Author’s response to reviews

Title: Socially isolated individuals are more prone to have newly diagnosed and prevalent type 2 diabetes mellitus - The Maastricht Study -

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Author’s response to reviews:

Dear Dr. Tamayo,

Thank you for giving us the opportunity to revise our manuscript.

Please find our point-by-point reply below.

We hope that our comments are satisfactory and that the paper is now acceptable for publication in BMC Public Health.
Sincerely,

On behalf of all co-authors,

Miranda Schram and Stephanie Brinkhues

Reviewer reports:

Eirik Abildsnes, M.D, Ph.D. (Reviewer 1):

Dear authors

In the revised manuscript the authors have responded adequately to comments and suggestions from the reviewers. I recommend that the manuscript is accepted for publication.

We thank Dr. Abildsnes for his recommendation.

Sara Pedron (Reviewer 2): The authors reviewed the manuscript accurately for almost all critical points. All major revisions were accurately taken into account. Nonetheless some minor issues should be further addressed:

1. Major revision number 2: the authors should change the notation "T2DM" to "previously diagnosed T2DM" also in Table 3.

We apologize that we have missed to change the notation of “T2DM” to “previously diagnosed T2DM” in table 3 in the previous revision. We have changed the notation in the manuscript.

2. Authors should revise the results paragraph since some of the coefficients are not accurately reported as they are stated in table 3.

Thank you for pointing this out. We revised the results paragraph and double checked all coefficients in the table and the text body.

3. Minor essential revision number 2: the authors included a table with all variables and their brief definitions. By suggesting its inclusion I was mainly aiming at (a) Including a more detailed explication of those variables which were defined in this context by the authors, such as structural and functional characteristics of the social network and educational level (since it is not based on an international classification, known at a glance also to the international reader); (b) Making the text more fluent. By including Table 1 as suggested by the authors in this second
version of this manuscript, these aims are only partly fulfilled, while also adding additional critical issues. My suggestions on this point are:

3.1 The definition of all General Measurements variables in Table 1 is superfluous, since the measurement unit and possible outcomes are listed in Table 2. The only variable for which the reader needs an explication (furnished by the authors in both versions of the manuscript) is educational level. I would suggest the authors to eliminate from the table all these variables and to include the definition of educational levels at the bottom of Table 2 or with a footnote in the text.

Thank you for this suggestion. We have removed the general variables from table 1 and included the definition of educational level on the bottom of table 2.

3.2 Table 1 (without the General Measurements) should be carefully and critically revised. Authors might also consider including it in the appendix as supplementary material, if they do not find it necessary in the text body. In the table, name of the variable, unit of measurement and definition should be consistently reported. Despite the presence of the table, all variables regarding functional support must still be named in the text, in a way which does not impair text fluency. The table should be named ate the end of both par. 2.2.3 and 2.2.4 as an additional and thorough information background for the reader.

Thank you for this suggestion. We have revised table 1 as suggested by the reviewer, and included all functional support variables in the text (lines 131-133). Moreover, we named table 1 at the end of par. 2.2.3 and 2.2.4 as additional information (lines 127-128, 135-137).

3.3 Par. 2.2.4: What the reader is missing at this point, is how the score 0-5 is computed. Authors should include a detailed account (in the text or, in case the computation is complex, in the appendix, close to the table) on how this score is computed. This is not a trivial point: the reader should be able to associate to a "one unit less" emotional support something more concrete.

Thank you for this suggestion. We included a detailed description on the functional support characteristics in lines 133-135.

Participants were asked to indicate the number of members who provided informational support, emotional support related to discomfort, emotional support related to important decisions, practical support related to jobs, and practical support related to sickness. For every type of support, participants could name a maximum of 5 network members. This results in a possible range of 0 to 5 for the functional characteristics of the social network.

3.4 Last but not least: authors included a definition of socially isolated individuals (Table 1, Network size). Authors should quantify what they assumed as a "smaller social network size" for the definition of socially isolated individuals.
Thank you for this suggestion. We would like to argue that we measured social network characteristics on a continuous scale, therefore, we consider social network size as a relative size. We do not aim to define social isolation, but aim to report on observed differences between groups with and without (pre-)diabetes. To accurately use the term social isolation based on a smaller social network size, we quantified those with a smaller social network size as “more socially isolated” throughout the manuscript (lines 14, 242, 343, 348, 362, 371, table 1)

4. Figure 2: authors should consider changing the scale from 0.10 to 0.05.

Thank you for this suggestion. We have used a base-10 logarithmic scale to present the associations of the social network characteristics with diabetes status, therefore, the scale starts at 0.1. As the lowest Odds Ratio in our analysis was 0.59 (CI 0.24-1.44), changing the scale from 0.1 to 0.05 will not result in added value. However, as this appeared unclear we adjusted the figure caption to explain that the OR’s were presented on a logarithmic scale.

Fig.2 Associations of structural and functional characteristics of the social network with diabetes status stratified by sex, presented on a base-10 logarithmic scale

5. In Table 2, thank you for including italics titles. Authors should consider writing the different subpopulations in educational level, employment status, smoking status as separate rows, not as values separated by slash.

Thank you for this suggestion. We have included separate rows for the different subpopulations in educational level, employment status and smoking status, as suggested by the reviewer (table 2).

6. The authors should read critically and revise the language in the whole manuscript. Several spaces are included or missing: par. 2.2.4, 2.2.5, line 257). In addition, the authors should limit their use of parentheses to complement the text (e.g. par. 3.1: "Figure 1 shows (a simplified representation of) the social network size..."). Line 206: consider revising the whole phrase. Lines 317-321: consider dividing the phrases. Line 349: repetition. Line 363: "whom" should be substituted with "who".

Thank you for this suggestion. We have critically read and revised the manuscript as suggested by the reviewer. Moreover, we have limited the use of parentheses (e.g. line 38, 121, 154, 182, 200-202, 261, 268, 282).