Awan **Afiaz**

· Department of Biostatistics, University of Washington, 3980 15th Avenue NE, Seattle, WA 98195, United States

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Education

University of Washington   *Seattle, USA*
Ph.D. in Biostatistics   *September 2022 - Present*

- 3rd Year PhD Student.

University of Dhaka   *Dhaka, Bangladesh*
Master of Science (M.S.) in Applied Statistics   *2021 - 2023*

- **M.S. Thesis:** On the estimation of robust variance in penalized GEE for nearly separated longitudinal binary data with small samples. [Supervisor: Dr. M Shafiqur Rahman]

University of Dhaka   *Dhaka, Bangladesh*
Bachelor of Science (B.S.) in Applied Statistics   *2017 - 2021*

- **Relevant Coursework:** Generalized linear models; Survival Analysis; Bayesian Statistics; Time Series; Sampling Methods; Multivariate statistics: PCA, FA, Classification, Clustering; Epidemiology; Population Studies and Demography, Econometric modeling.
- **B.S. Project:** Impact of Child's Cognitive and Social-Emotional Difficulties on Child Abuse using classification trees and generalized linear models [published]

Research Experience

Graduate Research Assistant and ITCR Resource Developer   *September 2022 - Present*
FH Data Science Lab, Fred Hutch Cancer Research Center

- Supervisor: Jeffrey T. Leek
- **Project 1**: Evaluating impact of biomedical research software
      Paper: Best practices to evaluate impact of biomedical research software: metric collection beyond citations [**published**]
      Software: Developed web platform for Informatics Technology for Cancer Research (ITCR) website.
- **Project 2**: *Valid statistical inference with Machine Learning/Artificial Intelligence (ML/AI) generated Predicted/Synthetic Data*
      Paper 1: Do We Really Even Need Data? [**arXiv preprint**]
      Paper 2: ipd: an R package for conducting inference on predicted data [**published**]
      Paper 3: Sample size considerations for Post-Prediction Inference [*manuscript under review*]
      Paper 4: Valid Inference on Predicted Survival (VIPS) [*working paper*]
      Paper 5: A modern look at drawing Statistical Inference on ML/AI generated Synthetic Data [***Harvard Data Science Review: invited working paper***]
      Software: Co-author of R-package: **ipd** [**github**] [**CRAN**]

Undergraduate Research Assistant   *June 2020 - December 2020*
Institute of Statistical Research and Training, University of Dhaka

- Supervisors: Mohaimen Mansur and Iftakhar Alam
- **Project**: Early Childhood Development of Bangladeshi Children

Independent and Collaborative Research Projects

- **Project**: Analysis of treatment effect in the presence of covariate-dependent missing data in Cluster Randomized Trials (CRT), mentored by Dr. Anower Hossain, University of Warwick.
- **Collaborative public health project topics:** COVID-19, Intimate partner violence, women's reproductive healthcare, children and adolescent health.

Publications

Published

- Salerno S, Miao J, **Afiaz A**, Hoffman K, Neufeld A, Lu Q, McCormick TH, Leek JT. ipd: An R Package for Conducting Inference on Predicted Data. Bioinformatics. 2025 Feb 3:btaf055. DOI: 10.1093/bioinformatics/btaf055.
- **Afiaz A**, Ivanov A, Chamberlin J, …, Leek JT, Wright C **(2024)** Best practices to evaluate the impact of biomedical research software - metric collection beyond citations . **Bioinformatics** 40(8). DOI: 10.1093/bioinformatics/btae469.
- Biswas RK, **Afiaz A,**, Huq S, Bhuiyan FM, Kabir E **(2023)**. Public opinion on COVID-19 vaccine prioritization in Bangladesh: Who gets the vaccine and whom do you leave out? **Vaccine** 41(34); DOI: 10.1016/j.vaccine.2023.06.050
- Biswas RK, **Afiaz A,**, Huq S, Bhuiyan FM, Kabir E **(2023)**. Public opinion on COVID-19 pandemic in Bangladesh: disruption to public lives and trust in government's immunisation performance. **Int J Health Plann Mgmt** 1-16; DOI: 10.1002/hpm.3721
- Mansur M, **Afiaz A**, Hossain MS **(2021)**. Sociodemographic risk factors of under-five stunting in Bangladesh: Assessing the role of interactions using a machine learning method **PLOS One**, 16(8), e0256729. DOI: 10.1371/journal.pone.0256729
- **Afiaz A**, Arusha AR, Ananna N, Kabir E, Biswas RK **(2021)**. A national assessment of elective cesarean sections in Bangladesh and the need for health literacy and accessibility **Scientific Reports**, 11(1), 1-12. DOI: 10.1038/s41598-021-96337-0
- **Afiaz A**, Biswas RK **(2021)**. Awareness on menstrual hygiene management in Bangladesh and the possibilities of media interventions: using a nationwide cross-sectional survey **BMJ Open**, 11(4), e042134. DOI: 10.1136/bmjopen-2020-042134
- **Afiaz A**, Masud MS, Mansur M **(2021)**. Impact of child's cognitive and social-emotional difficulties on child abuse: Does mother's justification of intimate partner violence also play a role?. **Child Abuse & Neglect**, 117, 105028. DOI: 10.1016/j.chiabu.2021.105028
- **Afiaz A**, Biswas RK, Shamma R, Ananna N **(2020)**. Intimate partner violence (IPV) with miscarriages, stillbirths and abortions: Identifying vulnerable households for women in Bangladesh. **PLOS One** 15(7): e0236670. DOI: 10.1371/journal.pone.0236670
- Biswas RK, **Afiaz A**, Huq S **(2020)**. Underreporting COVID-19: the curious case of the Indian subcontinent. **Epidemiology and Infection**, 148, E207. DOI: 10.1017/S0950268820002095
- Biswas RK, Huq S, Afiaz A, Khan HT **(2020)**. A systematic assessment on COVID-19 preparedness and transition strategy in Bangladesh. **Journal of evaluation in clinical practice**. 26(6):1599-611. DOI: 10.1111/jep.13467.
- Biswas RK, Huq S, **Afiaz A (2020)**. Relaxed lockdown in Bangladesh during COVID-19: should economy outweigh health? **International Journal of Health Policy and Management**, 9(11), 488-490; DOI: 10.34172/ijhpm.2020.98.

Pre-prints/under review

- Hoffman K, Salerno S, **Afiaz A**, Leek JT, McCormick TH **(2024)** Do We Really Even Need Data? (arXiv pre-print).
- Salerno S, Hoffman K, **Afiaz A**, Leek JT, McCormick TH **(2024)** Sample size considerations for Post-Prediction Inference (*Manuscript under review*).
- Jitu MHI, **Afiaz A**, Biswas RK **(2024)** More Than Just Visits: Timing, Frequency, and Determinants of Effective Antenatal Care in Bangladesh - BDHS 2007 to 2017-18 (*Manuscript under review*).
- Jitu MHI, Biswas RK, **Afiaz A**, **(2024)** The joint effect of mother and child's functional difficulties on anxiety and depression among children (*Manuscript accepted*).
- Biswas RK, **Afiaz A**, Jitu MHI, Chowdhury B, Sultana S, Moosa A, Kabir E, Bhowmik J, Koemel NA, Fontana L **(2025)** Prevalence of hypertension and diabetes in Bangladesh: Identifying the unaware and misinformed from the recent national survey (*Manuscript under review*).
- Biswas RK, **Afiaz A**, Koemel NA, Fontana L **(2025)** Reevaluating Body mass index thresholds for NCD surveillance in South and Southeast Asia (*Manuscript under review*).

Teaching Experience

Graduate Teaching Assistant

University of Washington *September 2024 - June 2025*

- BIOST 511: Medical Biometry I (Autumn 2024)
- BIOST 512: Medical Biometry II (Winter 2025)
- BIOST 513: Medical Biometry III (Spring 2025)

Graduate Student Tutor

Institute of Statistical Research and Training (ISRT), University of Dhaka *January 2022 - June 2022*

- Mathematics and Statistics tutor for undergraduate courses: ASTAT 101: Elements of Applied Statistics; AST 102: Probability; AST 105: Calculus, AST 107: Linear Algebra, AST 201: Sampling Distributions, AST 203: Statistical Inference I ; AST 204: Design of Experiments I; AST 206: Sampling Methods I.

Online Student Instructor and Tutorial Maker

10 Minute School *January 2017 - December 2021*

- Created **300+ video tutorials on mathematics and statistics** for national curriculum based students. Available for free on the YouTube channel of 10 Minute School.
- Conducted **10+ online Live Classes** on Facebook and YouTube teaching over a million students to date.

Industry Experience

10 Minute School (Edu-Tech)

Dhaka, Bangladesh

Department Lead: Quality Assurance and Control (QAC) *September 2017 - December 2021*

- Spearheaded the QAC department with **over 25 employees** for the largest education platform in Bangladesh.
- Successful supervision of creation and review of **19,018 video tutorials, 837 online-based smartbooks and 6,400 academic quizsets.**

Skills

Software skills

- Statistical software: **R** (proficient), **STATA** (intermediate), **SPSS** (intermediate), **SAS** (beginner).
- Proficient in **RMarkdown/Quarto**, **LaTeX** and **Microsoft Office/Google Suite**.

Technical skills

- Data analysis and visualization in using **tidyverse** family and **ggplot2** packages.

Awards and Honors

2023	**Biostatistics Retention and Success Scholarship**, Department of Biostatistics	*Univ of Washington*
2022	**Pat Wahl Award**, Recognition of commitment to strategic use of online technologies to reach diverse communities for disseminating education.	*Univ of Washington*
2022	**Excellence Award**, Awarded by UW School of Public Health	*Univ of Washington*
2022	**Dean's Merit Award**, Faculty of Sciences awardee for obtaining the highest GPA (4.0) across all departments in B.S. Honors	*University of Dhaka*
2022	**Govt. Honours Scholarship**, Talent pool, ranked 1st in Faculty of Sciences	*University of Dhaka*
2021	**ISRT Golden Jubilee Gold Medal Award 2021**, for graduating top of the class with GPA (4.0)	*University of Dhaka*
2019	**ISRT Merit Stipend**, Institute of Statistical Research and Training	*University of Dhaka*

Conferences & Presentations

45th Conference of the International Society for Clinical Biostatistics (ISCB) *Thessaloniki, Greece*
Oral Presentation *21-25 July 2024*

- **Award**: Winner of ISCB Student Conference Paper Award
- **Funds**: Conference travel, registration, accommodation.
- **Talk**: *Optimal Sandwich Variance Estimator in Penalized GEE for Nearly Separated Longitudinal Binary Data with Small Samples.*

ENAR 2024 Spring Meeting *Baltimore, MD, USA*
Oral Presentation *10-13 March, 2024*

- **Talk**: *Optimal Sandwich Variance Estimator in Penalized GEE for Nearly Separated Longitudinal Binary Data with Small Samples.*

2nd International Conference on Applied Statistics (ICAS) 2019 *University of Dhaka, Bangladesh*
Poster presentation *December, 2019*

- **Poster**: *Intimate partner violence (IPV) with miscarriages, stillbirths and abortions: Identifying vulnerable households for women in Bangladesh.*

Research Talks

Institute of Statistical Research and Training, University of Dhaka *Dhaka, Bangladesh*
Invited Session *18 September 2024*

- **Talk**: *Optimal Sandwich Variance Estimator in Penalized GEE for Nearly Separated Longitudinal Binary Data with Small Samples.*

Professional Services

Academic reviewer

- PLOS One; Midwifery; Child Abuse & Neglect; Journal of Family Violence; Early Child Development & Care.

Professional Affiliations

Member **Western North American Region (WNAR)**, International Biometric Society *2023 - Present*
Member **Eastern North American Region (ENAR)**, International Biometric Society *2023 - Present*

University Services and Activities

Member **Graduate Student Representative**, Department of Biostatistics, University of Washington *Sep 2022 - Present*
Member **Biostatistics Communications/Alumni Relations Committee**, University of Washington *Sep 2022 - Aug 2024*