Md. Jubayer Hossain

FOUNDER & DATA ANALYST

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Research Experiences

Center for Health Innovation, Research, Action, and Learning - Bangladesh *Dhaka, Bangladesh*
Founder, Management Lead & Data Analyst *June 2020 - Present*

I am currently the founder and management lead of CHIRAL Bangladesh, where I lead a team of undergraduates from different background and interns to address challenges in public health and healthcare data science, both in-house and external collaborations. Some of the function associated with the role include:

- Development and implementation of research strategy for the team, focusing on enabling data science in health research
- Managing and mentoring staff, undergraduate students, and interns
- Writing and managing grant applications with Dr. Syeda Tasneem Towhid and Dr. Abul Kalam Azad
- Designing hands-on training on data analysis and fundamentals of health research for the undergraduate students and interns
- Responsible for the implementation of diverse tools for analysis of high throughput and public health data

International Centre for Diarrhoeal Disease Research, Bangladesh *Dhaka, Bangladesh*
Research Intern, Health Systems and Population Studies Division *February 2022 - June 2022*

I was a research intern of the Health Systems and Population Studies Division at International Centre for Diarrhoeal Disease Research, Bangladesh, focusing on mental health. Some efforts included:

- Performed literature review of multiple mental health related projects
- Responsible for the implementation of diverse tools for data analysis (SPSS, R Programming)
- Developed keywords and biomedical database search strategy for systematic reviews

Bio-Bio-1:: Bioinformatics Research Discussion Group *Dhaka, Bangladesh*
Team Member, Bioinformatics Group *February 2017 - June 2019*

I was a team member of Bio-Bio-1 providing support across different bioinformatics training programs at the organization. Some of the functions of the role included:

- Pursued learning opportunities to advance knowledge and take on leadership position
- Contributed to team design training modules and connect preparation

Academic Credentials

Jagannath University *Dhaka, Bangladesh*
Master of Science in Microbiology *January 2019 - January 2020*

Jagannath University *Dhaka, Bangladesh*
Bachelor of Science in Microbiology *January 2016 - January 2019*

Publications

1. Towhid, S. T., **Hossain, M. J.**, Sammo, M. A. S., & Akter, S. (2022). Perception of Students on Antibiotic Resistance and Prevention: An Online, Community-Based Case Study from Dhaka, Bangladesh. European Journal of Biology and Biotechnology, 3(3), 14–19. `https://doi.org/10.24018/ejbio.2022.3.3.341`

2. **Hossain, M.J.**, Towhid, S. T., Sultana, S., Mukta, S. A., Gulshan, R., & Miah, S. (2022). Knowledge and attitudes towards thalassemia among university students in Bangladesh. medRxiv. `https://doi.org/10.1101/2022.09.19.22280125` *(Accepted by Microbial Bioactives)*

3. **Hossain, M.J.**, Towhid, S. T., Akter, S., Shahjahan, M., Roy, T., Akter, B., & Nodee, T. A. (2022). Self-Management of Diabetic Patients from the Urban Areas in Bangladesh. medRxiv. `https://doi.org/10.1101/2022.08.23.22279128` *(Under Review; PLOS Global Public Health)*

4. **Hossain, Md. J.**, Md Wahidul Islam, Rukaiya Ummi Moon, Rubaiya Gulshan, Sumaiya Akter Mukta, Mousumi Karmakar, Sabia Sultana,Md. Sharif Miah, Md. Ariful Islam (2021). Quality of Life among Bangladeshi Patients with Thalassemia using the SF-36 Questionnaire *(Submitted to Health and Quality of Life Outcomes)*

Conferences

1. Abul Kalam Azad, Jannatul Ferdous, Syeda Tasneem Towhid, Md. Shahadat Bin Shahid, **Md. Jubayer Hossain** (2023).Isolation and Antibiotic Susceptibility Pattern of Bacteria from Patients with Urinary Tract Infections (*36th BSM Annual Conference, Poster Presentation*)
2. Mesbah UMR Nayeem, Muslima Aktar Mrittika, **Md. Jubayer Hossain**, Abul Kalam Azad, Jannatul Ferdous, Salma Ahmed, Santonu Kumar Sanyal, Syeda Tasneem Towhid (2023). Quantitative Microbial Risk Assessment from Vancomycin-resistant Enterococcus faecalis and Enterococcus faecium from a specific neighbourhood in Dhaka City,Bangladesh (*36th BSM Annual Conference, Poster Presentation*)
3. Sumona Akter, Syeda Tasneem Towhid, Md. Atik Shariar Sammo, **Md. Jubayer Hossain** (2023). Perception of Students on Antibiotic Resistance and Prevention: An Online, Community-Based Case Study from Dhaka, Bangladesh (*36th BSM Annual Conference, Poster Presentation*)
4. Mesbah UMR Nayeem, Muslima Aktar Mrittika, **Md. Jubayer Hossain**, Abul Kalam Azad, Jannatul Ferdous, Salma Ahmed, Santonu Kumar Sanyal, Syeda Tasneem Towhid(2023). Quantitative Microbial Risk Assessment from Vancomycin-resistant Enterococcus faecalis and Enterococcus faecium from a specific neighbourhood in Dhaka City,Bangladesh (*36th BSM Annual Conference, Oral Presentation*)

Working Papers

1. **Hossain, M.J.**, Abul Kalam Azad, Md. Wahidul Islam, Muhibullah Shahjahan (2022). Factors influencing knowledge of antibiotic usage among patients of school-going children.

2. **Hossain, M.J.**, Abul Kalam Azad, Md. Atik Shahriar Sammo (2022). A KAP Study on the Impact of C-section on Infant Gut Microbiota among Public University Students in Bangladesh

3. **Hossain, M.J.**, Towhid, S. T.,Abul Kalam Azad, Manisha Das, Wahidul Islam, Muhibullah Shahjahan (2022). The role of community participation and social engagement in the prevention and control of dengue fever in Dhaka City.

Skills

- **Programming Languages:** SQL, Python, R, Julia, JavaScript
- **Big Data Frameworks:** Dask, PySpark
- **Bioinformatics:** NGS, RNASeq, ssRNASeq
- **Analytics Softwares:** SPSS, PowerBI, Microsoft Excel
- **Survey Tools:** RedCap, KoboToolBox, Google Forms
- **Miscellaneous Skills:** UNIX, Version Control(Git), Web Scraping, APIs, Visualizations

Projects

Bioinformatics Approach for Profiling Antibiotic Resistance genes from Metagenomic DNA Sequence

- **Aims:** To Profiling and predicting of antimicrobial-resistant genes from metagenomic DNA sequences
- **Technical Skills:** QIME2, DADA2, Bash

Heart Disease Analysis and Prediction Using Machine Learning

- **Aims:** With the dataset provided for heart analysis, we have to analyse the possibilities of heart attack on the basis of various features, and then the prediction from the analysis will tell us that whether an individual is prone to heart attack or not
- **Technical Skills:** Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn

Teaching

Jagannath University, Dhaka *Website*
Teaching Assistant, Department of Microbiology *October 2022 - Present*

Assisted Dr. Abul Kalam Azad, created course materials on undergrad level public health and hygiene.

Undergraduate Research Training Program (URTP) *Course Website*
Lead Organizer & Instructor *January 2022 - Present*

The Undergraduate Research Training Program (URTP) aims to develop better-prepared undergraduate researchers.

Health Research ToolBox: A Step by Step Guide for Beginners (Cohort 2) *Course Website*
Lead Organizer & Instructor *June 2021 - Present*

This course will give students a foundation in research principles and practice, mainly applied to public health.

Research Data Analysis with SPSS (Cohort 1) *Course Website*
Lead Organizer & Instructor *Jan 2023 - Present*

This course will provide health researchers with end-to-end data analysis workflow for research projects

R for Public Health: Statistical Analysis Made Easy *Course Website*
Lead Organizer & Instructor *Jan 2023 - Present*

References

Syeda Tasneem Towhid, Ph.D. `towidst@mib.jnu.ac.bd`
Assistant Professor, Department of Microbiology, Jagannath University, Dhaka +8801746208281

Abul Kalam Azad, Ph.D. `akazad88@mib.jnu.ac.bd`
Associate Professor, Department of Microbiology, Jagannath University, Dhaka +8801732788272