## 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

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| **TITLE (PROVISIONAL)** | Discussing suicidality with depressed patients: an observational study in Dutch sentinel general practices |
| **AUTHORS** | Elzinga, Elke; Gilissen, Renske; Donker, G; Beekman, Aartjan; de Beurs, Derek |

## VERSION 1 - REVIEW

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| **REVIEWER** | Gregory Simon<br>Kaiser Permanente Washington Health Research Institute USA |
| **REVIEW RETURNED** | 26-Nov-2018 |

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| **GENERAL COMMENTS** | The topic is certainly of interest to a broad audience of primary care and mental health clinicians and clinical leaders. The methods of the parent study are sound, and the presentation is generally clear. I have a few specific questions regarding the presentation.<br><br>1) Given that the multi-level model indicates meaningful clustering of the primary outcome (exploring suicidality) within PCPs, the primary analysis of patient-level predictors (logistic model results in middle of page 6) should include a random effect for PCP.<br><br>2) The intraclass correlation coefficient will not have much meaning to most readers. It would be more informative to provide concrete indicators of variation. For example: report the proportion of visits in which suicidality was explored by a physician at the 25th and 75th percentiles (or 10th and 90th percentiles) of the random effects distribution. This presentation would also allow presentation of PCP clustering to account for patient characteristics (i.e. rates at 25th and 75th percentiles of the random effects distribution from a model also accounting for patient characteristics).<br><br>3) The abstract should make clear that data were collected by surveying physicians.<br><br>4) The language used to describe patient characteristics (especially pages 6-7) should be more careful to clarify that patients were never assessed directly. For example, PCPs reported that patients reported suicidal feelings multiple times per day. |

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| **REVIEWER** | Gerard Leavey<br>Bamford Centre for Mental Health & Wellbeing Ulster University Northern Ireland |
| **REVIEW RETURNED** | 02-Dec-2018 |

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| **GENERAL COMMENTS** | An excellent, well-written paper on an important area i.e. factors that influence general practice examination of patient suicidality. The finding that there is a bias towards age and male gender resonates with findings from our own study in Northern Ireland. The limitations have been properly discussed. It is unfortunate that there are limited explanatory factors (e.g. social class, marital status). Nevertheless, a welcome addition to the evidence base. |

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| **REVIEWER** | YOUNES Nadia<br>University Versailles Saint Quentin (EA 4047) Versailles Hospital (Academic unit of psychiatry and addictology) |
| **REVIEW RETURNED** | 11-Jan-2019 |

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| **GENERAL COMMENTS** | Minor Revisions Needed<br><br>Manuscript number: bmjopen-2018-027624<br><br>The manuscript reports an interesting observational study on suicide exploration among patients in primary care diagnosed as depressed, from the Network of Dutch sentinel 39 GP practices.<br><br>Some remarks can be formulated.<br><br>Introduction<br>The context should be developed, in an international view and not only from Dutch studies. References should be added in the second paragraph (every sentence) and in the third (studies describing that at least half of the suicided patients and two thirds of the suicide attempted patients visited a GP in the preceding months (Houston K et al., 2003, Br J Gen Pract)(Raue PJ et al., 2006, J Fam Pract)(De Leo D 2013 Compr psychiatry). I would expect range of the rate of suicide exploration among patients in primary care from previous studies (some were reported in the discussion. Add Verger P, 2007, J Aff Dis: an interesting study which reported patients and GP's evaluation)<br>I miss also a paragraph highlighting the pertinence of primary care setting for the treatment of common mental health and depression<br><br>Methods<br>Clearly presented and adapted.<br>Number of patients should be added in titles of tables 1, 2, 3, 5<br><br>Discussion<br>Some changes would be welcome<br>Results should be discussed in regard to the rate of suicide exploration among patients in primary care from previous studies presented in the introduction. The insufficient rate (33% in case of new episode of depression and 66% in case of existing episode of depression) should be highlighted. The main reason (they "feel" |

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| | the patient would not be suicidal) is worrying, contrary to Suicidal tools and discussed further.<br>Note that the study conducted by Bocquier A and al among a French panel of GPs (and not from a French Sentinel Network). A French Sentinel general practice Network, whose GP continually report on an unpaid volunteer basis the occurrence of health related events, including suicide attempts exists also.<br>Limitations: the study should be completed by studies conducted among patients |

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| **REVIEWER** | Peter M. Gutierrez, PhD<br>Department of Veterans Affairs Rocky Mountain Mental Illness Research, Education and Clinical Center. University of Colorado School of Medicine. United States |
| **REVIEW RETURNED** | 15-Jan-2019 |

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| **GENERAL COMMENTS** | The authors sought to determine the extent to which GPs in the Netherlands routinely assess patients presenting with depression for suicide risk. The introduction clearly frames the extent of the problem and rationale for conducting the study. The study hypotheses are well supported by the current suicide literature. The study methods are appropriate to creating a representative sample of GPs in the Netherlands and the patients they treat. The interpretation of the results presented in the Discussion is clear and well supported. The study limitations discussed are appropriate.<br><br>Specific suggestions for improving the presentation follow in order of appearance in the manuscript. Please include specific reference to any ethics review and/or human subjects use approvals for the study. On page 5, line 39 please spell out "MHN" as I believe this is the first place the acronym appears. In Table 1 please add a note explaining to what "*" and "**" refer. Also, please explain why the gender percentages total to 91.2 and not 100. The explanation for calculating the patient's severity of suicidality on page 8 starting on line 32 is clear. However, it would be enhanced by including references to the theories/research behind why the factors listed in Table 4 are assessed. In the Discussion it is noted at the top of page 11 that a reason given for not exploring suicidal feelings is "because the patient had already indicated not being suicidal in an early consultation". It appears that these GPs may not be aware of the transient nature of thoughts about suicide and the importance of regularly assessing thoughts/feelings about suicide in those deemed to be at some level of risk. In making recommendations about GP continuing education, this is a point that could be highlighted. |

## VERSION 1 – AUTHOR RESPONSE

Reviewer(s) Reports:

Reviewer: 1

Reviewer Name: Gregory Simon

Institution and Country: Kaiser Permanente Washington Health Research Institute USA Please state any competing interests or state 'None declared': None

Please leave your comments for the authors below The topic is certainly of interest to a broad audience of primary care and mental health clinicians and clinical leaders. The methods of the parent study are sound, and the presentation is generally clear. I have a few specific questions regarding the presentation.

1) Given that the multi-level model indicates meaningful clustering of the primary outcome (exploring suicidality) within PCPs, the primary analysis of patient-level predictors (logistic model results in middle of page 6) should include a random effect for PCP.

We agree and added a random intercept for PCP in this analysis. Related method- and results sections were changed.

Methods (page 5, line 11-16):

Multilevel multiple logistic regression was applied to determine whether age, gender, new episodes of depressive disorder were related to the primary outcome measure (GPs' suicide exploration) or patients' suicidal ideation. To control for the influence of GP practice a random intercept for GP practice was added to the model. Multilevel analyses were done using the R package lme4.[32] The intraclass correlation coefficient (ICC) was calculated at practice level to estimate variation between practices using the R package sjstats.[33]

Results (page 6, line 17-20):

Multilevel analysis indicated that GPs explored suicidal feelings more often in patients presenting a new episode of depression (OR 4.027, $p < .001$, 95% CI [2.924, 5.588]) or male patients (OR 1.709, $p < .001$, 95% CI [1.256, 2.330]). Every year a patient was younger, the odds ratio of being asked about suicidal feelings increased with 1.017 ($p <.001$, 95% CI [1.009, 1.026]).

2) The intraclass correlation coefficient will not have much meaning to most readers. It would be more informative to provide concrete indicators of variation. For example: report the proportion of visits in which suicidality was explored by a physician at the 25th and 75th percentiles (or 10th and 90th percentiles) of the random effects distribution. This presentation would also allow presentation of PCP clustering to account for patient characteristics (i.e. rates at 25th and 75th percentiles of the random effects distribution from a model also accounting for patient characteristics).

We thank the reviewer for the comment and added the following text in the result- and discussion section:

Results (page 6, line 20-23)

The proportion of variance explained by general practice (the intraclass coefficient (ICC)) was 22%. The proportion of encounters during which GPs explored suicidal ideation at the 25th and 75th percentiles are respectively 24.4% and 51.3%. For patients with a new episode of depression these proportions are respectively 39.2% and 69.2%.

Discussion (page 9, line 28-29)

General practitioners in the lowest quartile only asked for suicide ideation in up to a quarter of the depressed patients.

3) The abstract should make clear that data were collected by surveying physicians.

We have added it to the abstract (page 2 line 8-10):

Secondary outcomes measures at patient level, assessed by surveying GPs, include prevalence and severity of suicidal thoughts. Secondary outcome measures at GP level include follow up actions of GP and reasons not to explore suicidality.

4) The language used to describe patient characteristics (especially pages 6-7) should be more careful to clarify that patients were never assessed directly. For example, PCPs reported that patients reported suicidal feelings multiple times per day.

We agree and changed this in the abstract (see above), results and conclusion.

Results (page 6, line 6,7 and 10)

During 2017, the sentinel GPs registered 1104 consultations with patients with depression. They completed questionnaires concerning 1081 (98%) of these consultations. Of these, 37 (3.4%) were excluded because they did not refer to a face-to-face encounter between the GP and the patient. The remaining 1034 questionnaires were included in the analyses. The mean number of completed questionnaires per practice was 26.5, varying from 2 to 119 completed questionnaires per practice. GPs reported that one-third of the patients (342) presented with a new episode of depressive disorder during the consultation, the other 692 (66.9%) patients had an existing episode.

Results (page 7, line 15-16)

GPs described that 174 (38.2%) of the 455 patients in whom they explored suicidality, reported suicidal feelings (see table 3).

Conclusion (page 12, line 30-31)

GPs described that patients in whom they have explored suicidal feelings, reported high rates (38%) of suicidal feelings, of which almost a quarter had concrete plans of ending their life.

Reviewer: 2

Reviewer Name: Gerard Leavey

Institution and Country: Bamford Centre for Mental Health & Wellbeing Ulster University Northern Ireland Please state any competing interests or state 'None declared': No competing interests

Please leave your comments for the authors below An excellent, well-written paper on an important area i.e. factors that influence general practice examination of patient suicidality. The finding that there is a bias towards age and male gender resonates with findings from our own study in Northern Ireland. The limitations have been properly discussed. It is unfortunate that there are limited explanatory factors (e.g. social class, marital status). Nevertheless, a welcome addition to the evidence base.

We thank the reviewer for this comment.

Reviewer: 3

Reviewer Name: YOUNES Nadia

Institution and Country: University Versailles Saint Quentin (EA 4047) Versailles Hospital (Academic unit of psychiatry and addictology) Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below Minor Revisions Needed

Manuscript number: bmjopen-2018-027624

The manuscript reports an interesting observational study on suicide exploration among patients in primary care diagnosed as depressed, from the Network of Dutch sentinel 39 GP practices.

Some remarks can be formulated.

We thank the reviewer for the remarks. We address the specific suggestions below, section by section.

Introduction

The context should be developed, in an international view and not only from Dutch studies. References should be added in the second paragraph (every sentence) and in the third (studies describing that at least half of the suicided patients and two thirds of the suicide attempted patients visited a GP in the preceding months (Houston K et al., 2003, Br J Gen Pract)(Raue PJ et al., 2006, J Fam Pract)(De Leo D 2013 Compr psychiatry). I would expect range of the rate of suicide exploration among patients in primary care from previous studies (some were reported in the discussion. Add Verger P, 2007, J Aff Dis: an interesting study which reported patients and GP's evaluation). I miss also a paragraph highlighting the pertinence of primary care setting for the treatment of common mental health and depression

We have changed the introduction so that it has a more international scope, added the references that were proposed and added the rate of suicide exploration among primary care patients form previous studies.

Introduction (page 3 line 8 to page 4 line 4):

GPs play a central role in the recognition and management of patients with suicide ideation. In many countries, GPs are patients' first point of contact with the healthcare system and therefore capable of signalling suicide ideation at an early stage. Once recognized, they also function as a gatekeeper to more specialised care. GPs can either decide to treat a patient in primary care or refer the patient to mental health care services.[5] Since early identification and treatment of suicidal ideation may prevent suicidal behaviour,[6] GPs are the focus of many suicide prevention strategies.[7,8].

Many persons are in contact with the healthcare system prior to their suicide or suicide attempt.[9–15] An international review showed that patients were more likely to contact primary care services than mental health services: approximately one-fifth of patients was in contact with mental health services and half of the patients was in contact with primary care services within one month of their suicide.[10] Another study reported that about one-third of patients are in contact with primary care services alone.[9] In the Netherlands, 42% of patients who died as a result of suicide was treated by mental health services[16] and 48% was in contact with primary care services prior to fatal or near fatal suicide behaviour.[11]

Even though contact with primary care services prior to suicide or suicide attempt is common, recognition of suicide ideation remains difficult. Pearson et al.[14] found that 27% of GPs were concerned for their patients safety prior to their suicide and Dutch GPs identified patients' imminent risk for suicide in only 31% of patients who later engaged in fatal or near fatal suicide behaviour.[11] There can be different reasons why these recognition rates are low: risk factors may not be distinctive enough and GPs might avoid discussing suicidal ideation with patients as they find it a difficult topic to adress.[17]

Previous studies[11,18–21] have established the strong relation between suicide and depression. Assessing suicide ideation in patients with depression may be worthwhile: where suicide ideation in the general primary care population is estimated at 1-10%,[17] among depressed patients it is considerably higher (54%).[21] Various international clinical guidelines for depression or suicide prevention[6,22–24] therefore recommend to screen and monitor suicide risk in all patients diagnosed with depression.

A previous French study[25] on GPs' suicide exploration reported that 86% of GPs explore suicide risk often or very often among patients with depression. A British study[26] described that nearly all (92%) GPs reported that they sometimes screened for suicide ideation, especially when patients showed symptoms of depression. A study using standardized patients simulating major depression[27], reported suicide exploration rates of 42%. Another French study[28] reported that GPs succesfully identified suicide ideation in 52% of patients who started antidepressant or anxiolytic treatment. However, accurate measures of GPs' suicide exploration rates in depressed patients are lacking.

Methods

Clearly presented and adapted.

Number of patients should be added in titles of tables 1, 2, 3, 5

The number of patients was added in the titles of the tables:

Table 1 (page 6 line 26)

n = 1034

Table 2 (page 7 line 10)

n = 579

Table 3 (page 7 line 24)

n = 455

Table 5 (page 9 line 11)

n = 164

Discussion

Some changes would be welcome

Results should be discussed in regard to the rate of suicide exploration among patients in primary care from previous studies presented in the introduction. The insufficient rate (33% in case of new episode of depression and 66% in case of existing episode of depression) should be highlighted. The main reason (they "feel" the patient would not be suicidal) is worrying, contrary to Suicidal tools and discussed further.

We thank the reviewer for this comment. We have changed the introduction, so that the findings are discussed in light with the studies presented in the introduction (see above). In addition, we have stressed the importance of exploring suicidal feelings not only in new but also in existing episodes of depression (the insufficient rate) and further elaborated on the main reason not to explore suicidal feelings ("'because they felt the patients would not have suicidal feelings") in the discussion section (page 10 line 20-30):

The most common reason GPs mentioned for not exploring suicidal thoughts among our sample of depressed patients, included that they thought the patient would not be suicidal, rendering talking about suicidality not necessary. This is worrying, because it implies that these GPs relied on an assumption rather than verifying it with their patients. While previous studies[11,14] have shown that concerns for suicidal behavior were raised in only about one-third of patients who later engaged in serious suicidal behaviour. In addition, patients tend to avoid the issue of suicidality if not initiated by the physician.[39] The high a priori chance of depressed patients endorsing suicidality when asked (38%) stresses the importance of exploring suicidality in these patients. Some GPs reported that they did not explore suicidal feelings because the patient had already indicated not being suicidal in an earlier consultation. It appears that these GPs may not be aware of the transient nature of thoughts about suicide and the importance of regularly assessing feelings about suicide in those deemed to be at some level of risk.

Note that the study conducted by Bocquier A and al among a French panel of GPs (and not from a French Sentinel Network). A French Sentinel general practice Network, whose GP continually report on an unpaid volunteer basis the occurrence of health related events, including suicide attempts exists also.

Thanks for this clearing this up, We have changed it in the manuscript (discussion section, page 9, line 30-31):

Bocquier et al.[25] showed that French GPs also vary in exploring suicide ideation among depressed patients.

Limitations: the study should be completed by studies conducted among patients

We have added this to the limitations (page 12, line 7-11):

future studies should validate these GPs assessments by assessing the suicidal status of all depressed patients in primary care. The authors are currently designing a study in which this will be addressed. Patients who are diagnosed with a depression or depressed feelings will be invited to participate in a survey where among others their suicidal ideation will be assessed.

Reviewer: 4

Reviewer Name: Peter M. Gutierrez, PhD

Institution and Country: Department of Veterans Affairs Rocky Mountain Mental Illness Research, Education and Clinical Center.

University of Colorado School of Medicine.

United States

Please state any competing interests or state ‘None declared’: None

Please leave your comments for the authors below The authors sought to determine the extent to which GPs in the Netherlands routinely assess patients presenting with depression for suicide risk. The introduction clearly frames the extent of the problem and rationale for conducting the study. The study hypotheses are well supported by the current suicide literature. The study methods are appropriate to creating a representative sample of GPs in the Netherlands and the patients they treat. The interpretation of the results presented in the Discussion is clear and well supported. The study limitations discussed are appropriate.

We thank the reviewer for his comments. We address the specific suggestions below, point by point.

Specific suggestions for improving the presentation follow in order of appearance in the manuscript.

Please include specific reference to any ethics review and/or human subjects use approvals for the study.

We added such a section to the manuscript with heading ‘ethical statement’ (following the discussion) on page 13 line 5-11:

Ethical statement

Patients were never directly assessed by the researchers, as patient’s characteristics were obtained by surveying GPs. In addition, the dataset did not include personal identifiers from patients nor GPs. According to the Dutch legislation, neither obtaining informed consent from patients nor approval by a medical ethics committee is obligatory for this type of observational studies containing no directly identifiable data.[44] The study design was discussed and approved in the Sentinel Practices and Surveillance Advisory Board Meeting of 11 October 2016, NZR064-111016 (meeting report).

On page 5, line 39 please spell out "MHN" as I believe this is the first place the acronym appears.

For clarity, we no longer used acronyms but spelled out the words. See for example see page 5, line 29-30:

Referring the patient to either a mental health nurse, basic or specialized mental health care were recoded into respectively 3, 4 and 5.

In Table 1 please add a note explaining to what "*" and "**" refer. Also, please explain why the gender percentages total to 91.2 and not 100.

We have changed this in the manuscript in Table 1 (page 6, line 27 and 28):

Significant at level p < .001*

a Percentages are presented for the row and add up to 100% horizontally

The explanation for calculating the patient's severity of suicidality on page 8 starting on line 32 is clear. However, it would be enhanced by including references to the theories/research behind why the factors listed in Table 4 are assessed.

We have addressed this in the method section (page 5, line 19-25):

A new variable was computed to indicate the severity of suicidality. This variable was created from items assessing patients’ frequency of suicidal thoughts, perceived control over these thoughts and actual preparation of an attempt.[34] In addition, items assessing patients’ rumination, hopelessness, entrapment and burdensomeness were added.[35] For a full overview of the included items see table 4. Adding up these items created a ‘sum score of suicidality’ ranging from 0 to 7, with 0 referring to the least and 7 to the most severe suicidal. A multiple linear regression model was used to study the influence of age, gender, episode of depression (new vs existing) and the interaction terms of these variables on the severity of suicidality.

In the Discussion it is noted at the top of page 11 that a reason given for not exploring suicidal feelings is "because the patient had already indicated not being suicidal in an early consultation". It appears that these GPs may not be aware of the transient nature of thoughts about suicide and the importance of regularly assessing thoughts/feelings about suicide in those deemed to be at some

level of risk. In making recommendations about GP continuing education, this is a point that could be highlighted.

We thank the reviewer for addressing this point, this should indeed be highlighted. We changed it in the discussion and recommendations:

Discussion section (page 10 line 26-30):

Some GPs reported that they did not explore suicidal feelings because the patient had already indicated not being suicidal in an earlier consultation. It appears that these GPs may not be aware of the transient nature of thoughts about suicide and the importance of regularly assessing feelings about suicide in those deemed to be at some level of risk.

Recommendation section (page 11, line 33-34):

Suicide prevention training for GPs, during which the importance for consequent and frequent exploration of suicidal feelings is stressed, is recommended

**VERSION 2 – REVIEW**

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| **REVIEWER** | Gregory Simon<br>Kaiser Permanente Washington Health Research Institute |
| **REVIEW RETURNED** | 06-Feb-2019 |

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| **GENERAL COMMENTS** | All of my concerns have been adequately addressed. |

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| **REVIEWER** | Younès, Nadia<br>Versailles Saint Quentin en Yvelines Université. |
| **REVIEW RETURNED** | 07-Feb-2019 |

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| **GENERAL COMMENTS** | I'm satisfied with the answers. According to me, the is now suitable for publication. |