Dr. Sara Manochehri



Personal Information

Full Name: Sara Manochehri
Date of Birth: 23 April 1990 (1369/02/03)
Place of Birth: Kermanshah, Iran
Nationality: Iranian

Academic Rank: Assistant Professor, Department of Epidemiology and Biostatistics.
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EDUCATION

Ph.D. in Biostatistics Hamadan University of Medical Sciences, Iran. **Dissertation Title** Extension of a Decision Tree Method for the Analysis of Correlated Ordinal Data	**2025 (1404)**
M.Sc. in Biostatistics Kermanshah University of Medical Sciences, Iran. **Thesis Title** A Comparative Evaluation of Random Forest and Support Vector Machine Data-Mining Methods for Predicting Multiple Sclerosis	**2018 (1397)**
B.Sc. in Statistics and Applications Razi University, Kermanshah, Iran.	**2014 (1393)**

RESEARCH INTERESTS

- Biostatistics
- Machine learning in medicine and public health
- Longitudinal and correlated data

TEACHING EXPERIENCE

Teaching experience at Kermanshah University of Medical Sciences and Hamadan University of Medical Sciences, including courses for undergraduate and postgraduate students in health-related disciplines.

- Biostatistics and Research Methods
- Vital Statistics
- Advanced Statistics
- Research Methods
- Introductory Statistics

SELECTED PUBLICATIONS

- Comparison of support vector machine based on genetic algorithm with logistic regression to diagnose obstructive sleep apnea. Journal of Research in Medical Sciences(2018).
- The Prediction of Obstructive Sleep Apnea Using Data Mining Approaches. Archives of Iranian Medicine(2018).
- Prognosis of multiple sclerosis disease using data mining approaches: random forest and support vector machine based on genetic algorithm. Tehran University Medical Journal(2019).
- Identifying the Most Important Factors Associated with Multiple Sclerosis Using the Decision Tree Method. Iranian Biomedical Journal(2019).
- Evaluation of Factors Affecting the Severity of Diabetic Foot Ulcer in Patients with Diabetes. Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy(2020).
- Random forest model to identify factors associated with anabolic-androgenic steroid use. BMC Sports Science, Medicine and Rehabilitation(2021).
- Predicting preeclampsia and related risk factors using data mining approaches: A cross-sectional study. International Journal of Reproductive BioMedicine(2021).
- Risk factors associated with underweight in children aged one to two years: a longitudinal study. BMC Public Health(2024).
- A multilevel analysis of factors associated with wasting in children one to two years old in Hamadan city. Scientific Reports(2024).
- Machine learning applications in forecasting patient satisfaction and clinical outcomes after carpal tunnel release: a retrospective study. BMC Musculoskeletal Disorders(2025).
- Evaluating the performance of different machine learning algorithms based on SMOTE in predicting musculoskeletal disorders in elementary school students. BMC Medical Research Methodology(2025).

SELECTED RESEARCH PROJECTS

- Comparing the performance of machine-learning algorithms for predicting musculoskeletal disorders in elementary-school students in Hamadan.
- Comparing data-mining methods—including random forest, support vector machine, naïve Bayes, artificial neural networks, and k-nearest neighbors—for predicting breast cancer.
- Comparing naïve Bayes and artificial neural networks for predicting multiple sclerosis.
- Cardiovascular manifestations in patients with COVID-19 in Hamadan.
- The role of a spiritual-care program in loneliness and depression among patients attending hemodialysis centers in Hamadan.
- The effectiveness of a spiritual-care program on life satisfaction and perceived stress among patients with leukemia in Hamadan.
- Epidemiological patterns of liver flukes and hydatid cyst infection in livestock and related populations.
- Environmental health and safety challenges along the Arbaeen pilgrims' route in Mehran.
- The source CV lists 31 approved or collaborative research projects in total; the items above are selected examples.

CONFERENCE PRESENTATIONS & ABSTRACTS

- Prediction of preeclampsia using a data-mining approach based on support vector machines — oral presentation, Annual Congress of Medical Sciences Students, Kermanshah (2019; Iranian calendar year 1398).
- The rate of diabetes risk among students; assessment of ergonomic posture among hairdressers — poster presentations at the International and National Congress on Health Education and Promotion(2019; Iranian calendar year 1398).
- Identifying important factors associated with multiple sclerosis using the random forest method — oral presentation, national/international congress of medical sciences students, Urmia (2024; 1403).
- Determining factors affecting gestational weight gain in women with unwanted pregnancies using random forest — poster presentation, Ibn Sina International Student Congress of Nursing and Midwifery (2024; 1403).
- Feature selection in diabetes complications using SHAP techniques — poster presentation, International Congress on Artificial Intelligence in Medical Sciences(2025).
- Application and comparison of machine-learning classification approaches in the diagnosis of colorectal cancer — poster presentation, annual national/international congress of medical sciences students, Sari (2025; 1404).
- Assessment of Ergonomic Posture of Hairdressers During Work in Kermanshah— poster presentation, The3rd International & 8thNational Congress on Health Education & Promotion.

WORKSHOPS & STATISTICAL SOFTWARE TRAINING

Has delivered or contributed to workshops at Kermanshah University of Medical Sciences on research methods, EndNote, introductory and advanced SPSS, introductory statistical analysis, and GraphPad Prism. Also contributed to student research committee workshop series, including the “Statistical Wednesdays” series.

ACADEMIC SERVICE & RESEARCH LEADERSHIP

- Secretary, Graduate Student Research Committee, Kermanshah University of Medical Sciences (2017–2019; 1396–1398).
- Research Deputy, Central Council of the Student Research Committee, Kermanshah University of Medical Sciences (2017–2018; 1396–1397).
- Research Deputy, Central Council of the Student Research Committee, Hamadan University of Medical Sciences (2020–2022; 1399–1401).
- Member, Research Council, School of Public Health, Hamadan University of Medical Sciences (2022; 1401).
- Member of the Education Development Office (EDO), School of Public Health, Hamadan University of Medical Sciences (2024; 1403) .
- Member of organizing teams for research congresses, workshops, and student research events.

PEER REVIEW

Journal reviewer for: Journal of Research in Health Sciences; BMC Health Services Research; Hormozgan Medical Journal; BMC Public Health; BMC Pediatrics; BMC Psychology; BMC Cardiovascular Disorders; BMC Women’s Health; Journal of Epidemiology and Global Health; Scientific Reports; and Environmental Medicine and Toxicology.

Congress reviewer: First Ibn Sina International Student Congress of Nursing and Midwifery (in-person review; 2024/1403).

AWARDS & DISTINCTIONS

- First place, National Iranian Outstanding Theses Festival — Professor Hesabi Award.
- First place, National Iranian Outstanding Theses Festival — Omar Khayyam Award.
- Outstanding Researcher, International Academy of Science and Technology of Iran.
- Outstanding Student, International Academy of Science and Technology of Iran.
- Recognized as a talented student under the “K” category .
- Doctoral dissertation grade: 19.90/20.

TECHNICAL SKILLS

R • Python • SPSS • GraphPad Prism • EndNote