

PROFESSOR ABBAS MOGHIMBEIGI, PhD

Professor of Biostatistics, Academic CV

Alborz University of Medical Sciences, Karaj, Iran

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EXECUTIVE PROFILE

I am a Full Professor of Biostatistics with more than 27 years of professional and academic experience spanning statistical methodology, biomedical research, postgraduate education, academic leadership and interdisciplinary collaboration.

My research programme focuses on advanced statistical methodology for complex biomedical and epidemiological data, particularly count data, zero-inflated and overdispersed models, multilevel modelling, longitudinal data, joint modelling and robust inference. More recent directions include artificial intelligence, machine learning and predictive analytics in health research.

RESEARCH & IMPACT SNAPSHOT

- 142 peer-reviewed scientific publications
- [Google Scholar](#): 3,378 citations | h-index 44 | i10-index 149
- [Scopus](#): 2,318 citations | h-index 26
- 8 funded research projects as Principal Investigator; 41 collaborative projects
- Principal supervisor of 7 PhD dissertations and 15 MSc theses
- Dean, School of Public Health, Alborz University of Medical Sciences – five years
- Founder and Director, Modeling of Noncommunicable Diseases Research Center – five years
- External PhD Examiner, University of New England, Australia
- Visiting Researcher, University of Auckland, New Zealand

PROFESSIONAL EXPERIENCE

Professor of Biostatistics — Alborz University of Medical Sciences | 2019–Present

- Advanced methodological research, postgraduate teaching and supervision, statistical consultation, interdisciplinary medical research and international collaboration.
- Participation in strategic planning, research capacity building and faculty mentoring.

Professor / Full Professor — Hamadan University of Medical Sciences | 2018–2019

- Advanced statistical methodology, graduate supervision, interdisciplinary research and academic leadership.

Faculty Member — Hamadan University of Medical Sciences | 2006–2019

- Teaching, postgraduate supervision, biomedical study design, statistical consultation, methodological research and collaborative research.

Statistician — Statistical Center of Iran | 1999–2006

- Official statistics, survey sampling, data quality assurance, statistical computing and statistical reporting.

ACADEMIC RANK PROGRESSION

- Instructor — 17 Dec 2006–6 Aug 2008, Hamadan University of Medical Sciences
- Assistant Professor — 6 Aug 2008–10 Nov 2012
- Associate Professor — 10 Nov 2012–13 Jan 2018
- Professor (Full Professor) — from Jan 2018

EDUCATION

- PhD in Biostatistics — Tehran University of Medical Sciences, Iran
- MSc in Biostatistics — Tehran University of Medical Sciences, Iran
- BSc — Shiraz University, Iran

ACADEMIC LEADERSHIP

- Dean, School of Public Health, Alborz University of Medical Sciences — 5 years
- Vice Dean for Education, School of Public Health, Alborz University of Medical Sciences — 1 year
- Founder and Director, Modeling of Noncommunicable Diseases Research Center, Hamadan University of Medical Sciences — 5 years

RESEARCH EXPERTISE

- Biostatistics and statistical methodology
- Count data analysis and zero-inflated regression
- Generalized Linear Models (GLMs) and Generalized Linear Mixed Models (GLMMs)
- Generalized Estimating Equations (GEEs)
- Longitudinal and joint modelling

- Bayesian statistics and spatial disease mapping
- Survival and frailty models
- Semiparametric and robust statistical inference
- Epidemiological modelling
- Artificial intelligence and machine learning in health research
- QTL mapping

MAJOR SCIENTIFIC CONTRIBUTIONS

1. Zero-Inflated and Count Data Modelling

- Development and application of zero-inflated Poisson, negative binomial and generalized Poisson models.
- Multilevel and three-level models for clustered, overdispersed count data with excess zeros.
- Conway–Maxwell-type count models and robust inference for complex count outcomes.

2. Multilevel, Longitudinal and Joint Modelling

- Methods for correlated and hierarchical biomedical data.
- Joint modelling of longitudinal and survival outcomes, including complex multilevel settings.
- GEE-based approaches for clustered count outcomes.

3. Bayesian and Spatial Methods

- Bayesian disease mapping and shared-component models for cancer and public health research.

4. Emerging Research Direction

- Integration of classical statistical methodology with machine learning and explainable AI for medical prediction, risk stratification and clinical decision support.

RESEARCH FUNDING & PROJECT LEADERSHIP

- Principal Investigator: 8 funded/competitive research projects.
- Co-Investigator: 41 collaborative research projects.
- Research themes include statistical methodology, epidemiology, non-communicable diseases, cancer, maternal and child health, infectious diseases, chronic diseases and health systems research.

POSTGRADUATE SUPERVISION & EXAMINATION

- Principal supervisor: 7 PhD dissertations.
- Principal supervisor: 15 MSc theses.
- Examiner: more than 30 MSc and PhD theses.
- Supervision and examination across Biostatistics, Epidemiology and Public Health.

TEACHING EXPERIENCE

- Principles and Advanced Biostatistics
- Regression Analysis; GLMs; GLMMs
- Longitudinal Data Analysis; Survival Analysis
- Epidemiology; Statistical Inference; Probability
- Medical Statistics; Research Methodology
- Statistical Computing; SPSS; R Programming

RESEARCH CAPACITY BUILDING

- Statistical consultation for clinicians, researchers, research centers and postgraduate students.
- Study design, sample size determination, statistical analysis plans and advanced modelling.
- Interpretation of statistical findings and support for scientific publication.
- Mentoring of early-career researchers and research methodology training.

SELECTED HONOURS & RECOGNITION

- Outstanding Researcher — Hamadan University of Medical Sciences (2010–2015).
- Distinguished Researcher — Alborz University of Medical Sciences (2022).
- Recognised among the World's Top 2% Scientists; exact edition/year to be documented in the final evidence package.

SELECTED METHODOLOGICAL PUBLICATIONS

- Moghimbeigi, A., Eshraghian, M.R., Mohammad, K. and Mcardle, B., 2008. Multilevel zero-inflated negative binomial regression modeling for over-dispersed count data with extra zeros. *Journal of Applied Statistics*, 35(10), pp.1193-1202 <https://doi.org/10.1080/02664760802273203>
- **Moghimbeigi, A.**, Eshraghian, M.R., Mohammad, K. and McArdle, B., 2009. A score test for zero-inflation in multilevel count data. *Computational Statistics & Data Analysis*, 53(4), pp.1239-1248. <https://doi.org/10.1016/j.csda.2008.10.041>
- **Moghimbeigi, A.**, 2011. A score test for extra zeros in negative binomial mixed models. *Journal of Statistical Computation and Simulation*, 81(5), pp.635-644. <https://doi.org/10.1080/00949650903451777>
- **Moghimbeigi, A.**, 2015. Two-part zero-inflated negative binomial regression model for quantitative trait loci mapping with count trait. *Journal of theoretical biology*, 372, pp.74-80. <https://doi.org/10.1016/j.jtbi.2015.02.016>
- Almasi, A., Eshraghian, M.R., **Moghimbeigi, A.**, Rahimi, A., Mohammad, K. and Fallahigilan, S., 2016. Multilevel zero-inflated Generalized Poisson regression modeling for dispersed correlated count data. *Statistical Methodology*, 30, pp.1-14. <https://doi.org/10.1016/j.stamet.2015.11.001>
- Mahmoodi, M., **Moghimbeigi, A.** (corresponding author), Mohammad, K. and Faradmal, J., 2018. Semiparametric models for multilevel overdispersed count data with extra zeros. *Statistical methods in medical research*, 27(4), pp.1187-1201. <https://doi.org/10.1177/0962280216657376>
- Zandkarimi, E., **Moghimbeigi, A.** (corresponding author) and Mahjub, H., 2021. Robust inference in the joint modeling of multilevel zero-inflated Poisson and Cox models. *Statistics in Medicine*, 40(4), pp.933-949. <https://doi.org/10.1002/sim.8811>
- Amini, P., **Moghimbeigi, A.** (corresponding author), Zayeri, F., Tapak, L., Maroufizadeh, S. and Verbeke, G., 2021. Longitudinal joint modelling of ordinal and overdispersed count outcomes: A bridge distribution for the ordinal random intercept. *Computational and Mathematical Methods in Medicine*, 2021(1), p.5521881. <https://doi.org/10.1155/2021/5521881>
- Gholiabad, S.G., **Moghimbeigi, A.** (corresponding author), Faradmal, J. and Baghestani, A.R., 2021. A multilevel zero-inflated Conway–Maxwell type negative binomial model for analysing clustered count data. *Journal of Statistical Computation and Simulation*, 91(9), pp.1762-1781. <https://doi.org/10.1080/00949655.2020.1871479>
- Ghorbani Gholiabad, S., **Moghimbeigi, A.** (corresponding author) and Faradmal, J., 2021. Three-level zero-inflated Conway–Maxwell–Poisson regression model for analyzing dispersed clustered count data with extra zeros: Three-level zero-inflated Conway–Maxwell–Poisson regression model. *Sankhya B*, 83(Suppl 2), pp.415-439. <https://doi.org/10.1007/s13571-020-00229-8>
- Sarvi, F., **Moghimbeigi, A.** (corresponding author) and Mahjub, H., 2019. GEE-based zero-inflated generalized Poisson model for clustered over or under-dispersed count data. *Journal of Statistical Computation and Simulation*, 89(14), pp.2711-2732. <https://doi.org/10.1080/00949655.2019.1632857>

SELECTED APPLIED CONTRIBUTIONS

- Amini, P., **Moghimbeigi, A.** (corresponding author), Zayeri, F., Mahjub, H., Maroufizadeh, S. and Samani, R.O., 2018. Evaluating the impact of risk factors on birth weight and gestational age: a multilevel joint modeling approach. *International journal of fertility & sterility*, 12(2), p.106. doi: [10.22074/ijfs.2018.5330](https://doi.org/10.22074/ijfs.2018.5330)
- Mahmoodi, M., **Moghimbeigi, A.** (corresponding author), Faradmal, J. and Ghahramani, M., 2016. Detecting Rates, Trends and Determinants of Cesarean Section Deliveries in Iran Using Generalized Additive Mixed Models. *Epidemiology, Biostatistics, and Public Health*, 13(3). <https://doi.org/10.2427/11821>
- Zandkarimi, E., **Moghimbeigi, A.** (corresponding author) and Mahjub, H., 2021. Assessing the factors affecting cesarean section selection in Iranian women using multilevel count models with excess zeros. *Iranian Journal of Public Health*, 50(4), p.816. <https://doi.org/10.18502/ijph.v50i4.6008>
- Chamanpara, P., **Moghimbeigi, A.** (corresponding author), Faradmal, J. and Poorolajal, J., 2015. Joint disease mapping of two digestive cancers in Golestan Province, Iran using a shared component model. *Osong public health and research perspectives*, 6(3), pp.205-210. <https://doi.org/10.1016/j.phrp.2015.02.002>
- Marzoni, A.S.H., **Moghimbeigi, A.** (corresponding author) and Faradmal, J., 2015. Gastric and esophageal cancers incidence mapping in golestan province, Iran: using Bayesian–Gibbs sampling. *Osong Public Health and Research Perspectives*, 6(2), pp.100-105. <https://doi.org/10.1016/j.phrp.2015.01.004>
- Hosseini, S., **Moghimbeigi, A.** (corresponding author), Roshanaei, G. and Momeniarbat, F., 2014. Evaluation of drug abuse relapse event rate over time in frailty model. *Osong public health and research perspectives*, 5(2), pp.92-95. <https://doi.org/10.1016/j.phrp.2014.02.003>
- Sarvi, F., **Moghimbeigi, A.** (corresponding author), Mahjub, H., Nasehi, M. and Khodadost, M., 2019. Factors associated with mortality from tuberculosis in Iran: an application of a generalized estimating equation-based zero-inflated negative binomial model to national registry data. *Epidemiology and Health*, 41, p.e2019032. <https://doi.org/10.4178/epih.e2019032>

- **Moghimbeigi, A.** (corresponding author), Tapak, L., Roshanaei, G. and Mahjub, H., 2014. Survival analysis of gastric cancer patients with incomplete data. Journal of gastric cancer, 14(4), pp.259-265. <https://doi.org/10.5230/jgc.2014.14.4.259>
- Manoochehri, Z., Faradmal, J. and **Moghimbeigi, A.** (corresponding author), 2022. Modeling of smoking intensity by age at smoking onset among Iranian adult male using generalized additive model. Scientific Reports, 12(1), p.16700. <https://doi.org/10.1038/s41598-022-21194-4>
- Manoochehri, Z., **Moghimbeigi, A.**, Ezzati-Rastegar, K. and Faradmal, J., 2023. Pattern of weight gain in pregnant women in slum areas of Hamadan using multilevel ordinal regression. BMC Public Health, 23(1), p.187. <https://doi.org/10.1186/s12889-023-15090-3>
- Kamyari, N., Soltanian, A.R., Mahjub, H., **Moghimbeigi, A.** and Seyedtabib, M., 2022. Zero-augmented beta-prime model for multilevel semi-continuous data: a Bayesian inference. BMC Medical Research Methodology, 22(1), p.283. <https://doi.org/10.1186/s12874-022-01736-0>
- Shahsavari, S., **Moghimbeigi, A.**, Kalhor, R., Jafari, A.M., Bagherpour-Kalo, M., Yaseri, M. and Hosseini, M., 2023. Zero-inflated count regression models in solving challenges posed by outlier-prone data; an application to length of hospital stay. Archives of Academic Emergency Medicine, 12(1), p.e13. <https://doi.org/10.22037/aaem.v12i1.2074>