

# Yan Luo

City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China

Email: [luo.yan@my.cityu.edu.hk](mailto:luo.yan@my.cityu.edu.hk) | Website: <https://luoyan.netlify.app>

## Education

### City University of Hong Kong

*Doctor of Philosophy in Data Science*

Supervisor: Prof. Qingpeng Zhang

Hong Kong SAR, China

Sep 2022–Present

### Peking University

*Master of Science in Epidemiology and Health Statistics*

GPA: 3.3/4.0 (85–89/100)

Supervisor: Dr. Beibei Xu

Thesis: Current Status of Frailty and its Associations with the Longitudinal Development of Multimorbidity among American Older Adults

Beijing, China

Sep 2020–Jul 2022

### Peking University

*Bachelor of Medicine in Preventive Medicine*

GPA: 3.12/4.00 (81.05/100.00)

Beijing, China

Sep 2015–Jul 2020

## Publications

# indicates equal contribution

### Journal articles (Published)

- Luo, Y., Chen, Y., Wang, K., De Fries, C. M., Huang, Z., Xu, H., Yang, Z., Hu, Y., & Xu, B. (2023). Associations between multimorbidity and frailty transitions among older Americans. *Journal of Cachexia Sarcopenia and Muscle*, 14(2), 1075–1082. <https://doi.org/10.1002/jcsm.13197>. (2023 IF: 9.4; Geriatrics & Gerontology: Ranked 4/74)
- Luo, Y., Huang, Z., Liu, H., Xu, H., Su, H., Chen, Y., Hu, Y., & Xu, B. (2022). Development and Validation of a Multimorbidity Index Predicting Mortality Among Older Chinese Adults. *Frontiers in Aging Neuroscience*, 14, 767240. <https://doi.org/10.3389/fnagi.2022.767240>. (2023 IF: 4.1; Geriatrics & Gerontology: Ranked 22/74)
- Luo, Y.<sup>#</sup>, Zhang, Q.<sup>#</sup>, Han, L., Shen, Z., Chen, Y., Wang, K., Huang, Z., De Fries, C. M., Cao, G., Su, H., Xu, H., Chen, Z., Ren, Z., Hu, Y., & Xu, B. (2022). Trends in the prevalence of vision impairment among the oldest-old Chinese population from 1998 to 2018. *Journal of Global Health*, 12, 11006. <https://doi.org/10.7189/jogh.12.11006>. (2023 IF: 4.5; Public, Environmental & Occupational Health: Ranked 43/403)
- Huang, Z. T., Luo, Y., Han, L., Wang, K., Yao, S. S., Su, H. X., Chen, S., Cao, G. Y., De Fries, C. M., Chen, Z. S., Xu, H. W., Hu, Y. H., & Xu, B. (2022). Patterns of cardiometabolic multimorbidity and the risk of depressive symptoms in a longitudinal cohort of middle-aged and older Chinese. *Journal of Affective Disorders*, 301, 1–7. <https://doi.org/10.1016/j.jad.2022.01.030>. (2023 IF: 4.9; Psychiatry: Ranked 38/276)
- Huang, Z. T., Lai, E. T., Luo, Y., & Woo, J. (2024). Social Determinants of Intrinsic Capacity: A Systematic Review of Observational Studies. *Ageing Research Reviews*, 102239. <https://doi.org/10.1016/j.arr.2024.102239>. (2023 IF: 12.5; Geriatrics & Gerontology: Ranked 3/74)
- Xu, H. W., Liu, H., Luo, Y., Wang, K., To, M. N., Chen, Y. M., Su, H. X., Yang, Z., Hu, Y. H., & Xu, B. (2024). Comparing a new multimorbidity index with other multimorbidity measures for predicting disability trajectories. *Journal of Affective Disorders*, 346, 167–173. <https://doi.org/10.1016/j.jad.2023.11.014>. (2023 IF: 4.9; Psychiatry: Ranked 38/276)
- Zhou, W.<sup>#</sup>, Liu, Y.<sup>#</sup>, Xu, B.<sup>#</sup>, Wang, S.<sup>#</sup>, Li, S., Liu, H., Huang, Z., Luo, Y., Hu, M., Wu, W., Zhang, Z., Long, X., Zou, W., Bian, Y., Zou, X., Elliott, M., Yue, L., Deng, H., Chen, H., Gao, X., ... Gao, Y. (2021). Early identification of patients with severe COVID-19 at increased risk of in-hospital death: a multicenter case-control study in Wuhan. *Journal of Thoracic Disease*, 13(3), 1380–1395. <https://doi.org/10.21037/jtd-20-2568>. (2023 IF: 2.1; Respiratory System: Ranked 59/100)
- Yao, S. S., Xu, H. W., Han, L., Wang, K., Cao, G. Y., Li, N., Luo, Y., Chen, Y. M., Su, H. X., Chen, Z. S., Huang, Z. T., Hu, Y. H., & Xu, B. (2022). Multimorbidity measures differentially predicted mortality among older Chinese adults. *Journal of Clinical Epidemiology*, 146, 97–105. <https://doi.org/10.1016/j.jclinepi.2022.03.002>. (2023 IF: 7.3, Health Care Sciences & Services: Ranked 7/174)
- Cao, G., Wang, K., Han, L., Zhang, Q., Yao, S., Chen, Z., Huang, Z., Luo, Y., Hu, Y., & Xu, B. (2021). Visual trajectories and risk of physical and cognitive impairment among older Chinese adults. *Journal of the American Geriatrics Society*, 69(10), 2877–2887. <https://doi.org/10.1111/jgs.17311>. (2023 IF: 4.3; Geriatrics & Gerontology: Ranked 18/74)
- Cao, G. Y., Chen, Z. S., Yao, S. S., Wang, K., Huang, Z. T., Su, H. X., Luo, Y., De Fries, C. M., Hu, Y. H., & Xu, B. (2023). The association between vision impairment and cognitive outcomes in older adults: a systematic review

and meta-analysis. *Aging & Mental Health*, 27(2), 350–356. <https://doi.org/10.1080/13607863.2022.2077303>. (2023 IF: 2.8; Psychiatry: Ranked 105/276)

- Yao, S. S., Meng, X., Cao, G. Y., Huang, Z. T., Chen, Z. S., Han, L., Wang, K., Su, H. X., Luo, Y., Hu, Y., & Xu, B. (2020). Associations between Multimorbidity and Physical Performance in Older Chinese Adults. *International journal of environmental research and public health*, 17(12), 4546. <https://doi.org/10.3390/ijerph17124546>.

#### Journal articles (In Process)

- Luo, Y., Guo, M., & Zhang, Q. Machine Learning Approaches to Identify Social Determinants of Frailty Among Middle-Aged and Older Adults in the USA, England, and China. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4652504](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4652504) (Preprint, under review in *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*).
- Luo, Y., Yip, P. S., & Zhang, Q. The beneficial impact of Internet use on the mental well-being among adults aged ≥50 years in 23 countries. <https://www.researchsquare.com/article/rs-3682539/v1> (Preprint, under review in *Nature Human Behaviour*).

#### Books

- Li Y, Zhang Y, Xu B, Yu N, Cao GY, Chen ZS, Huang ZT, Luo Y, Su HX, Yao SS. Medical Information Analysis and Clinical Decision Support. Beijing: Peking University Medical Press. 2020. ISBN: 9787565922046.

#### Conferences

- Luo, Y., Guo, M., & Zhang, Q. (2024). Machine Learning Approaches to Identify Social Determinants of Frailty Among Middle-Aged and Older Adults in the USA, England, and China. [https://agen.iafor.org/presentation/submission76897/?sf\\_action=get\\_data&sf\\_data=all&sfm\\_thestream=Frailty](https://agen.iafor.org/presentation/submission76897/?sf_action=get_data&sf_data=all&sfm_thestream=Frailty). *The 10th Asian Conference on Aging & Gerontology (AGen2024)*. Tokyo, Japan. March 25–29, 2024. Scholarship recipient (<https://agen.iafor.org/iafor-grant-and-scholarship-recipients-agen2024/>).
- Luo, Y., Huang, Z., Xu, H., Chen, Z., Su, H., Liu, H., & Xu, B. (2021). Development and validation of multimorbidity index predicting mortality among Chinese older adults. *Innovation in Aging*, 5(Supplement\_1), 609. <https://doi.org/10.1093/geroni/igab046.2319>. *The Gerontological Society of America (GSA) 2021 Annual Scientific Meeting*. Online. November 2021.
- Yang, Z., Luo, Y., Chen, Z., Xu, H., & Xu, B. (2023). Joint trajectories of multimorbidity and frailty among older Americans. *Innovation in Aging*, 7(Supplement\_1), 504. <https://doi.org/10.1093/geroni/igad104.1656>. *The Gerontological Society of America (GSA) 2023 Annual Scientific Meeting*. December 2023.
- Xu, H., Luo, Y., Huang, Z., Chen, Z., Su, H., & Xu, B. (2021). Comparisons of Different Multimorbidity Measures to Predict Physical Function Among Middle-Aged and Older Chinese. *Innovation in Aging*, 5(Supplement\_1), 544-544. <https://doi.org/10.1093/geroni/igab046.2077>. *The Gerontological Society of America (GSA) 2021 Annual Scientific Meeting*. Online. November 2021.

#### Awards and Honors

- The Second Prize of National Academic Scholarship, Peking University (2021-2022, 2020-2021)
- Award for Academic Excellence, Peking University (2019-2020)
- The Chugai Scholarship for Excellent Medical Students, Peking University (2018-2019)
- The Second Prize Scholarship for Excellent Medical Students (The Eisai [China] Pharmaceutical Scholarship), Peking University (2017-2018)
- Award for Contribution in Student Organizations, Peking University (2017-2018, 2018-2019)

#### Projects

<b>Multimorbidity measures</b>	Medical Informatics Center, Peking University
Graduate Student Researcher	Nov 2020–Feb 2022
<ul style="list-style-type: none"><li>• Developed a multimorbidity index incorporating disease combinations identified by the association rule mining to predict mortality using the logistic regression among 11,853 older Chinese adults.</li><li>• Explored multimorbidity patterns by data mining methods including the explanatory factor analysis and the group-based trajectory model; compared the performance of different multimorbidity measures in predicting mortality and disability by Cox proportional hazards models.</li><li>• Presented research in the conference through a poster presentation as the first author; published two papers in the <i>Frontiers in Aging Neuroscience</i> (as the first author) and <i>Journal of Clinical Epidemiology</i> (as the co-author); assisted in completing the final research project report.</li></ul>	

<b>Frailty and multimorbidity</b>	Medical Informatics Center, Peking University
Graduate Student Researcher	May 2021–Aug 2022
<ul style="list-style-type: none"><li>• Identified multimorbidity patterns using the latent class analysis; examined the association between multimorbidity patterns and dynamic frailty transitions; described the trajectories of frailty status and multimorbidity among older populations.</li><li>• Published a paper in the <i>Journal of Cachexia, Sarcopenia and Muscle</i> as the first author.</li></ul>	

### **Cardiometabolic multimorbidity**

Medical Informatics Center, Peking University

Graduate Student Researcher

Aug 2020–Jan 2022

- Examined the associations between cardiometabolic multimorbidity and adverse health outcomes, including depressive symptoms and disability, by generalized estimation equation models among more than 20,000 Chinese adults.
- Described the transitions of cardiometabolic disease, multimorbidity, and mortality utilizing multi-state Markov models among 17,250 older patients with hypertension.
- Investigated the literature related to multimorbidity patterns/clusters and the network analysis in the past five years; gained expertise in the complex network and overlapping community detection.
- Published three papers in the *Journal of Affective Disorders*, *Journal of Jilin University (Medicine Edition)*, and *Chinese Journal of Prevention and Control Non-communicable Diseases* (all as the second author); assisted in completing the interim research project report; cooperated in writing a grant proposal.

### **Trends in the prevalence of vision impairment**

Medical Informatics Center, Peking University

Graduate Student Researcher

Jun 2020–Jul 2022

- Analyzed a non-linear trend based on repeated panel data from 45,849 older Chinese adults using generalized estimation equation and natural cubic spline models.
- Acquired in-depth knowledge on trend analyses, such as the Cochran-Armitage test, linear regression, and logistic regression for a linear trend, as well as the polynomial regression, Joinpoint regression, and restricted cubic spline regression for a non-linear trend.
- Guided other team members of our research group to analyze the trends in the prevalence of hearing impairment and tooth loss.
- Published a paper in the *Journal of Global Health* as the first author.

### **Identification of patients with severe COVID-19**

Medical Informatics Center, Peking University

Data analyst

Feb 2020–Jul 2020

- Organized data extracted from the medical records of 93 pairs of patients admitted to three hospitals in Wuhan; conducted a multicenter, age-matched case-control study.
- Explored the risk factors associated with in-hospital mortality by the logistic regression; compared the differences in laboratory variables between admission days 1, 4, 7, and 10; compared temporal trends of laboratory data between survivors and non-survivors using mixed linear models.
- Published a paper in the *Journal of Thoracic Disease* as the co-author.