. Characteristics of the study participants.

Table 3. Multiple backward stepwise logistic regression analysis for determining factors independently associated with comorbidity.

... The odds of comorbidities increased with the age of patients (18-39 years: 1; 40-59 years: OR 2.80, 95% CI 1.98-3.96; 60-69 years: 4.43, 3.04-6.44; and ≥ 70 years: 10.97, 7.17-16.77). The odds were lower in female patients (0.66, 0.51-0.84), patients residing in rural areas (0.75, 0.59-0.95), and patients without health insurance (0.62, 0.46-0.83). The odds were higher in single/divorced/widowed patients compared to married patients (1.95, 1.21-3.12) ...

Abstract

Results ... The odds of comorbidities increased with the age of patients (18-39 years: 1; 40-59 years: odds ratio 2.80, 95% confidence interval 1.98-3.96; 60-69 years: 4.43, 3.04-6.44; and ≥ 70 years: 10.97, 7.17-16.77). The odds were lower in female patients (0.66, 0.51-0.84), patients residing in rural areas (0.75, 0.59-0.95) and patients without health insurance (0.62, 0.46-0.83). The odds were higher in single/divorced/widowed patients compared to those in married patients (1.95, 1.21-3.12).

5. Only 6% of patients do not have multimorbidity. This seems a very low percentage and produces an asymmetry with those patients considered to be multimorbid.

Response: We agree with your point. This is the reason we have mentioned the following in the discussion (under strengths and weaknesses):

The findings of our hospital-based study could be valid in similar populations and settings. We suggest conducting a population-based study that might show a distinct picture of the issue.

We have now amended the text for clarity:

In our study, the high prevalence of comorbidity could be due to the study setting (i.e., hospital). The findings of our hospital-based study could be valid in similar settings. We suggest conducting a population-based study that might provide a distinct picture of the issue in Ningbo.

6. The criterion for multimorbidity could be made more accurate by making clusters of patients depending on the type or number of co-adjuvant clinical conditions. Strictly speaking a patient with HTA and DM2, for example, would not be multimorbid. Nor would a patient with sleep disorders and DM2.

See: Fortin M, Stewart M, Poitras ME, Almirall J, Maddocks H. A systematic review of prevalence

studies on multimorbidity: toward a more uniform methodology. *Ann Fam Med*. 2012;10(2):142-51. doi:10.1370/afm.1337.

Other studies considered multimorbidity prevalence 3+ chronic conditions. Basham CA. Regional variation in multimorbidity prevalence in British Columbia, Canada: a cross-sectional analysis of Canadian Community Health Survey data, 2015/16. Variations régionales de prévalence de la multimorbidité en Colombie-Britannique (Canada) : analyse transversale des données de l'Enquête sur la santé dans les collectivités canadiennes de 2015-2016. *Health Promot Chronic Dis Prev Can*. 2020;40(7-8):225-234. doi:10.24095/hpcdp.40.7/8.02

Response: Thank you for your feedback. We have now amended the manuscript based on the feedback from the other reviewer – we have now used the term comorbidity. We have used a recommended definition of comorbidity.

In addition, we have amended the following text:

The index condition was T2DM. Comorbidity was defined as the co-existence of at least one other chronic condition, i.e., either a physical non-communicable disease (duration \geq 3 months), a mental health condition (duration \geq 3 months), or an infectious disease (duration \geq 3 months).[references] T2DM-specific complications (i.e., microvascular complications, such as diabetic retinopathy, nephropathy and neuropathy/foot) were excluded as these were consequences of the index condition; hence, they were not be considered as comorbidities.[references]

In addition, we have provided the most common comorbidities in Table 1.

7. Another issue is the degree of control of DM2; as the study is carried out over several years, what is the control criterion? Mean value of HbA1c tests?.

Response: As suggested, we have added the following information in the manuscript:

In China, the recommended HbA1c treatment target did not change over the study period ($<7\%$ for most patients with T2DM).[references]

The mean (\pm SD) HbA1c level was 9.2% ($\pm 2.4\%$).

In my opinion, the article requires significant improvements to be published.

Response: Thank you very much for reviewing the manuscript. We have now amended the manuscript.

Reviewer: 2

Reviewer Name: Jeannine Uwimana Nicol

Please leave your comments for the authors below

Congratulation to the author team for conducting a study on a very important topic and relevant in enhancing the prevention and management of chronic diseases. The manuscript is written in an acceptable manner but will require a professional English editor to improve the readership. Also, the definition of multimorbidity needs to be revised to fit the WHO and the literature. Multimorbidity refers to the presence of two or more chronic conditions. Please refer to the WHO website. Hence, will suggest to rather use comorbidity in T2DM. The source of the data used has some flaws, it could have been supplemented by other forms of data collection. I have provided some few comments for the authors team to look at to strengthen the manuscript (please see attachment).

Response: Thank you very much for reviewing our manuscript and appreciating our work. Please see below our point by point response.

Strengths and limitations of the study

Page 6 _Line 33: Our study had the usual routinely collected data issues as an existing medical records database was used – its main purpose is medical management and not research. This is not a valid reason for poor quality data. The research team should have ensured that the routine data as source of data collection to Response the research questions. Was no any other source of data that

could have supplemented to the routine data?

Response: Thank you for highlighting this issue. The data quality was good (please see below). We tried to highlight the potential limitations of routinely collected data, which we have now amended for clarity. There is no supplementary data source.

We have already mentioned the following in the manuscript:

... Data were entered by the medico-nursing team and an independent group of the hospital staff was responsible for assessing the quality of the data and overall database management. All the conditions were coded using the International Classification of Diseases, 10th edition (ICD-10)...

... All the conditions were coded using the International Classification of Diseases, 10th edition (ICD-10) in our database, and we included all the chronic conditions in our study. This also minimised the possibility of recall bias in our study. Our study had extremely low missing data and the multiple logistic regression analysis included a sample with missing data for the adjusted variable...

We have now amended/added the following information in the discussion:

Our study had extremely low missing data; only HbA1c data were missing in 130 patients out of 4777 (i.e., 2.7%).

We have also amended the following sentence in the discussion:

Initially: Our study had the usual routinely collected data issues as an existing medical records database was used – its main purpose is medical management and not research.

Amended version: The quality of our routinely collected data was good.

Pg5- line 9: One such non-communicable disease is type 2 diabetes (T2DM), a complex metabolic disorder... this needs to be rephrased. It could read 'One of the most prevalent NCDs is type 2 diabetes...'

Response: As suggested, we have amended the sentence.

Initially: One such non-communicable disease is type 2 diabetes (T2DM), a complex metabolic disorder.

Amended version: One of the most prevalent non-communicable diseases is type 2 diabetes (T2DM). T2DM is a chronic complex metabolic disorder.

Pg5 – line 15:T2DM is rarely presented in isolation and is accompanied by other chronic conditions...' would suggest to rephrase: T2DM is rarely represented in isolation and accompanied by other chronic conditions'

Response: As suggested, we have amended the sentence.

Initially: In real-life, T2DM is rarely presented in isolation and is accompanied by other chronic conditions.

Amended version: In real life, T2DM is rarely presented in isolation and is always accompanied by comorbidity.[references]

Pg7- line 10-15 : 'Multi-morbidity was defined as having T2DM and at least one other chronic condition.....' to my knowledge multi-morbidity is define as a presence of more than two chronic conditions. Please refer to Multi-morbidity – Technical Series of Safer Primary Healthcare. <https://apps.who.int/iris/bitstream/handle/10665/252275/9789241511650-eng.pdf?sequence=1> Given that the definition of multi-morbidity and criteria used for inclusion of study respondents are not in line with international standard, I would suggest that the team revised their objective and title to Comorbidity fits the definition used for this study.

Response: Thank you for your feedback. We have now amended the manuscript based on your feedback– we have now used the term comorbidity.

In addition, we have amended the following text:

The index condition was T2DM. Comorbidity was defined as the co-existence of at least one other

chronic condition, i.e., either a physical non-communicable disease (duration ≥ 3 months), a mental health condition (duration ≥ 3 months), or an infectious disease (duration ≥ 3 months).[references]
T2DM-specific complications (i.e., microvascular complications, such as diabetic retinopathy, nephropathy, and neuropathy/foot) were excluded as these were consequences of the index condition; hence, they were not considered as comorbidities.[references]

Pg7 – line 27: Section on Ethics is very short and actually doesn't provide any useful information regarding the ethical clearance consideration. Would suggest the authors to expand on this section.
Response: As suggested, we have amended this section.

Initially: The Research Ethics Committee of Ningbo First Hospital, China approved the study (2020-R106).

Amended version: The Research Ethics Committee of the Ningbo First Hospital, China, approved this study (2020-R106). The researchers had no access to information that could identify individual patients during the data analyses. No informed consent was required as per research ethics rules.

Do the results address the research question or objective?

The results do address the research objectives in part. It could have been better to use additional means for data collection given that the authors identified the short fall of the routine data system. The data has quite a considerable number of missing data.

Response: The data quality was good (please see below). We tried to highlight the potential limitations of routinely collected data, which we have now amended for clarity. There is no supplementary data source.

We have already mentioned the following in the manuscript:

... Data were entered by the medico-nursing team and an independent group of the hospital staff was responsible for assessing the quality of the data and overall database management. All the conditions were coded using the International Classification of Diseases, 10th edition (ICD-10)...

... All the conditions were coded using the International Classification of Diseases, 10th edition (ICD-10) in our database, and we included all the chronic conditions in our study. This also minimised the possibility of recall bias in our study. Our study had extremely low missing data and the multiple logistic regression analysis included a sample with missing data for the adjusted variable...

We have now amended/added the following information in the discussion:

Our study had extremely low missing data - only HbA1c data were missing on 130 patients out of 4777 (i.e., 2.7%).

We have also amended the following sentence in the discussion:

Initially: Our study had the usual routinely collected data issues as an existing medical records database was used – its main purpose is medical management and not research.

Amended version: The quality of our routinely collected data was good.

Are Results presented clearly?

The results are well presented. However, need quite professional editing for good readership.

Response: One of the co-first authors is a native English speaker and is an academic in the UK. Having said that, the manuscript has now been copyedited using a professional language editing service.

Are the discussion and conclusions justified by the results?

The discussion and conclusion are justified by the results. However, would be great to have key main findings linked to current literature and evidence. Some of the discussion are out of the objectives of this study parameters.

Response: We agree with you. As suggested, we have amended the discussion part and made it coherent with the study objectives/main findings.

VERSION 2 – REVIEW

REVIEWER	Jeannine Uwimana Nicol Global Health Department, Faculty of Medicine and Health Sciences, Stellenbosch University Cape Town, South Africa
REVIEW RETURNED	11-Nov-2020

GENERAL COMMENTS	<p>Pg 32 - line 33-39:" A systematic review and meta-analysis of the prevalence synthesising the prevalence and the associated factors associated with comorbidities in patients with T2DM patients in different geographical locations will be helpful." what does mean? Are you suggesting to conduct a systematic review? There are a number of evidence syntheses studies conducted on the above subject. eg. Pheiffer C, Pillay-van Wyk V, Joubert JD, Levitt N, Nglazi MD, Bradshaw D. The prevalence of type 2 diabetes in South Africa: a systematic review protocol. <i>BMJ Open</i>. 2018;8(7):e021029. Published 2018 Jul 11. doi:10.1136/bmjopen-2017-021029</p> <p>ssaka, A., Paradies, Y. & Stevenson, C. Modifiable and emerging risk factors for type 2 diabetes in Africa: a systematic review and meta-analysis protocol. <i>Syst Rev</i> 7, 139 (2018). https://doi.org/10.1186/s13643-018-0801-y</p> <p>Results- Table 1 - Prevalent comorbidities in patients T2DM has no HIV, TB, and mental health/conditions listed as comorbidities. What could be the reason? the evidence in the literature shows HIV, TB, and Mental illness as common comorbidities among patients with T2DM.</p> <p>Figure 2: Number of comorbidities in our study in the different age groups. The figure does not show the age groups. Also the use of absolute numbers less meaning. suggest using the percentage/proportion of ppl reported having the number of comorbidities.</p>
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VERSION 2 – AUTHOR RESPONSE

Reviewer: 2

Reviewer Name: Jeannine Uwimana Nicol

Institution and Country: Global Health Department,

Faculty of Medicine and Health Sciences,

Stellenbosch University

Cape Town, South Africa

Please state any competing interests or state 'None declared': None

Comments to the Author

Pg 32 - line 33-39:" A systematic review and meta-analysis of the prevalence synthesising the prevalence and the associated factors associated with comorbidities in patients with T2DM patients in different geographical locations will be helpful." what does mean? Are you suggesting to conduct a systematic review? There are a number of evidence syntheses studies conducted on the above

subject. eg. Pheiffer C, Pillay-van Wyk V, Joubert JD, Levitt N, Nglazi MD, Bradshaw D. The prevalence of type 2 diabetes in South Africa: a systematic review protocol. *BMJ Open*. 2018;8(7):e021029. Published 2018 Jul 11. doi:10.1136/bmjopen-2017-021029

ssaka, A., Paradies, Y. & Stevenson, C. Modifiable and emerging risk factors for type 2 diabetes in Africa: a systematic review and meta-analysis protocol. *Syst Rev* 7, 139 (2018). <https://doi.org/10.1186/s13643-018-0801-y>

Response: Thank you for reviewing the manuscript. We have mentioned that a systematic review and meta-analysis of the prevalence and the factors associated with comorbidities in patients with T2DM in different geographical locations should be conducted, as the focus of this piece of work is “comorbidities in T2DM”. We are not suggesting conducting a systematic review on the prevalence of T2DM or its risk factors, as there are existing systematic reviews on this topic, as highlighted by you. Having said that, we have amended the sentence for clarity-

“A systematic review and meta-analysis of the prevalence of comorbidities in patients with T2DM in different geographical locations and the factors associated with it will be helpful”.

Results- Table 1 - Prevalent comorbidities in patients T2DM has no HIV, TB, and mental health/conditions listed as comorbidities. What could be the reason? the evidence in the literature shows HIV, TB, and Mental illness as common comorbidities among patients with T2DM.

Response: Thanks for your comment. We have now highlighted this fact in the discussion.

Although human immunodeficiency virus (HIV) infection, tuberculosis (TB) and mental health conditions are common comorbidities in patients with T2DM, these were not the most common comorbidities in this study. The prevalences of these infectious diseases are low in Ningbo, and there are chances that mental health conditions were underreported. It should also be noted that infectious diseases and mental health conditions as index conditions are treated in other specialised hospitals in Ningbo.

Figure 2: Number of comorbidities in our study in the different age groups. The figure does not show the age groups. Also the use of absolute numbers less meaning. suggest using the percentage/proportion of ppl reported having the number of comorbidities.

Response: Thanks for your feedback. We have now included the percentage, as suggested. The figure is showing the age groups: 18-39 years, 40-59, 60-69 and 70 or above (please see the x-axis). Figure 2 shows the percentage of comorbidities in our study in the different age groups.