Author's response to reviews

Title: Adult Attention-Deficit/Hyperactivity Disorder and nicotine use: a qualitative study of patient perceptions.

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

We highly appreciate the valuable comments of the reviewers on our manuscript “Adult Attention-Deficit/Hyperactivity Disorder and nicotine use: a qualitative study of patient perceptions.” The additional suggestions were quite helpful for us and we incorporated them in this revision to improve the quality of our paper.

We hope the Reviewers and the Editors will be satisfied with our responses to the comments and this second round of revisions for the original manuscript.

REVIEWER 1

The manuscript is now an interesting study that adds to the scientific literature with a rarely seen method (qualitative research) in this area of research (link between ADHD and SUD).

Thank you for this comment.

REVIEWER 2

1. In the Introduction, the authors stated that qualitative investigations “would be fruitful.” They described the value of the knowledge gained. I recommend that they indicate some implications for practice, such as implications for treatment and prevention of tobacco use among individuals diagnoses with ADHD.

We have elaborated on this subject. An important practical implication of this qualitative research is its potential impact on treatment alliance.

We now state the following (page 3):

“There is ample reason to believe that such qualitative investigations would be fruitful, especially in an effort to undertake a “collaborative or relationship centered treatment
“approach”, that allows for treatment provider and patients to allow “mutual exchange of views” in and effort to solve problems in the patient’s best interest [39, 40].”

Furthermore we believe, as now stated in the conclusion (page 9), that these findings directly inform clinical practice and can enhance alliance and collaboration. Perhaps these findings may further suggest new interventions and approaches, but we think it is beyond this manuscript’s scope to discuss in detail these possibilities, especially considering the heterogeneous literature on the effect of stimulant medication on tobacco use patterns.

2. In the same Introduction paragraph, the authors indicated the tobacco use may be influenced by “cultural factors” and “social behaviors.” Both are broad concepts. It would be helpful if the authors elaborated on these points, and provided support from the tobacco use literature.

We have elaborated on this subject and added further references (page 3):

“Furthermore, it is likely that tobacco use is heavily influenced by cultural factors such as race, acculturation, or socioeconomic status, beyond the pharmacology of nicotine, and frequently occurs as a consequence of a cluster of social behaviors that facilitate social interaction [42]. For example a recent study among a large social network of 12 067 people found that “smoking behavior spreads through close and distant social ties” [43]. It has also been widely reported that peer influences on smoking behavior are stronger among white adolescents than among other subgroups such as African American, Asian or Hispanic adolescents [44].”

3. In the Statement of Purpose, the authors indicated that they used an inductive qualitative approach that made no assumptions about the relationship between ADHD and nicotine use. However, they wrote an Introduction that was focused on two theories of tobacco use (self-medication and disinhibition). Thus, it seemed like the justification for their study was to conduct a qualitative study that tested both theories. It would be helpful if the authors addressed the disconnect between the purpose of the study and analytical approach and background provided in the Introduction.

The introduction section focuses on the idea that “patients’ subjective perceptions have made valuable contributions to our understanding of ... clinical issues, such as their perspectives on medication adherence and the causes of mental illness “and on the review of current theories provided by literature (using quantitative methodology) to explain why patients suffering of adult ADHD show significantly higher rates of cigarette smoking than do members of the general population.

It is not our intention to imply that the purpose of this qualitative study was to test provided hypotheses - applying deductive analysis. (In fact the majority of cited quantitative data on conduct disorder was published after we conducted this study).

As the reviewer notes, we explicitly state (on page 3) that: “The current study explored how patients with adult ADHD, who currently smoked, viewed the relationship (- or link) between nicotine use and ADHD, using an inductive qualitative approach that made no initial assumptions about the relationship between ADHD and nicotine use.”

To further clarify, we have included the following sentence (page 3): “Thus, this study was not designed to test whether the above-described hypotheses on this link, identified
using quantitate research methods, are consistent, but to “allow the research findings to emerge from the frequent, dominant, or significant themes inherent in raw data. [45]”

4. In the Analysis section, the authors indicated that blind dual coding was conducted. Was there always agreement? If not, how did the coders address disagreements? Such details impact the validity of the qualitative analyses.

We have further elaborated this subject (page 4):

AF applied the final code, and consistency was confirmed through blind dual coding of transcripts with ML. If there was disagreement, researchers met to discuss and reconcile the coding. This became necessary until the late stages of revising the submitted manuscript and can be traced using the pre-publication history of this article on biomedcentral.com.

5. In the Results, the authors indicated that 9 participants described a link between ADHD and tobacco use, and 1 did not. But there were a total of 12 participants? What were the findings from the remaining 2 participants?

We have added the following paragraph in the Results section to clarify (page 5):

Two participants did not address this subject in their narratives. In order to avoid leading questions and to preserve a non-judgmental stance, participants were not pressed on this subject.

6. In the Results, the term “peer-group-mediated behavior” in Theme II was confusing. I recommend that the authors clearly define that term or choose an alternative term that is more self-explanatory. In addition, the results section provided few findings about the impact of peers separate from seeking a positive self-image. I recommend that they elaborate the finding about peer relations if it is a separate theme.

We have eliminated the term “peer-group-mediated behavior” in favor of the clearer term “Social behavior.” We have accordingly reorganized Theme I and Theme II, in the Abstract, Results and in the Discussion section. The introduction of the term “Social behavior” now includes a paragraph and a sample quote on tobacco’s perceived effects on interpersonal relationships.

7. In the Results, Theme II seems to contain some separate and distinct findings. It is unclear why the authors combined findings that were tied to personality traits (sensations-seeking) with social factors (seeking positive self-image with peers). I recommend that the authors consider separating these findings into two themes, which would help increase the significance of both results.

As stated above, in light of this reviewer’s further comments (Minor Essential Revisions, Point 8) we have reorganized and relabeled Theme I and II. We have further considered separating these motives, but ultimately decided that this does not appear justified given what appears to be significant overlap between the “desire to live a more exciting lifestyle, to undermine perceived social norms, to enhance the self-image, and to gain access to a desired non-conformist peer-group.” In our eyes a clear differentiation can only be made to Theme I “self-medication” with the concept of tobacco use as a method to attenuate symptoms of inattention or hyperactivity. Furthermore we subsumed these ideas into one theme in an effort to abstract and collapse, following the recommendations of qualitative content analysis.
8. In the Discussion, I recommend that the authors acknowledge the one negative case that did not describe a link between ADHD and tobacco use. They also should address the 2 cases that were missing in the results section regarding their perceptions of a link or not.

We have now acknowledged these cases in the Discussion section (page 8):

“In this qualitative study, nine out of twelve subjects clearly identified perceived links between tobacco use and their ADHD. One had not thought about a connection and two participants did not address this topic in their narrative”

9. In the Discussion, the authors stated “comparisons with healthy volunteers or the general public would be misleading.” I recommend that the authors elaborate on this point because it was not clear how they would be misleading. If such research would not be beneficial, then I recommend that the authors identify other areas for future research.

We agree, and we also found this comment from Reviewer I’s from the first round of revision helpful in this regard: “Moreover, "self-medication" in non-ADHD smokers is somewhat strange. So is it possible to use the general population’s believes of the effects of nicotine to compare the 'self medication effects' with? What I mean is: "I smoke cause it helps me doing my tasks, which I cannot do without smoking" = theme 1: selfmedication. "I smoke, for it helps me calming down" might be the general effect of nicotine use."

We accordingly reworded this paragraph extensively (page 8), including one example from related literature that we hope is helpful in illustrating our point:

“At first glance, the views of our study participants do not differ greatly from explanations given by cigarette-smokers without ADHD. For example, a recent qualitative study of cigarette-smoking college students found that smoking “served as an aid in alleviating anticipated stress”; “helped clear the mind when shifting from one subject to another”; “helped to refocus thoughts during a study session, facilitating greater concentration”; “served as a reward to celebrate the completion of a study session or an examination”; and helped to change the mindset when “transitioning from studying to being social” [61]. However, it must be noted that nicotine effects in adults with ADHD might exceed those in healthy volunteers, because they improve the attention of the former, as well as their clinical symptomatology [62]. Comparisons with healthy volunteers or the general population might therefore be misleading.”

Please refer to the following point for further comments regarding areas for future research.

10. In the limitations section, they indicated that research should be conducted by more diverse patient groups. What types of patient groups?

We have elaborated on this issue (page 8):

“As stated in the limitation sections it is unclear to what extend our findings can be generalized. An initial step could be to recruit participants from more diverse treatment modalities, younger age group (e.g. adolescents 15 – 18 years) and with a wider variety of comorbidities. Since the majority of our participants belonged to the adult ADHD combined subtype, further research could also focus on the inattentive and hyperactive subtypes or presentations according to DSM-V.”
11. In the paragraph about limitations, it would be helpful if the authors discussed the potential self-selection bias attributed to the sample of 12 participants and how it may have influenced the findings.

We have expanded the limitation section (page 8):

“Third, since a majority of potential participants could not be interviewed for this study, there may have been an additional self-selection or non-response bias, further limiting generalizability.”

12. In the Conclusion and Abstract, the authors provided the suggestion that clinicians who treat patients with ADHD and comorbid tobacco use should apply the findings to improve treatment alliances. The implication is important; however, it would be more significant if the authors provided further elaboration on how it might be done.

We discuss the practical impact of these findings in comment 1, above, especially regarding improving treatment alliance. We believe it would be beyond the scope of this paper to discuss potential psychosocial interventions in detail, but we have included references elaborating on this point, which appear on page 9.

Minor Essential Revisions (authors can be trusted to make these revisions)

1. In the Methods section, the authors added useful information about the purpose of the larger epidemiologic study and the purpose of the qualitative sub-study. I suggest that the authors move that description to the end of the Introduction in the section. It could be combined with or precede the paragraph about the goals of the study.

We follow the reviewer’s suggestion and have moved this segment into the introduction section.

2. In the Methods section, the authors described the numbers of participants who were eligible, who were contacted, and who agreed to participate. 25% of the individuals agreed to participate. It would be helpful if the authors indicated reasons for the low participation rate based on data collected or potential explanations developed by the authors. Were the in-person format and lack of compensation potential barriers to participation?

We have further elaborated on this issue and included a paragraph in the Method section (page 4) about what we were able to ascertain regarding obstacles to study participation, as well as other possibilities:

“Obstacles to study participation were rarely addressed by potential participants. Most often participants reported of a lack of time. In three cases, potential participants agreed to be interviewed, but failed to keep their appointment and could not be reached afterwards. Other potential barriers could have included a lack of compensation, a lack of interest in the specific research topic or a perceived lack of anonymity because of digital recording.”

3. In the Methods section, the authors stated they used themes identified in “earlier interviews”. In their response to the reviewers, they indicated that it meant interviews conducted earlier for this study. I suggest they rewrite the sentence in the paper, so it is clear that the earlier interviews were from this study and not the larger epidemiologic study or another study.

We have rephrased this sentence to clarify this point. It now reads (page 4).
“In addition, we allowed themes and motives identified during the first interviews of this qualitative study to be explored in the ones that followed, combining the principles of maximum variation and complexity reduction in order to simultaneously widen the scope of results and examine previous assumptions [58].”

4. In the Methods, the authors added details about the transcription activities. It would be helpful if they provided some information about the background of the research team, which they identified with initials. Were they all researchers? Were they all trained in qualitative research methods? Any other background information that would increase the credibility of the research team? This information is actually provided in the limitations section. I recommend that they provide it in the Methods section.

We have included the following sentence in the Methods section (page 4):

“All researchers had received training either as psychologists (AF, AG) or as psychiatrists (ML, CF, AB, DE) and had previous research experience with qualitative methods.”

5. The addition of the topic/interview guide was useful. I recommend the authors put the information in a table instead in the body of the text.

We now present the topic guide in the form of a table (table 1).

6. In the Results, the authors stated that the patterns of smoking varied among the participants. Although they provided the findings in a table, I suggest they describe this interesting finding in more detail in the body of the text.

We now include more information in this paragraph (page 5). It now reads:

“At the time of the interview, all participants were currently smoking cigarettes, but their patterns of smoking varied greatly (from a minimum of 3-5 a week to a maximum of 35 a day), as did the severity of their nicotine dependence, according to the FTND (from very low to very high).”

7. The Results section would be coherent if the authors described the findings related to the influence of prescription drugs in terms of a separate theme. Then all the sub-headings would represent themes that emerged from the interview data.

We are hesitant to describe findings relevant to prescription drugs as a third theme because they do not present explanatory models linking ADHD and tobacco use per se, as voiced in Theme I and II. We add the following sentence (page 7) to clarify this point: “We describe these findings separately but do not label them as a theme, because they do not present explanatory models linking ADHD and tobacco use.”

8. In the second paragraph of the Discussion, the authors described a finding related to smoking being a “social behavior.” I recommend that the authors summarize all the findings about social factors in one section. I believe they fall more under Theme II. It would be helpful if the authors attempted to keep each theme distinct, although they noted there was some overlap.

We have reorganized Theme I and Theme II, in the Abstract, Results and in the Discussion section. Theme II is now labeled “Social behavior” and includes a paragraph and a sample quote and tobacco perceived effects on interpersonal relationships:
“Theme II: Smoking as a social behavior

Subjects also frequently expressed the view that smoking had positive effects on interpersonal relationships, a valuable asset for socializing that could be used as a way of connecting to others:

‘...smoking gives me a feeling of belonging and togetherness, something I can really enjoy, so I can lay back and smoke one [cigarette]...I find it very pleasant to be together with a group of people and everybody says, let's go, we will have a smoke, then I like it.’

Mrs. G. “

Thank you for continuing to consider our manuscript.

Yours sincerely,

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Carl Erik Fisher
Alex Gamma
Anna Buadze
Dominique Eich