

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

Title (Provisional)

Socioeconomic inequalities and dyslipidemia in adult population of the Ravansar Non-Communicable Disease Cohort Study: The Role of sex and age

Authors

Izadi, Neda; Yari-Boroujeni, Reza; Soofi, Moslem; Niknam, Mahdiah; Amiri, Parisa; Najafi, Farid

VERSION 1 - REVIEW

Reviewer	1
Name	Saini, Manpreet
Affiliation	Laxmi Chandravansi Medical College and Hospital
Date	17-Mar-2024
COI	None

1. In socio-economic status under the heading of Methods, words are repeated like 'access to the internet, and car (based on its price)'.
2. In Methods, it is not clear that Informed consent from all participant was obtained by Ravansar Non-Communicable Disease (RaNCD) Cohort Study or the authors of current study?

Reviewer	2
Name	Asadi-Lari, Mohsen
Affiliation	Iran University of Medical Sciences, Epidemiology
Date	02-May-2024
COI	None

This is a valid piece of research which indicates cross-sectional analysis of socioeconomic disparities in a defined population within PERSIAN Cohort. Readers may be more interested

in understanding the effects of SES inequalities on lipid profile in long term, thus the respected authors are highly encouraged to continue their investigations over time.

Major comment:

1. While talking about the effect of unhealthy life style on lipid profile which is well known for many years, readers may need to know what exactly this research may add/oppose the current facts. Further analysis is required.

Minor comments:

2. If marital status has not been examined with other variables, there is no point to be mentioned.

3. Authors indicate that: About 25.74% of participants reported at least one comorbidity. Is this self reported or based on clinical examinations? If this is self-reported, there should be a level of uncertainty

4. Page 10, Line 5: "In women, TG levels increased with age and were generally higher in men and individuals with high SES." Please rephrase as this sentence is confusing.

5. What is your interpretation once you are talking about gender imbalance in this phrase: "hypertriglyceridemia was higher in men with high SES"?

6. Writing style throughout the manuscript needs to be re-considered. For example: "Findings found that..." in P.11, Line 4, should be replace by a better wording such as "Our findings indicated that".

7. Discussion, last line: How it's possible that males in affluent groups are doubled of females? This is highly skewed population group.

8. Discussion, P.15: What do you mean by 'access to health determinants'?

VERSION 1 - AUTHOR RESPONSE

Reviewer: 1

Dr. Manpreet Saini, Laxmi Chandravansi Medical College and Hospital

Comments to the Author:

1. In socio-economic status under the heading of Methods, words are repeated like 'access to the internet, and car (based on its price)'.

Answer: Different questions have been asked; one is “Personal computer access to the internet, and car (based on its price) (for whole family!)” and the other is “Access to the internet, and car (based on its price) for personal use”.

2. In Methods, it is not clear that informed consent from all participant was obtained by Ravansar Non-Communicable Disease (RaNCD) Cohort Study or the authors of current study?

Answer: “by Ravansar Non-Communicable Disease (RaNCD) Cohort Study” was added to Ethics approval and consent to participate section.

Reviewer: 2

Dr. Mohsen Asadi-Lari, Iran University of Medical Sciences

Comments to the Author:

This is a valid piece of research which indicates cross-sectional analysis of socioeconomic disparities in a defined population within PERSIAN Cohort. Readers may be more interested in understanding the effects of SES inequalities on lipid profile in long term, thus the respected authors are highly encouraged to continue their investigations over time.

Major comment:

1. While talking about the effect of unhealthy life style on lipid profile which is well known for many years, readers may need to know what exactly this research may add/oppose the current facts. Further analysis is required.

Answer: We appreciate your insights on the impact of unhealthy lifestyles on lipid profiles. In response to your comment, we would like to clarify that our research aims to provide a deeper understanding of how SES interacts with age and sex to influence dyslipidemia. While the effects of unhealthy lifestyles on lipid profiles are well-documented, our study offers a unique perspective by utilizing the concentration index to analyze these inequalities within a specific population. We believe our findings will contribute to the existing literature by highlighting the nuanced relationships between SES, age, and sex concerning dyslipidemia.

Minor comments:

2. If marital status has not been examined with other variables, there is no point to be mentioned.

Answer: Thank you for your intriguing offer. This study aims to investigate the role of age and sex in the inequality of the outcome. In addition, while examining marital status, no

significant association was found regarding this variable. Given the numerous findings in this study, the authors have decided to explore marital status and the spousal effect, along with their relationship to the outcome of interest, in a separate article.

3. Authors indicate that: About 25.74% of participants reported at least one comorbidity. Is this self-reported or based on clinical examinations? If this is self-reported, there should be a level of uncertainty.

Answer: Yes, it is self-reported, and in response to your concern, the statement 'Another limitation of the study is the reliance on self-reported data for some questions and variables' has been added to the limitations section.

4. Page 10, Line 5: "In women, TG levels increased with age and were generally higher in men and individuals with high SES." Please rephrase as this sentence is confusing.

Answer: The sentence has been revised for clarity: "In women, TG levels increased with age. In addition, TG levels were generally higher in men and individuals with high SES."

5. What is your interpretation once you are talking about gender imbalance in this phrase: "hypertriglyceridemia was higher in men with high SES"?

Answer: Our interpretation suggests that within the context of our study, men with high SES exhibit a higher prevalence of hypertriglyceridemia compared to their female counterparts. This finding may indicate that, despite the general understanding that higher SES is often associated with better health outcomes, there are specific gender-related factors that contribute to lipid profile disparities. Possible explanations for this gender imbalance could include lifestyle factors, such as dietary habits and physical activity levels, which may differ between men and women in high SES groups. Also, social and cultural influences may play a role in how men and women experience and manage health risks related to dyslipidemia.

6. Writing style throughout the manuscript needs to be re-considered. For example: "Findings found that..." in P.11, Line 4, should be replaced by a better wording such as "Our findings indicated that".

Answer: Thank you. It was revised.

7. Discussion, last line: How it's possible that males in affluent groups are doubled of females? This is highly skewed population group.

Answer: The observed doubling of males compared to females in affluent groups may be attributed to several factors, including cultural preferences, socioeconomic dynamics, and education level. In addition, given the significant difference in sex representation within the

affluent groups, we recognized the potential role of sex as a confounder in our analysis. To address this, we conducted separate analyses for each sex to ensure that our findings accurately reflect the associations within each group. This approach allows us to better understand the dynamics at play and to mitigate any confounding effects that sex may have on the results.

8. Discussion, P.15: What do you mean by 'access to health determinants'?

Answer: To clarify this statement, we revised it to: “access to health resources and lifestyle factors.”