Author's response to reviews

Title: Suicide death and non-fatal suicidal behaviour in asylum seekers in the Netherlands: a national registry-based study

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Author's response to reviews: see over
Dear Editor,

Thank you very much for the review of our paper 'Suicide mortality and non-fatal suicidal behaviour among asylum seekers in the Netherlands: a national registry-based study' and your clear suggestions for improvement. We are very happy that you are willing to reconsider our paper after revision. Below we will give you a point-by-point response to the concerns of the reviewers. Moreover, in the manuscript itself, we marked the revisions with 'track changes'.

**Reviewer 1**

1. The most concerning aspect of this study is that inferences are drawn about an ethnically heterogeneous group to suggest that suicidal behaviour is only modestly increased. As the authors point out but only in the discussion, suicidal behaviour in immigrants depends substantially on the country of origin. Hence, it is hard to argue that the overall figure derived can be compared with the population of the Netherlands without taking into account the base rates in the countries of origin. I am aware that this creates a major obstacle for the researchers since the numbers involved simply do not allow them to undertake such a subanalysis. But I do think that this confound needs to be stated much more boldly and clearly in the discussion. For example, the rates amongst African asylum seekers may be significantly higher than compatriots in the home countries (or indeed, amongst ordinary migrants from these nations), and therefore, in a sense, the comparison is only partly valid. One possible "solution" is for the authors to examine the rates of suicide in all the countries represented amongst asylum seekers and indicate, even if broadly, whether these rates are lower than in the Netherlands. If so, it would add to the general case that the rates amongst asylum seekers that they have found are significant.

We agree with the reviewer on the heterogeneity of the asylum population. We have better addressed the heterogeneity and are paying more attention to differences between the regions of origin. We have made changes in both the discussion and the conclusions to address these issues.

Whether the differences found between regions reflect suicide death and suicidal behaviour rates in countries of origin, cannot be concluded, as we had to group countries together and because suicide statistics for countries of origin were either unavailable or outdated.

In the revised version a better explanation of grouping of countries has been included in the methods section.
More could be said of the gender imbalance in rates of suicidal behaviour identified amongst asylum seekers. Are males under greater pressure as asylum seekers? For example, is more expected of males in relation to acting as the vanguard for other family members back at home to be successful in their asylum claims? Are males more likely to have been activists who are at particular risk of victimization if they are forcibly returned?"

We have added several hypotheses for the gender difference in the Interpretation of results paragraph.

The male to female ratio for the number of suicide deaths in this study (10:1), however, was higher than generally found (between 3:1 and 7.5:1) [5]. Various hypotheses can be formulated for this gender difference. The higher risk for males could be related to the lower use of mental health services. Additional explanations are that males are at greater risk if they are forced to return to their country of origin, the supposed higher pressure to succeed, more negative consequences of not being allowed to work and a higher prevalence of drug use [28,29]. Protective factors for women could be having children to care for and stronger social networks [29]. The gender differences for suicidal behaviour overall and between regions of origin are difficult to interpret as the gender difference paradox in suicidal behaviour is not constant across countries [30].

Minor Revisions
‘1. Given the small numbers, I am not persuaded that the breakdown by age is wise or very revealing.’

We agree that the small numbers do not allow firm conclusions about the age distribution of suicide mortality. However, in our view the differences between age groups give a first indication of age related risk differences. We would like to note that, despite the small numbers, some of the age difference can be demonstrated with (near) statistical significance. We also think that it is also important to provide the age group data as background information in the light of the standardisation of the data by age group.

Reviewer 2

Abstract

1.1 ‘The authors say: "Risk factors for suicide and suicidal behaviour are highly
prevalent among asylum Seekers are gigh” but let me asl: do we really know this: what are known risk factors for suicide?’ ‘Can we speak about "incidence of suicide and suicidal behavior”? The terminology should be revised.’

We agree that the terminology should be ‘The suicide mortality rate and suicidal behaviour incidence’ and have changed the manuscript accordingly. With respect to risk factors, see answer to 2.1.

1.2 ‘Authors speak about obtaining data about suicidal behavior? Is this really possible?’

We are aware of the difficulties with respect to the measurement of suicidal behaviour and the difficulty to distinguish between suicidal behaviour and self harm. This is a general limitation for suicidal behaviour epidemiology. We have addressed this general limitation in the methodology and discussion sections.

1.3 ‘Authors included 25 suicide deaths which is a very small number and does not allow regression analyses. Perhaps the methods can be revised to adapt methods to the very small number of cases? The conclusions should be made very cautiously!’

We have not applied regression analysis. We agree that the conclusions about suicide mortality should be made cautiously because of the small numbers and paid more attention to the formulation of conclusions that are acceptable in the light of these small numbers.

**Background**

2.1 Authors say: “Risk factors for suicide mortality and suicidal behaviour, such as stressful life events, family disruption, lack of social support, low income, previous traumatic experiences, depression and anxiety disorders, are highly prevalent among asylum seekers.[3,4,5,6,7]” Is it in reality true that this are stress factors for suicide? Perhaps authors can distinguish better between suicide and suicidal behaviour and include recent discussion o risk factors for suicides (which might be different from risk factors for suicidal behavior).

We agree with the reviewer that a more precise description of the literature with respect to risk factors is important. We have addressed this as follows:

Recent reviews quite clearly identify mental disorders, such as depression, schizophrenia, substance use disorder, personality disorder and comorbid anxiety disorder, as the most prominent risk factors for suicide [3,4,5]. Other risk factors for suicide are traumatic life events and psychosocial crisis [3]. The stress-
diathesis model for suicides, however, states that suicide is never the consequence of one single cause or stressor but also requires a predisposition for suicidal ideation, with psychiatric illness and psychosocial crises as proximal stressors [3]. This means that most people will not have suicide ideation, even in very difficult circumstances. Risk factors for non-fatal suicidal behaviour include the number of stressful life events, family disruption, lack of social support, low income, unemployment, previous traumatic experiences [5,6,7]. In people presenting with first-ever suicidal behaviours, the prevalence of psychiatric disorders may be rather low, whereas socio-economic deprivation (low education, low income, unemployment, poverty and divorce) is much more prevalent [6]. A recent general review showed a moderate association between post-traumatic stress disorder (PTSD) and suicidal ideation, but no evidence for a link between PTSD and completed suicide, although this may be partly due to the rarity of completed suicide in the studies that were reviewed [8]. Several of the suicide and suicidal behaviour risk factors are highly prevalent in asylum seekers [9,10,11,12,13].

2.2 Authors speak about “incidence of suicide mortality and non-fatal suicidal behavior” this is methodologically difficult: perhaps speaking about mortality and prevalence of “suicidal behavior” is more appropriate? What is meant be “suicidal behavior”: perhaps it would be helpful to give a definition? “Self harm” is something different from “suicidal behavior”: where are differences and commonalities?

We agree with the reviewer that the term incidence is not appropriate for mortality data. ‘Suicide mortality rate’ is more appropriate and we have changed the manuscript accordingly. In the scientific literature suicidal behaviour prevalence is mostly used for questionnaire-based self-reports of suicidal behaviour, suicidal behaviour incidence for studies based on data from registries and medical records that register new event occurring each year. As our study is registry-based we prefer to use ‘incidence’. The text is adjusted accordingly.

An exact case definition of suicidal behaviour cannot be given in this register based study as such definition was not in use. This is explained in the first paragraph of the methods section.

Making a distinction between ‘suicidal behaviour’ and ‘self-harm’ is always a very difficult. This is a general problem for research into suicidal behaviour. The available data are based on the interpretation by the health professionals, and do not allow a further distinction. Because of this methodological limitation and also to focus on most serious cases, we decided at the start of the study to include only the cases referred to hospital.
2.3 Perhaps authors can add recent knowledge on suicide additionally to providing knowledge on asylum seekers in the Netherlands? Perhaps authors can reduce the description of living situation of asylum seekers and strengthen description of knowledge on suicide / suicidal behavior?

We have deleted two sentences from the description of the situation of asylum seekers in the Netherlands that may contain too much detail. However, because of large differences between asylum host countries with respect to reception conditions and health care for asylum seekers and the possible influence of these conditions on the health of asylum seekers, we see the situational description as relevant context information.

We have added results and/or conclusions from several recent, relevant articles. The added references are marked with 'track changes'. For readability purposes we have not marked the detailed changes in reference numbering that had to be made due to the adding of these references.

Methods

3.1 The definition of suicidal behavior should be provided earlier.

See 2.2.

3.2 I cannot understand why countries of origin are grouped together, does this make sense? The history and the events might be very different – perhaps another algorithmus of grouping would be more appropriate?

The grouping of countries of origin is a consequence of the limited number of cases per country. We agree that differences exist between the countries grouped together. At the start of this study we concluded after a literature and web-search that no general classification system exists for this type of studies. We considered various grouping options, and concluded that since UNHCR is the UN-organisation in charge of Refugee issues, this may be an appropriate classification. In the discussion we now address this issue in more detail than in the previous version of the manuscript.

3.3 How is it possible to compare suicidal behavior of persons from den Haag as representative for the Netherlands?

We have used suicidal behaviour data from the Hague, as they are a good approximation of national estimates and as these were the only data that allowed detailed statistical comparison. We address the limitations of using data from the Hague in the discussion, where we state 'Comparison with data from other studies, especially for the suicidal behaviour rate, has to be done with caution because of differences in data sources. The use of suicidal behaviour reference data for the city of The Hague may
have influenced the results. The incidence rate in The Hague is 10-20% higher than estimates for the Netherlands.[15]

3.4 Statistical methods should be appropriate for very small numbers. Is the suicide mortality rate an indicator or a dependent variable? What is the denominator? What is the reference population?

The statistical methods used are accurate even with small numbers. For the suicide mortality rate comparisons, where the numbers are indeed very small due to the rarity of suicide, we used Byar’s approximation, which is accurate even with small numbers. We have improved the explanation of the indicator and rate ratio calculations in the Methods section.

Results
4.1 Authors report on a total of 35 suicide death cases, giving a suicide mortality rate of 17.5/100,000/year”, this is based on asylum seekers living in centres, right? Perhaps the number of suicide case is very small and the observation would need a longer time frame of observation to increase numbers? Another possibility could be to compare the results with suicides numbers from asylum seekers in other countries?

The data are indeed based on asylum seekers living in centres. We have clarified this in the methodology section. We agree that the power of the study would be higher if we could study a larger number of cases. However, waiting longer would mean that the information gap would exist longer and that policy attention for this health problem among asylum seekers would also come later. With respect to second suggestion, to our knowledge comparable data from other countries do not exist (denominator data are lacking in most countries). The current numbers permit in our view sufficient analysis to draw meaningful conclusions for policy-making. We have stated more clearly in the abstract and discussion that the limited number of cases should be taken into account when interpreting the results.

Discussion
5.1 The discussion should be done very cautiously; is it in reality possible to say “Male asylum seekers have higher suicide mortality and suicidal behaviour rates than Dutch males... important differences in suicide mortality and suicidal behavior rates were seen between subgroups by sex, age and region of origin.” Caution should be applied.

See 4.1

5.2 What are “mental health” problems? Can authors provide information about potential bias in reporting and in discovering mental health problems? Can authors provide a definition of what is meant by “mental health problems”?
We have added a clearer description on the stressors and the mental health problems in the methods section and address the limitations of these variables in the discussion.

5.3 Overall: the authors report on a very important topic but a longer period of observation is highly needed to increase numbers. The statistical methods in this study may be revised and the information provided on knowledge on factors associated with suicide might be strengthened. A more detailed study on this topic is highly needed.

See 4.1 for our reply with respect to the observation period. We have also added to the discussion that more quantitative and qualitative studies on this topic are required.

Editors

1. Statistics - Please address the referee 2’s comments regarding the statistics within your manuscript.

   See above.

2. Copyedit - Further consideration of your manuscript is conditional on improvement of the English used.

   The revised manuscript has been edited by a native speaker. Changes made by the editor have also been marked with ‘track changes’.

3. Data availability - Please document within your manuscript if the data you have used is openly available. If it is not openly available, please document the name of the ethics committee which approved its use.

We have included the following statement in the paper.

Ethics Committee approval was not necessary as only anonymous data were used that were collected in the light of regular health service provision. The use of anonymous data for epidemiological studies is, in line with the medical ethical standards in the Netherlands, included in the privacy statement of MOA.
Yours sincerely,

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