Author’s response to reviews

Title: Lifestyle and Environmental Contributions to Ovulatory Dysfunction in Women of Polycystic Ovary Syndrome

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Author’s response to reviews:

#Reviewer1:

1. In Table2, what was the accurate definition of active and passive smoking? Detailed information (for example, frequency or amount of smoking) should be added.

Re: Thank you for your insightful suggestion. Active smoking was defined as a person who currently smoke at least 1 cigarette per 3 days. Passive smoking was defined as a person who inhale smoke constantly from others in work or living area (Table2, line 454-455, Page21).

2. The description of "cooking oil fume contact" in Table 2 was ambiguous. There were so many women contacting cooking oil fume at home or even in work place, however, the times and period might different. What is the exactly meaning of it?

Re: Thank you for your question. Cooking oil fume contact was defined as women who cooked at home or workplace at least once per 3 days (Table2, Line 461, Page22).

3. Please explain the contradiction of the total sample size between the abstract (2217) and the method (2258).
Re: We are sorry for the mathematical error in the method section. In our research, a total of 2217 PCOS women were recruited, including 1979 Oligo-anovulation (OA) women and 238 non-OA women. Besides, 279 healthy control women of reproductive age were enrolled as controls. We have corrected the number in the Method section (Method section, Line69-71, Page4).

4. As mentioned in limitation "the exact caloric intake per day was not recorded", it was not suitable to define the hyper-caloric diet. Meat or vegetable favorable or balance diet were better.

Re: Thank you for your suggestion. We have revised the “hyper-caloric diet” to “meat favorable diet” in the manuscript and Table (Results section, Line122, Page6; Table2, Page 20; Table3, Page23).

5. Line 49"it is the most common cause of chronic anovulatory infertility", reference needed.

Re: Thanks. Reference was added (Background section, Line49, Page3).

6. Line 76, please describe more detailed about the cohort.

Re: The participants were recruited from a perspective cohort of women undergoing assisted reproductive technology treatment which focused on the long-term outcomes of these women (Methods section, Line 76-77, Page4).

7. There are still some grammar mistakes in the text. It would be better if the text could be revised by a native speaker.

Re: Thank you for your suggestion. The manuscript has been revised by a native speaker.

# Reviewer 2:

1. This paper needs considerable work before publication. Your conclusions are mostly not relevant (only BMI, smoking and hypercaloric diet are - and the latter was uncontrolled)
Re: We totally agree with your point of view that environment factors only contributed slightly to the anovulation in PCOS patients. Yet negative results still had scientific significance since there were only limited studies about environment factors, one of the two etiology of PCOS.

2. You need to be explicitly clear on what decoration means.

Re: We are sorry for the unclear definition of the indoor decoration. Indoor decoration means that indoor painting performed or large furniture moved within two years before incidence of dysmenorrhea. We have revised it on Table2(Table2, Line460, Page22). The results of our research were based on a self-report questionnaire, which allowed participants recording their own experiences instead of inferring from observing participants. It is approved and even used into guidance in some areas (Subar AF, J Nutr, 2015). However, social desirability bias cannot be overlooked. We have added it in the limitation section.

3. The paper is overlong for the quality of the data and needs to be reduced in length by 50% or more

Re: Thank you for your insightful suggestion. We have reduced some variables with no difference, and simplified Table and Results. After revised, lifestyle parameters included diet, exercise, insomnia, snoring, smoking, alcohol consumption, and tea drinking; environment pollutants contact parameters referred to plastic tableware usage, indoor decoration, air freshener usage and cooking oil fume contact (Table 2, Page20-22).

You need to work on your syntax (a lot)

Re: Thank you for your suggestion. The manuscript has been carefully revised by a native speaker.