Reviewer's report

Title: Treatment received and treatment adequacy of depressive disorders among young adults in Finland

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Reviewer: Arnaud Duhoux

Reviewer's report:

The topic of the article is interesting. The studied population received little interest on this topic. Overall this is a good article. Please find below some suggestions to improve the manuscript.

• Major Compulsory Revisions
  None
• Minor Essential Revisions

Abstract:
1. the abstract should be revised according to revisions suggested in the next sections

Methods:
2. the construction of the sample is not easy to understand, and more details should be given to make it clearer.

Line 84 “Information from the Finnish National Hospital Discharge Register (NHDR) was used to identify all persons who had received hospital treatment due to any mental disorder” Do the authors mean: all persons from the original survey? Because later, they wrote: «Persons selected via NHDR who had not returned the MEAF questionnaire were contacted through the person responsible for the treatment». This is not clear to me.

Line 87: “In addition, a random subsample of Health 2000 young adults was invited to the interview regardless of their answers to the screening questionnaire”. Please explain why it was necessary to do so.

Figure 1: What were the selection criteria when the sample was reduced from 1316 to 982?

3. Line 96: was the Mental health assessment done on face-to-face or on the phone?

4. Line 110: «all case records from hospital and outpatient treatment were obtained». Could the authors provide more details on the Finnish data system, this seems impossible to do in other countries such as Canada where data are not centralized.
5. Line 129 and table 2 and 4: Specific is misspelled.

6. Line 128: “Therefore, the present paper focuses on treatment received during the most recent depressive episode.” It is not clear for me how the episodes were defined. This is important to understand, because the adequacy of treatment is dependant on the time the studied episode started and lasted. Please give more details.

7. Line 136: “We also defined at least four days of hospitalizations for depression as adequate care.” Could the authors explain why they choose the limit of 4 days? Is this limit derived from a practice guideline or a previous study?

8. Line 132: "Based on this information, receiving antidepressant pharmacotherapy for at least two months with at least four visits with any type of physician or at least eight sessions of psychotherapy were regarded as minimally adequate treatment.” The authors should specify the period of time observed for the reception of the minimum number of psychotherapy sessions (over 6 months, 12 months?). In the literature, there is a great variation.

9. Line 137: “Visits with physicians were assessed from case records and interviews and divided into three categories: none, at least one visit or at least four visits a year.” Why did the authors choose to measure the number of visit on a one-year period if they can determine the beginning of the episode? (Same question for psychotherapy). This can represent a problem, because the sample is constituted of people with lifetime disorder, but the number of visit is measured on a one-year period. Is it the year after the beginning of the episode? Please give more details.

Also, were only the visits related to mental health considered or every visit? Please make this point clear, as many other study considered visits for mental health reasons only. This can have a large impact on the results. In a previous study, we showed that people with depression had visits in primary care but were not detected and didn’t consult at all for mental health reasons (even if they consulted in primary care for other reasons). (Ref: DUHOUX, A., FOURNIER, L., GAUVIN, L., ROBERGE, P., Quality of care for major depression and its determinants: a multilevel analysis. BMC Psychiatry. 2012 September, 12:142.)

10: Line 141: “A psychotherapeutic session was defined as a visit with a psychiatrist, psychologist, psychotherapist or other professional in a psychiatric clinic.” Is it possible in Finland to receive psychotherapy in other settings? If so, why did the authors consider only psychiatric clinic?

11: Line 179:”Logistic regression analysis was used to identify variables (i.e. gender, age, age at the onset of depression, basic education, MDD, suicidality, anxiety disorder, and substance use disorder) that were independently associated with the use of mental health services.” The regression analyses were used with many dependant variables, not only use of mental health services. Please specify.

12. The authors performed many bivariate analyses. However, they didn’t use a Bonferroni correction. This should be added in the method section, or at least discussed in the limits.
Results:

13. Line 219: "Participants who discontinued their visits despite appropriate treatment plan were more likely to have had medication, visited a physician, and attended psychotherapy than those who continued their visits. However, differences were no longer statistically significant when medication for at least two months and psychotherapy at least eight times a year were taken into consideration (Table 4)."

The dropout variable is not clearly defined. I don’t really understand how you can be considered dropped out, and received adequate care. For example, if you received minimally adequate psychotherapy (at least 8 sessions), it may be possible that your treatment was effective and is over. So, the patient is getting better and stopped his treatment, in this case it is not a dropout. There is something with the definition of dropout that I don’t understand.

In table 4, it is quite strange to see dropout as an independent variable. It is difficult to interpret the results. For example, dropout is associated with pharmacotherapy but you need to start a treatment to dropout. I suggest removing dropout from the independent variables list.

Also, I don’t think we can say that the association disappears when we take into consideration medication and psychotherapy for a least 8 sessions because we are not in a multivariate analysis. So, we don’t take into consideration any variable. You can just say that there is no association.

This absence of association is certainly related with the definition of dropout. People who received medication +4 visits or 8 sessions of psychotherapy didn’t dropout, they just received an effective treatment and are getting better. This is a good argument to revise the definition of dropout. There is a difference between a dropout at the beginning of the treatment (which can be due to many different reasons, but the patient is still symptomatic) and a dropout after a longer time when the treatment can be effective and the patient getting better.

More details on the definition of dropout should be given. The last paragraph of the discussion on dropout should be revised.

14. Line 227: “Gender, age, age at the onset of depression (continuous), basic education, history of suicidal attempts, diagnosis of MDD, comorbid anxiety disorder and substance use disorder were entered simultaneously into a logistic regression model to explore the factors affecting treatment. “ This sentence should be moved to the Analysis section.

Discussion:

15. Line 244: "In our study of young adults with depressive disorders, 76.1% had had some kind of contact with the health care system during the most recent depressive episode”. It is not clear if the counted visits were during the last year, the last episode or the year of the last episode, and if those visits were for mental health reasons or not. Please make it clear in the methods section and revise if necessary.

16. In the first paragraph of the discussion, the author report results of only 3
studies with lower adequate care. However, in a systematic literature review we performed, we found a larger range (14 – 56 %) in 30 studies which included measure of minimally adequate treatment depending on the population studied and the definition of the adequacy of treatment (REF: DUHOUX, A., FOURNIER, L., MENEAR, M. Quality indicators for depression treatment in primary care: a systematic literature review. Current Psychiatry Reviews. 2011 May ; 7(2):104-137). They should revise this paragraph considering a broader range of the literature on the subject.

The second paragraph of the discussion should also be revised in view of the Smolders et al. (2009) study which also used multiple data sources (case records and patient questionnaire). They found a similar result in the % of adequate care. (Smolders, M, Laurant M, Verhaak P, et al. Adherence to evidence-based guidelines for depression and anxiety disorders is associated with recording of the diagnosis. Gen Hosp Psychiatry 2009; 31(5):460-9.)

17. Line 261: “None of the factors chosen were related to the overall adequacy of treatment in a multivariate analysis. This suggests that services for the treatment of depression are not functioning efficiently: people with more severe or comorbid symptoms did not receive adequate treatment more often than others. However, in a bivariate analysis, the duration of depressive episode was related to treatment such that participants whose episode had lasted over a year received more often any care and guideline-concordant care in regard to all the various aspects of treatment as well as minimally adequate treatment.” The authors’ explanation is a bit too conclusive. The absence of significance can be explained by many reasons, including statistical ones. If the association is not significant in multivariate analysis, it may be explained by the low power and the small size of the sample (type 2 error). The bivariate association of duration of episode with guideline concordant care can be diluted in multivariate analysis due to lack of power.

Also the authors wrote that “people with more severe or comorbid symptoms did not receive adequate treatment more often than others.” That could be considered as a good point: even people with mild to moderate depression received adequate care.

18. Line 272: “This may also be one explanation for a higher estimate of treatment adequacy in our study compared to other previously mentioned studies: we investigated the most recent lifetime depressive episode whereas many other studies have looked at depressive episodes within the last 12 months. It is likely that in other studies, all participants with depressive disorder had not yet sought help though they would do so in the future.” In the results section, it would be helpful to the readers if the authors could give an idea of the mean time between the last episode and the survey, and the number of participants still in their most recent episode.

19. Line 278: “So it seems that physicians tend to meet the most complicated cases more often than others, as an association between comorbid substance use disorder and physician visits was also found.” This sentence is the opposite of the one on lines 262-263. Those opposite conclusions are explained by the analysis considered: the conclusions are not the same if you consider bivariate or
multivariate analysis. The authors should be clearer on this point (which result support which discussion point) and discuss in the limits on the divergent results (or interpretation) they found.

20. Line 292: “This may indicate that psychotherapy has a beneficial effect on an individual’s psychosocial functioning ability, capacity for studying, working, and forming relationships.” An alternative explanation is that being a student gives a better access to psychotherapy via the university health services. Did the authors explore this idea? Are the universities in Finland providing health services?

21. Line 331: “Another significant limitation was the small size of study sample, which led to low statistical power and wide confidence intervals, particularly in the logistic regression analysis.” The limits in the size of the sample are well explained. However, it is difficult to understand what is the sample representative of. The authors should explain in this section what is the representativeness of their sample. Moreover, they included a random sample of young participants with no screened symptoms. Were there any of those no symptomatic participant classified as depressive? What is the effect of the sampling strategy on the representativeness of the final sample? That discussion will help to generalize the results. For example, on the line 340, the authors wrote “A lack of adequate treatment of depressive disorders is an ongoing problem, although our results on treatments among young adults are better than in most previous studies and encouraging in this respect.” Without an idea of the generalizability of the results, it seems difficult to draw such conclusion. Can we infer the results to all the Finland Youths?

Another limit of the study is the time of data collection, close to 10 years ago. The quality of care could have change in a decade with improvement in treatments and dissemination of practice guidelines. The authors should discuss this point.

Conclusion:

22. Line 342: “It is alarming that dropout is related to individuals with less education, suicidality and substance use disorder, who are otherwise also persons at greatest risk of complications and social exclusion. These groups present a challenge to future health care and more efforts are needed to outreach and motivate them to receive effective treatment.” I am not comfortable with a conclusion supported by associations significant in bivariate analysis only. If the association disappears in multivariate analysis, this association maybe weak or explained by other factors. I suggest that the author write a conclusion based only on the strongest associations they found, the one significant in multivariate analysis.

23. titles of tables and figures should be more explicit with details such as sample size, source of data, country, year of data collection.

• Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

None
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests