

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Cohort Profile: A natural population cohort study on long-lived adults: West China Longevity and Aging Procedure (WCLAP)
<b>AUTHORS</b>	WU, Xiaochu; Zhang, Tianyao; Zhang, Yan; She, Yan; Wang, Li; Gao, Yanling; Deng, Yiping; Chen, Meijuan; He, Yan; Chen, Xiaoyan; Hao, Qiukui; Yue, Jirong; Dong, Birong

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Fernandez-Araque, Ana Universidad de Valladolid
<b>REVIEW RETURNED</b>	02-Dec-2021

<b>GENERAL COMMENTS</b>	<p>- line 12 of introduction there is no point that separates sentences</p> <p>- line 34 -36, it would be better if they put the reliability and consistency with Cronbach's alpha of the questionnaire, these data do not exist</p> <p>This manuscript has two main points for improvement:</p> <p>1-It has a strong methodological development, use of scales and taking biological samples that are not reflected in the results or enough discussion.</p> <p>2- This study uses many scales that are not referenced, due to lack of references.</p>
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<b>REVIEWER</b>	Wu, Qingping Guangdong Academy of Sciences, Microbial Safety and Health
<b>REVIEW RETURNED</b>	25-Jan-2022

<b>GENERAL COMMENTS</b>	<p>The West China Longevity and Aging Procedure cohort study (WCLAP) by Dong et al, was a grand and comprehensive survey study. The research closely focused on the major strategy of healthy aging, based on the frontiers of geriatric disease prevention and major social needs, and focused on major scientific and technological issues in geriatrics. On the basis of multi-disciplinary intersection, it focused on aging mechanism and anti-aging, and established a health assessment and management system for the elderly, and was committed to improving the level of geriatric clinical research and disease diagnosis and treatment technology.</p> <p>This research is a very perfect systematic work. If the research plan described by the author is followed, it will produce excellent research results and scientific discoveries later. The implementation of this project is of great significance for the study of aging and its prevention in the elderly population in western China and even the whole country.</p>
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	<p>However, the current article is mainly a single description of the research cohort "A population of 1,537 adults aged 80 years and above, living in the community, have been enrolled in the program as research participants", research methods "Data collection included a comprehensive assessment of the participant's health, instrumental tests, and the collection of biomedical-biobank samples" and future research plans "Analysis of biological samples facilitates biological characterization at the microscopic level through proteomics, metabolomics, genomics, and other techniques, exploring sarcopenia, disability, dementia, caregiver burden, aging biomarkers, and other influencing factors", without any presentation of research results, discussions and research conclusions. Perhaps more significant discoveries will be made as later authors explore sarcopenia, disability, dementia, caregiver burden, biomarkers of aging, and other influencing factors based on proteomics, metabolomics, genomics, and other techniques.</p> <p>Therefore, I hope that the authors can specifically supplement what technologies and methods are based on (eg: proteomics, metabolomics, genomics and others), what diseases are studied (eg: sarcopenia, disability, dementia, caregiver burden, aging biomarkers and other influencing factors), and what results and conclusions are obtained.</p>
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### VERSION 1 – AUTHOR RESPONSE

#### Review Comments

Reviewer 1:

Comment 1: line 12 of introduction there is no point that separates sentences

Reply 1: (see Page 5, line 5).

Changes in the text: ...next global public health challenge[1]. There is much research ongoing to determine...

Comment 2: line 34 -36, it would be better if they put the reliability and consistency with Cronbach's alpha of the questionnaire, these data do not exist.

Reply 2: (see Page 7, line 17-19).

Changes in the text: Before the formal use of the questionnaire, our team carried out pre-test among the old adult in the community to continuously verify the reliability and validity of the questionnaire. The internal consistency was determined from Cronbach's alpha calculation. Our questionnaire had a Cronbach's alpha of 0.91, and finally was confirmed the final version.

Reviewer 2:

Comment 1: what technologies and methods are based on (eg: proteomics, metabolomics, genomics and others), what diseases are studied (eg: sarcopenia, disability, dementia, caregiver burden, aging biomarkers and other influencing factors), and what results and conclusions are obtained.

Reply 1: (see Page 26, line10- Page 27, line 4).

Changes in the text: Global aging problem has been coming. How to improve the longevity and quality of life is a great challenge for modern medicine, biology and sociology. Centenarians are an important model to study longevity and "healthy aging". The project will conduct experiments on gene and protein levels of centenarians from blood samples to explore the mechanism of longevity and aging, and provide a theoretical basis for the prevention and treatment of aging-related diseases, which would be reasonable for extension of life and realization of healthy aging.

Frailty syndrome is a systemic change, which companions with multi-system dysfunction, especially the decline of capacity of physiological reserve in neuromuscular, metabolic and immune systems in the elderly. Frailty could reduce the ability to fight stress and significantly increasing the risk of adverse events in the elderly. In order to evaluate the diagnostic accuracy of frailness, the selection, detection, validation and clinical application of biomarkers representing different stages of frailness based on biological theory were established from the perspective of genomics and epigenetics. We are going to further explore the biological mechanisms of elderly health aging, reveal changes in the longevous elderly, discover some novel important longevity-related genes and their related functions and signal path, from genomics, apparent genome, transcriptome, proteomics, metabolomics, microbic genomics level. Furthermore, confirmatory researches need to be extensive based on biomarkers associated with longevity among population. In combination with animal models, anti-aging drugs, cells and other therapeutic strategies would be discovered.

Editor(s)' Comments to Author:

- Please complete a thorough proofread of the text and correct any spelling and grammar errors that you identify.

Reply: I have identified and rectified the spelling and grammar errors.

#### VERSION 2 – REVIEW

<b>REVIEWER</b>	Fernandez-Araque, Ana Universidad de Valladolid
<b>REVIEW RETURNED</b>	05-Apr-2022
<b>GENERAL COMMENTS</b>	The comments I made to the first revision have been addressed and the paper has been improved.