Author's response to reviews

Title: Psychotropic medication in the French child and adolescent population: prevalence estimation from health insurance data and national self-report survey data

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

We have made substantial revisions to our manuscript “Psychotropic medication in the French child and adolescent population: prevalence estimation from social security data and results from a national self-report study”.

We appreciate the thoughtful comments of our reviewers and feel that their comments have helped to make this a stronger paper. We feel that we have been able to comply with their requests.

Reply to Reviewers:

As per the request of Reviewer 1:

Major compulsory revisions

. In the first version of the manuscript, the decision not to present the details of the model that was used to estimate the prevalence of psychotropics in France was intentional, in order to simplify the paper. Obviously, as it is stated by reviewer 1, this has led to “doubts” on the methodology. We agree with this point.
In the new version, we have thus added the formal mathematical model that was used and rewritten the paragraph “statistical methods”
From this model, it can be seen that the Franche-Comté is not intended to represent France. In fact, from a statistical point of view, a bias arise from an interaction between a French region (here Franche-Comté) and characteristics like age and gender with regard to the probability of consuming a given psychotropic. This bias is difficult to avoid. However, we checked that the distribution between France and Franche-Comté in terms of age and activity was similar. We have also compared the overall prescriptions of psychotropics between France and Franche-Comté in the 2004 RSI database for children and adolescents. (Table 1)

. 9660 children were affiliated to RSI Franche Comté in 2004

. The use of statistical tests for comparisons of age and gender is a real epistemological question. The model presented here is not a probabilistic model, but an algebraic one which yields a national prevalence that cannot be compared with statistical tests of hypothesis (statistical tests cannot be used in general in an exhaustive population). Of course, there is a certain level of uncertainty in our estimates; this is the reason why we performed sensitivity analyses (which are presented as range of frequencies). The comparisons of age and gender could benefit from such sensitivity analyses, but to our knowledge, there is no consensual theoretical framework to do this.

We made the correction on the subject of gender and aim of psychotropic use “Girls use psychotropics to deal with anxiety whereas boys use psychotropics to treat sleep disorders”

. We added a paragraph concerning Sevilla–Dedieu’s article and the comparisons between frequencies of psychotropic:
“A recent study conducted in France in MGEN affiliates finds similar rates of overall psychotropic use frequencies 2.1% vs 2.2% in our study [28]. The frequency of methylphenidate and SSRI use is a bit higher in our study (0.1% for psychostimulants and 0.4% for antidepressants in the MGEN study versus 0.1% for methylphenidate and 0.5% for SSRI). For anxiolytics, the comparison remains difficult because the MGEN study takes herbal medicines into account.”
Minor essential revisions

We tried to combine tables 2-6 into a single table. It’s This makes it difficult to read: first, because it seems to have too much information in the same table and, second, because the characters are too small if all the information is included in only one page.

As suggested by the reviewer, we transferred the prevalence of drug prescriptions per 1000 individuals to the tables. We think that it would be confusing to give prevalence per 1000 individuals in the text, since other information is given per 100 individuals.

Data regarding the most frequently prescribed drugs would require applying to the social security agencies again for new data. Unfortunately, this information are no longer available.

The language of the article has been reviewed by a native English speaker.

As per the request of Reviewer #2:

As stated by the reviewer, the question of physical uses for psychotropics in children is crucial. We have added a paragraph in the discussion. It appears that tricyclic antidepressants are used to treat enuresis in children and could be marginally useful to treat pain. In this study, only SSRIs were taken into account to avoid this bias. There are no physical indications found for this therapeutic class. Methylphenidate has another official indication which is narcolepsy. We cannot know the proportion of methylphenidate used to treat narcolepsy. Empirically, it is likely to be very rare. Antipsychotics have no official indication to treat physical health problems in children. Haloperidol is used although infrequently as an antiemetic drug. Concerning benzodiazepines, the question is more difficult. Indeed, benzodiazepines are also indicated to treat epilepsy in children and in rare instances used as analgesic. In our study, it is impossible to know whether benzodiazepines are used to treat anxiety or epilepsy. To our knowledge, in France, there is no publication giving an estimation of the rates of benzodiazepines used against anxiety or epilepsy. Empirically, the proportion of benzodiazepines used to treat epilepsy is likely to be very low compared to psychiatric indications. In addition, other prevalence studies in children do not specify the aim of the prescription for benzodiazepines. Thus, the prevalence estimation in our study can be compared to other studies.

The use of self-report questionnaires in determining substance consumption is indeed an important question. From a very strict perspective, we can only refer here to reported consumption and not actual consumption. From our point of view, the interest of the paper is that it crosses several sources of information: information from official data, and information from self-report. The interpretation of the discrepancies that can be detected between these two sources is detailed in the paper.

In the latest version of the paper, we have added data on psychotropic prescription in a recent French study:

“A recent study conducted in France in MGEN affiliates finds similar rates of overall psychotropic use frequencies 2.1% vs 2.2% in our study [28]. The frequency of methylphenidate and SSRI use is a bit higher in our study (0.1% for psychostimulants and 0.4% for antidepressants in the MGEN study versus 0.15% for methylphenidate and 0.5% for SSRI). For anxiolytics, the comparison remains difficult because MGEN study takes herbal medicines into account. “

We have changed the title as asked by the reviewer: “Psychotropic medication in the French child and adolescent population: prevalence estimation from health insurance data and national self-report survey data”

We have changed the wording in three instances as suggested by the reviewer.
“In addition, several epidemiological studies have raised concerns about psychotropic consumption in France: legal drug use in France is among the highest in the world and it was the highest in the European Union in 1997 [2,3,26].”

“Concerning data from the health insurance providers…”

“Self-report data collected by ESCAPAD”

. The language of the article has been reviewed by a native English speaker

Hoping these revisions meet with your approval.

Yours sincerely,

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