Keling WANG

Erasmus MC

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About me

I am a research master student specialized in epidemiology, with a bachelor's background in nursing sciences and trained as a nurse practitioner. I was also previously trained in molecular medicine lab skills and organic synthesis in chemistry. I conduct epidemiological, methodological studies and interdisciplinary qualitative research. I have broad research interests including causal inference methods, diabetes and endocrinology epidemiology, and transgender healthcare. Currently, I am working on general causal inference topics and doing research about causal language use under supervision.

Education

Erasmus Universiteit Rotterdam & Erasmus MC   Sep 2023 – Jun 2025

Research Master in Health Science, Specialization Epidemiology   120 ECTS   *Rotterdam, The Netherlands*

- *Relevant courses:* biostatistics, clinical epidemiology, causal inference, genetic epidemiology & omics data analysis
- *Affiliated research group:* causal inference group, dept. of epidemiology
- *Thesis:* Causal language use in clinical practice guideline: a critical review   Supervisor: Dr. Jeremy Labrecque, Department of Epidemiology

Xiamen University   Jun 2023

Bachelor of Science in Nursing Sciences   240 ECTS   *Xiamen, Fujian, China*

- *Relevant courses:* cell biology, biochemistry, systematic anatomy, pharmacology, microbiology and immunology
- *Thesis:* Comparative efficacy of different eating patterns in type 2 diabetes and prediabetes: arm-based Bayesian network meta-analysis   Supervisor: Dr. Yang Liu, School of Medicine

Language

English	Reading: C2	Listening: C2	Writing: C1	Speaking: C1	*Overall CEFR level:* **C1**
Dutch	Reading: B1	Listening: A2	Writing: A2	Speaking: A2	*Overall CEFR level:* **A2**
Chinese Mandarin					native speaker

Working experience

Department of Epidemiology, Erasmus MC   Nov 2023 – present

Research Intern   *Rotterdam, The Netherlands*

- *Responsibility:* Conducting research on thesis project, causal language use, clinical data analysis, and causal inference methodologies; attending research meetings and seminars; collaborating with other master students and PhD candidates.

School of Medicine, Xiamen University   Aug 2022 – Jul 2023

Research Assistant   *Xiamen, Fujian, China*

- *Responsibility:* Helping on research manuscript preparation, article submission and revision, and online systematic review and meta-analysis training course design and preparation.

The First Affiliated Hospital of Xiamen University   Jun 2022 – May 2023

Nurse Intern   *Xiamen, Fujian, China*

- *Responsibility:* Participating in clinical nursing practice, management, health promotion, and operations under the supervision of registered nurses.

Cochrane Canada and McMaster University   Aug 2022 – Mar 2023

Intern in eCOVID-19 RecMap workgroup   *online*

- *Responsibility:* screening and data selection of guidelines and guidance for the eCOVID-19 evidence map collection; data cleaning; and data management. Listed in the contributor list: https://covid19.recmap.org/about.

Publications

1. Li L, Pan H, **Wang K***, et al. **Factors influencing overdose and misuse of gender-affirming medication in Chinese transgender and gender diverse individuals: a qualitative study of experience and perspectives.** *International Journal of Transgender Health* **2024**; online ahead of print. DOI: 10.1080/26895269.2024.2316693

- Co-corresponding author and project leader. This paper aimed to investigate related factors of gender-affirming medication overdose and misuse among Chinese transgender and gender diverse individuals based on their experience and perspectives, and develop a corresponding framework for further studies.

-   We used an inductive thematic analysis and semi-structural interviews, as well as expert panels. We interviewed 21 gender diverse youths and built a conceptual framework with five domains and 14 topics to help understand the behavior of gender-affirming medication overdose and misuse.

2. **Zeng B**, Pan H, Li F, et al. **Comparative efficacy of different eating patterns in the management of type 2 diabetes and prediabetes: an arm-based Bayesian network meta-analysis**. *Journal of Diabetes Investigation* 2023;14(2):263-88. DOI: <u>10.1111/jdi.13935</u> (***Another name*** *used for past publications.*)
-   First author. This paper aimed to compare between fourteen commonly used dietary patterns about their effect in patients with type 2 diabetes and prediabetes with different critical clinical outcomes.
-   We used an arm-based Bayesian approach and gave GRADE quality of evidence ratings for each piece of evidence based on minimal clinically important differences. The study gave recommendations for diet choices based on different clinical outcomes.

3. **Zeng B**, Jin Y, Cheng S, et al. **Administration approaches of nursing assistants in hospitals: a scoping review.** *BMJ Open* 2022;12:e063100. DOI: <u>10.1136/bmjopen-2022-063100</u>
-   First author. This study performed a scoping review on currently available approaches and frameworks about the administration of nursing assistants in hospitals worldwide. We selected 36 studies, identified 1 model, 9 administration methods, 15 educational programs and 7 appraisal tools. We conducted frequency effect size analysis and found 15 topics of the main focus at four levels across the literature.

4. **Zeng B**, Du J. **Evidence summary of low-carbohydrate diets for type 2 diabetes mellitus management.** *Chinese Journal of Nursing* 2022;57(14):1756-65. DOI: <u>10.3761/j.issn.0254-1769.2022.14.014</u>. [In Chinese]
-   First author. This study summarized available evidence of the use of low-carbohydrate diets in the management of type 2 diabetes and gave recommendations.

Working papers and projects

1. Causal language use in clinical practice guidelines: a critical review
Dec 2023 – Dec 2024
Rotterdam
-   This study aims at evaluating the use of causal words and the implied causation in diabetes clinical practice guidelines. We evaluate the use of causal words and the strength of causation in guideline recommendations, guideline supporting evidence, original studies, and their alignment.
-   This study is registered at OSF (DOI: <u>10.17605/OSF.IO/25847</u>) and the manuscript will be submitted to an epidemiological journal for publishing.

2. Formulating causal questions: causal estimands for everyone
Apr 2024 – Jun 2024
Rotterdam
-   This study aims to provide a comprehensive list of causal estimands and discuss the rationale beyond, as well as how to build up one's own causal estimand in practice. We also provide a framework and practical illustration by which one can follow a newly proposed causal estimand-based approach for estimating causal effects in epidemiological studies. The manuscript will shortly be submitted to an epidemiological journal for publishing.

3. Bounding heterogeneity of treatment effect using aggregated level data
May 2024 – present
Rotterdam
-   This study aims to develop causal estimators and causal estimation procedures for the heterogeneity of treatment effect using aggregated level publicly available data, for example randomized controlled trial summary data in meta-analysis. We derive identifiability conditions for a conditional average treatment effect using aggregated level data, develop estimators and give their statistical properties, and perform simulation studies. The associated manuscript will be submitted to a biostatistical journal for publishing.

4. Who will benefit from screening: counterfactual prediction modelling study
May 2024 – present
Rotterdam
-   This study aims to find possible subgroups determined by patient characteristics that could benefit from ovarian cancer screening. We re-analyze the PLCO ovarian cancer screening randomized trial dataset using a novel counterfactual prediction modelling technique in a time-varying dynamic treatment regime setting and in the presence of competing events.

Programming projects

1. Social network analysis and anonymization
Dec 2023
Rotterdam
-   A Python project aiming to anonymize a large social network to make nodes less identifiable using various edge removing algorithms, and evaluate the anonymization effectiveness using neighborhood uniqueness. This is part of a data science course.

2. Confounding structure and estimation in the presence of interaction
Feb 2023
Rotterdam
-   A simulation project on R to explore the efficacy and performance of both inverse probability treatment weighting (IPTW) and outcome regression estimators to estimate the average treatment effect in the presence of interaction between a third variable and the confounding structure.

Skills

Programming
-   R and Python, both functional programming and OOP. Familiar with package/library development and release.
-   Basic C++.

Computer skills
-   LaTeX; (R)markdown; Wolfram Mathematica; basic Linux configuration and use; and GitHub version control.

Statistics and data analysis tools
-   R and Python; SPSS; PASS; AMOS; Plink; Review Manager; and NVivo for qualitative analysis.