PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Are perceived barriers to accessing mental health care associated with socioeconomic position among individuals with symptoms of depression? Questionnaire-results from the Lolland-Falster Health Study, a rural Danish population study.
AUTHORS	Packness, Aake; Halling, Anders; Simonsen, Erik; Waldorff, Frans; Hastrup, Lene

VERSION 1 – REVIEW

REVIEWER	Siegfried Geyer Medical Sociology Unit, Hannover Medical School, Germany
REVIEW RETURNED	12-Jun-2018

GENERAL COMMENTS	This is an interesting paper on an underdeveloped topic. The authors have examined whether barriers to health care with respect to mental health do exist under the conditions of the Danish health care system where psychotherapy is only partially covered by the health insurance system. Due to health care used being strongly dependent on the structure of health care systems, the authors have outlined the relevant details of the Danish system (p.4) what makes it possible to draw comparisons with other systems. The findings are based on a cross-sectional survey conducted in 2016/2017. Interesting findings were reported, but some questions remain due to some problems with the SES-indicators used. Although I understand the problem with using long questionnaires in surveys, it is questionable whether single items should be drawn out of questionnaires measuring constructs. The authors have tried to resolve is by examining the questions in separate tests, and this was a good solution for avoiding the problems associated with the use of single items that are part construct measures. The main topic of the paper were SES-differences with respect to barriers to care. While the authors used direct indicators of education and employment status, indicators of income were missing. They were replaced by questions pertaining to financial strain (p.6). Given that financial problems were found to be the main obstacles for seeking care (p.10), the predictor appears as rather weak with respect to validity. Subjectively assessed financial strain only refers to a subset of respondent, while the largest art of the distribution of material resources remains undifferentiated. The authors should describe this problem in the methods-section and they should come back to it in the discussion.

REVIEWER	Dr Helen Barratt University College London, UK

REVIEW RETURNED	26-Sep-2018

GENERAL COMMENTS	Thank you for the opportunity to review this interesting study. My comments to the authors are as follows: • Please define what you mean by 'specialised services' on p2. Do you mean hospital-based mental health services (ie normal secondary care) or something more specialized? • The paper makes the assumption that, because 20% fewer individuals are in contact with services than expected (p2), this automatically equates with unmet need, and in turn is the result of barriers to access. It would be worth discussing somewhere the difference between estimated/expected need and actual need, and between need and demand. Indeed, later on the authors report that 7.3% of their respondents have symptoms indicative of depression. How does this equate to the expected value? • I am not clear about the financing arrangements for psychotherapy. You say it is only part subsidized, but then later you say it is subsidized for some groups. (p3) • Who is the LOFUS funded and administered by? • How in practice were respondents scoring high on the depression index prompted then to answer the questions about access? What information were these individuals given? Were they aware they had symptoms indicative of depression? If not, how did you handle this? • Is your adaptation to the MDI (bottom p3) an accepted approach, with existing precedent? If so, please provide a reference. If not, please explain why you made the adaptation. • Similarly, is there precedent for the methods you used to measure SEP? If not, please explain how you chose this approach. • Table 1 is quite difficult to understand. Please relabel 'Pct' to the more accepted %. The right hand column is, I think, '% of people with MDI >20 in that category'? From a population health perspective, it would be more useful to show '% of people in that category who have MDI >20'. In other words, how does the prevalence of mental ill health vary by category? • 'Transport showed the greatest disparity across the socioeconomic groups' (p8). Please explain what this means. • In the discussion, the authors make reference to measuring help seeking behaviours. I am unsure though whether or not this is actually what they did. Do they know that the 314 individuals with an MDI score >20 had actually sought help in the past for depression? Were they all aware they were depressed? Given that a proportion of mental ill-health goes undiagnosed, it seems likely that not all will have sought to access care, and therefore they won't have encountered barriers to doing so. • What does it mean that the group without postsecondary education were underrepresented 'by a factor of 3'? • The statement that the 'answer is quite clear' re why MH services are less used, is a very bold one. Whilst the factors identified may well be important, there will undoubtedly be other factors at play, which were not captured by their questionnaire. Indeed, further qualitative research to explore the interplay between different factors might be a reasonable recommendation for future research.

VERSION 1 – AUTHOR RESPONSE

Reviewer #1

Although I understand the problem with using long questionnaires in surveys, it is questionable whether single items should be drawn out of questionnaires measuring constructs. The authors have tried to resolve is by examining the questions in separate tests, and this was a good solution for avoiding the problems associated with the use of single items that are part construct measures.

The main topic of the paper were SES-differences with respect to barriers to care. While the authors used direct indicators of education and employment status, indicators of income were missing. They were replaced by questions pertaining to financial strain (p.6). Given that financial problems were found to be the main obstacles for seeking care (p.10), the predictor appears as rather weak with respect to validity. Subjectively assessed financial strain only refers to a subset of respondent, while the largest art of the distribution of material resources remains undifferentiated. The authors should describe this problem in the methods-section and they should come back to it in the discussion.
The socioeconomic indicators were drawn from the questionnaire directly. In planning the study we had expected to draw data on income and education from national registers based on the personal register number by the participants, since socioeconomic data were not supposed to be part of the general questionnaire. When we learned some variables on SEP were included, we used what was at hand. We felt lucky *financial strain* was a part since it is not possible to achieve from registers and are known to be associated with mental health problems and common mental disorders in particular. Economic strain is a part of the Eurostat Statistics on Income and Living Conditions (SILC)[1]- economic strain termed 'inability to make ends meet'.

We have now explained income was not available in the method section and have given a comment on the association between financial strain and expenses as a barrier in the discussion.

Reviewer: 2

1 Please define what you mean by 'specialised services' on p2. Do you mean hospital-based mental health services (ie normal secondary care) or something more specialized? Thank you, we have specified this in the manuscript. Specialised services are reported as psychologist- or psychiatrists services – in contrast to GP-services.
2 The paper makes the assumption that, because 20% fewer individuals are in contact with services than expected (p2), this automatically equates with unmet need, and in turn is the result of barriers to access. It would be worth discussing somewhere the difference between estimated/expected need and actual need, and between need and demand. Indeed, later on the authors report that 7.3% of their respondents have symptoms indicative of depression. How does this equate to the expected value? This assumption follows from the documentation of higher needs by deprived persons would be reflected in higher need in deprived areas. When the useof services is less than the regional average, we assume there was an unmet need. We made no attempt to estimate the level of unmet need. We have corrected the manuscript in order to make this clearer.
3 I am not clear about the financing arrangements for psychotherapy. You say it is only part subsidized, but then later you say it is subsidized for some groups. (p3). In general treatment of adults by psychologist is not subsidized, except for the specific condition mentioned. We have madespan style="font-family:Calibri; color:#0070c0"> corrections in order to eliminate the confusion.
4 Who is the LOFUS funded and administered by? The LOFUS is publicly funded by the Region Zealand, the two municipalities Guldborgsund, and Lolland, and Nykøbing Falster Hospital.
A steering committee of researchers and administrators are responsible for planning and administration of the survey. The staff is employed by the Nykøbing Falster Hospital. We have only added that the study is *publicly funded*. The study is described in the upcoming issue of Scandinavian Journal of Public Health – the reference is updated accordingly.
5 How in practice were respondents scoring high on the depression index prompted then to answer the questions about access? What information were these individuals given? Were they aware they had symptoms indicative of depression? If not, how did you handle this?
The questions popped up automatically with no further explanation, when the MDI sum-score exceeded 20. Besides the depressions score the participants filled in an anxiety-score and had blood

test ect. Abnormal findings e.g. severely low or high glucose level abnormal ECG, are conferred right away with the attending physician at the local hospital. The participants were told the results by mail within two weeks after attending the examinations/filling in the questionnaires; elevated scores on depression or anxiety symptoms triggered a recommendation to consult the GP in this mail as well.

6 Is your adaptation to the MDI (bottom p3) an accepted approach, with existing precedent? If so, please provide a reference. If not, please explain why you made the adaptation.

By using the sum scores we used the MDI as a measurement instrument and will get a higher proportion scoring positive for depression, than when the MDI is used a diagnostic instrument. We have added a reference for this Bech [2]. Others have used the MDI in this manner: Sun[3], Osler[4], Wallerblad [5]. We have chosen this approach in order to include more with symptoms of depression; however, more are included not qualifying to the full criteria for ICD-10 depression, since the core symptoms (depressed mood; loss of interest and enjoyment and reduced energy) are not sepaated and due to be present *more than half the time*. We expect the sum-score to be equally valid across SEP, as the ICD-10 diagnostic score.

7 Similarly, is there precedent for the methods you used to measure SEP? If not, please explain how you chose this approach.

Please see the reply to reviewer 1 concerning *financial strain*. As for occupation the questionnaire had 14 categories. In order to gain enough power we reduced the 14 categories to four: Working, temporary not working,permanently not working, and others. These were considered the best way to distinguish relevant categories in a small study as ours – knowing unemployed persons are more exposed to health problems, in general. Education is a traditional categorization. *Years attending school* was not used in the analyses, since it did not seem to give any relevant distinction.

8 Table 1 is quite difficult to understand. Please relabel 'Pct' to the more accepted %. The right hand column is, I think, '% of people with MDI >20 in that category'? From a population health perspective, it would be more useful to show '% of people in that category who have MDI >20'. In other words, how does the prevalence of mental ill health vary by category?

We have corrected table 1 according to the suggestions and added row% for the group with symptoms of depression. This is much more informing.

9 'Transport showed the greatest disparity across the socioeconomic groups' (p8). Please explain what this means.

Transport – as the only item – showed high OR for being perceived as a barrier for persons in low SEP across all three measures of SEP. We have specified to: Transport presented the least difficult barrier in general; but on the other hand, transportation also presented the greatest and most consistent socioecnomic disparity *across all measurements of SEP*.

10 In the discussion, the authors make reference to measuring help seeking behaviours. I am unsure though whether or not this is actually what they did. Do they know that the 314 individuals with an MDI score >20 had actually sought help in the past for depression? Were they all aware they were depressed? Given that a proportion of mental ill-health goes undiagnosed, it seems likely that not all will have sought to access care, and therefore they won't have encountered barriers to doing so.

It is right, we do not know if the respondents are aware if they have a treatment need. We only reveal what may deter from accessing mental health care. We assume this to have an impact on help seeking – but agree it might be confusing. The section is erased.

11 What does it mean that the group without postsecondary education were underrepresented 'by a factor of 3'?

In the study sample 25% had '+3 years postsecondary education' vs 16% in the population they were sampled from; similar, 19% in the sample had 'no postsecondary education' comparted to 35% in the study population (25/16)/(19/35) resulting in a proportion 2.88:1 – Compared to the population the sample is over represented by individuals with longer education by 2.88 . We will rephrase to: *Compared to the background population the sample is over represented by individuals with +3years postsecondary education vs no postsecondary education by almost 1:3,.. .*

12 The statement that the 'answer is quite clear' re why MH services are less used, is a very bold one. Whilst the factors identified may well be important, there will undoubtedly be other factors at play, which were not captured by their questionnaire. Indeed, further qualitative research to explore the interplay between different factors might be a reasonable recommendation for future research.

We have modified this to the 'answer in this study is quite clear'

We hope the explanations and corrections are satisfying.

Odense, October 2018

1. Eurostat. EU statistics on income and living conditions (EU-SILC) methodology Brussels: European Union; 2018 [updated 4 October 2017. Available from: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_statistics_on_income_and_living_conditions_(EU-SILC)_methodology accessed 23.04.2018 2018.
2. Bech P, Rasmussen NA, Olsen LR, et al. The sensitivity and specificity of the Major Depression Inventory, using the Present State Examination as the index of diagnostic validity. *J Affect Disord* 2001;66(2-3):159-64. [published Online First: 2001/10/02]
3. Sun Y, Moller J, Lundin A, et al. Utilization of psychiatric care and antidepressants among people with different severity of depression: a population-based cohort study in Stockholm, Sweden. *Soc Psychiatry Psychiatr Epidemiol* 2018;53(6):607-15. doi: 10.1007/s00127-018-1515-0
4. Wykes T, Haro JM, Belli SR, et al. Mental health research priorities for Europe. *Lancet Psychiatry* 2015;2(11):1036-42.
5. Wallerblad A, Moller J, Forsell Y. Care-Seeking Pattern among Persons with Depression and Anxiety: A Population-Based Study in Sweden. *Int J Family Med* 2012;2012:895425. doi: 10.1155/2012/895425. Epub;%2012 May 10.:895425.

VERSION 2 – REVIEW

REVIEWER	Siegfried Geyer Medical Sociology Unit, Hannover Medical School, Germany
REVIEW RETURNED	30-Oct-2018

GENERAL COMMENTS	The paper can be published in the revised form.

REVIEWER	Helen Barratt University College London, UK
REVIEW RETURNED	07-Nov-2018

GENERAL COMMENTS	Overall issues remain about the design of this study, particularly 1) the validity of financial strain as a predictor (as raised by the other reviewer), 2) whether demand for services can be interpreted as need and 3) whether not the adaptations to the various instruments have affected their measurement properties. However, the authors have addressed my comments.