

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Association of occupations with decreased semen quality in Eastern China: a cross-sectional study of 12,301 semen donors
AUTHORS	Tang, Feng; Jiang, Zhaoqiang; Jin, Mingying; Sheng, Huiqiang; Feng, Lingfang; Chen, Junfei; Li, Yongxin; Huang, Jing; Xu, Ling; Lou, Jianlin

VERSION 1 – REVIEW

REVIEWER	Montano, Luigi Azienda Sanitaria Locale Salerno, Andrology
REVIEW RETURNED	28-Feb-2022

GENERAL COMMENTS	<p>Comments and Suggestions for Authors:</p> <p>This paper proposes to examine the association of modifiable factors to semen quality in semen of donors (12,301 from 2006 to 2020) in Eastern China. Semen samples were analyzed according to WHO manual and this is the first study on a large sample to connect semen quality with lifestyle.</p> <p>In introduction there is a great attention on lifestyle and occupational factors, but nothing about environmental exposure due to living in polluted areas. I think it is important to mention for example in the Levine study the environmental factors and some studies conducted in highly polluted areas where is suggested the negative role of pollution on the semen quality.</p> <p>I suggest to see these manuscripts:</p> <p>a) Human semen as an early, sensitive biomarker of environmental exposure of healthy men living in highly polluted areas: a pilot biomonitoring study of trace elements in blood and semen and relationship with sperm quality and RedOx status</p> <p>b) Effects of a lifestyle change intervention on semen quality in healthy young men living in highly polluted areas in Italy: the FAST randomized controlled trial. doi: 10.1016/j.euf.2021.01.017.</p> <p>Anyway the study is well written and the large sample open to further insights.</p>
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REVIEWER	Eisenberg, Michael Baylor College of Medicine
REVIEW RETURNED	01-Mar-2022

GENERAL COMMENTS	<p>The authors have examined the association between occupation and semen quality in a cohort of potential semen donors in China. The study is large and identifies several associations.</p> <p>Major points</p>
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	<p>1. An examination on of the figure suggests that most men have comparable semen quality across all occupations. Visually all occupations appear similar. A table presentation of the n, % of men who have sub fertile semen quality would be useful for the reader</p> <p>2. The reasons for the differences are not certain. Stress, sedentary occupation, exposures, etc could all plausibly be related. If such data is available, it should be included. Otherwise, this limitation should be noted and the possible etiologies of differences should be expanded including chance.</p> <p>3. The association of other variables (eg age, BMI, smoking, etc) could also be presented to aid the reader on the data.</p> <p>4. An examination of interactions between risk factors and occupations would be helpful.</p>
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VERSION 1 – AUTHOR RESPONSE

Response to Reviewer 1

1. In introduction there is a great attention on lifestyle and occupational factors, but nothing about environmental exposure due to living in polluted areas. I think it is important to mention for example in the Levine study the environmental factors and some studies conducted in highly polluted areas where is suggested the negative role of pollution on the semen quality.

Response: We thank the reviewer for raising this question. We have mentioned some relative studies in the Introduction and Discussion sections (Para 1, Page 3; Para 3, Page 9). We have read the systematic review and meta-regression analysis in the Levine study. We also read other papers conducted in highly polluted areas. These articles give me a lot of inspiration, and we will focus on the association between environmental exposure and semen quality in our future studies.

2. I suggest to see these manuscripts:

- a) Human semen as an early, sensitive biomarker of environmental exposure of healthy men living in highly polluted areas: a pilot biomonitoring study of trace elements in blood and semen and relationship with sperm quality and RedOx status
- b) Effects of a lifestyle change intervention on semen quality in healthy young men living in highly polluted areas in Italy: the FASt randomized controlled trial. doi: 10.1016/j.euf.2021.01.017.

Response: Thank you very much for your kind suggestion. We have carefully read these manuscripts and revised our manuscript (Para 1, Page 3; Para 3, Page 9). We also added the mentioned manuscripts into the references.

Response to Reviewer 2

1. An examination on of the figure suggests that most men have comparable semen quality across all occupations. Visually all occupations appear similar. A table presentation of the n, % of men who have sub fertile semen quality would be useful for the reader

Response: Thank you for your recommendation. We added a table presentation of the n,% of subjects (Suppl. Table 2).

2. The reasons for the differences are not certain. Stress, sedentary occupation, exposures, etc could all plausibly be related. If such data is available, it should be included. Otherwise, this limitation should be noted and the possible etiologies of differences should be expanded including chance.

Response: Thank you for your suggestion. Indeed, there are many factors related to semen quality. Unfortunately, we did not investigate or measure these factors such as stress, sedentary working style, or other factors. We added the above limitations in the Discussion section (Para 3, Page 9).

3. The association of other variables (eg age, BMI, smoking, etc) could also be presented to aid the reader on the data.

Response: The odds ratios of other variables such as age, education, marriage status, and childbearing history have been added (Figure 1-4).

4. An examination of interactions between risk factors and occupations would be helpful.

Response: Thank you very much for your suggestion. Indeed, there may be some interaction between other risk factors and occupations. However, the occupation is classified into many categories in our study, while some of the occupations has a small sample size. Hence, if we add the interaction terms into the models, the degree of the models should be decreased dramatically, which makes the partial coefficients not stable or abnormal. We sincerely thank you for the suggestion again, and we will fully consider the interaction terms in future studies.