

SALONI PATIL, MPH

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PROFESSIONAL PROFILE

Early-career epidemiologist and biostatistician with an MPH in Epidemiology and Biostatistics (Boston University, 2026) and a clinical foundation in dental surgery (BDS). Experienced in end-to-end quantitative analysis across randomized trials and large-scale observational studies, with particular expertise in mixed-effects modeling, multilevel logistic regression, and ITT frameworks applied to infectious disease and global health datasets. First author on a manuscript examining TB household contact risk in Pakistan (19,668 contacts; manuscript in preparation). Seeking research positions, clinical research roles, or PhD programs in infectious disease epidemiology or global health biostatistics.

EDUCATION

Master of Public Health, Epidemiology and Biostatistics

May 2026

Boston University School of Public Health, Boston, MA | GPA: 3.70

Bachelor of Dental Surgery (BDS)

Dec 2023

S.M.B.T. Dental College and Hospital, MUHS, Maharashtra, India | GPA: 3.72

PROFESSIONAL EXPERIENCE

First Author and Biostatistician | TB Household Contact Screening Study

Nov 2025 – Present

MPH Practicum, Boston University School of Public Health | Supervisor: Dr. Meredith Brooks

- Designed the complete analytic framework for a retrospective secondary analysis of programmatic TB contact investigation data from the IRD Zero TB Initiative, linking two datasets to construct a final analytic cohort of 4,430 index patients and 19,668 household contacts across Karachi and Peshawar, Pakistan (2018–2021).
- Developed a pre-specified epidemiologic analysis plan, variable definitions, recoding logic, and model selection rationale; authored a comprehensive data dictionary covering 30+ variables across both datasets.
- Executed a fully reproducible SAS PROC GLIMMIX pipeline encompassing data cleaning, missing data handling, backward elimination with a priori variable retention, and sensitivity analyses restricted to bacteriologically confirmed index patients.
- Identified contact vulnerability as the primary driver of TB disease risk: young age (aOR 1.91, <5 years; aOR 2.16, 5-14 years), nutritional risk (aOR 1.49), weight loss (aOR 3.74), prior TB history (aOR 5.75), and comorbidity (aOR 2.88); no index patient characteristics retained independent association after adjustment.
- Drafted all manuscript sections (introduction, methods, results, discussion), produced all 4 results tables, and contributed a first-author abstract submitted to The Union World Conference on Lung Health 2026, Rio de Janeiro (under review).

Medical Officer

Feb 2024 – May 2024

Health Assure PVT. LTD, Mumbai, India

- Conducted 500+ structured telehealth patient interviews, collecting detailed medical histories and translating patient-reported data into structured EMR and Excel documentation.
- Maintained source-record integrity across a multi-provider platform to IRB-equivalent data security standards; coordinated care across clinical and non-clinical teams.

Dental Intern (BDS Clinical Training)

Dec 2022 – Dec 2023

Nair Hospital Dental College and Hospital, Mumbai, India

- Delivered patient-centered care across oral medicine, surgery, endodontics, pediatric dentistry, and community outreach rotations, managing 700+ patient cases.
- Collaborated with community health workers to extend care to underserved rural populations through organized dental camps and public health screening programs in Maharashtra.

RESEARCH EXPERIENCE

Biostatistician | Sex as an Effect Modifier in Acupuncture for Chronic Headache

Jan 2026 – May 2026

Integrative Learning Experience, Boston University School of Public Health

- Conducted a secondary analysis of a multi-site pragmatic RCT (N=401; complete case N=301) to examine whether biological sex modifies the effect of acupuncture on clinically meaningful headache improvement ($\geq 35\%$ reduction), applying intention-to-treat principles.

- Executed three sequential logistic regression models in SAS (PROC GLIMMIX, PROC LOGISTIC, delta method ESTIMATE statements) with parallel verification in Python and visualization in R (ggplot2), identifying sex-stratified ORs of 2.40 (female) and 4.01 (male) with non-significant interaction (Wald $p=0.471$).
- Produced publication-ready statistical tables, Methods and Results sections, and a predicted probability figure; all outputs independently verified across SAS and Python platforms.

Research Analyst | Seasonal Depression and Student Wellbeing

Sept 2025 – Dec 2025

Mixed-Methods Study, Boston University School of Public Health

- Designed and executed a mixed-methods study examining seasonal affective symptoms among graduate students (N=102) using PHQ-2 screening and qualitative focus groups; performed quantitative logistic regression in RStudio and NVivo thematic coding.
- Identified significant mental health service gaps; co-authored a manuscript-style report and presented findings and recommendations to a live academic audience, with recommendations subsequently considered for future campus mental health planning.

Research Analyst | HIV Care Decentralization and 12-Month Mortality

Jan 2025 – May 2025

Themba Lethu HIV Clinic Dataset, Boston University School of Public Health

- Conducted a retrospective cohort analysis (N=2,772) of Themba Lethu HIV Clinic data, Johannesburg, South Africa, examining 12-month mortality among patients down-referred to nurse-managed primary care versus doctor-managed ART facilities.
- Applied modified Poisson regression with zero-cell correction in SAS, conducting a stratified assessment of 7 candidate confounders; identified an 18.5% change in risk estimate (crude RR 0.188 to adjusted RR 0.230), confirming confounding by clinical severity.

Vaccine Policy Analyst | West Nile Virus Clinical Development Plan

Sept 2025 – Dec 2025

Boston University School of Public Health

- Contributed to a multi-phase simulation advancing a recombinant WNV vaccine from Target Product Profile through Phase I to IIb clinical trial design, covering regulatory strategy, immunogenicity endpoints, and LMIC introduction pathways.
- Independently authored a WHO/SAGE-style policy memo evaluating correlates of protection for rWNV-E, recommending an accelerated development pathway; presented to faculty serving as a WHO/SAGE advisory panel.

Research Analyst | Child Stunting Determinants, 2018 Zambia DHS

Jan 2025 – May 2025

Zambia Demographic and Health Survey, Boston University School of Public Health

- Analyzed the 2018 Zambia DHS (N=8,744 analytic sample) to examine risk factors for severe stunting in children under 5, operationalizing WHO height-for-age Z-scores in SAS using a WHO macro.
- Executed multivariable linear regression of HAZ scores and logistic regression of severe stunting with formal effect modification testing by urban/rural residence ($p=0.0005$); identified wealth index as the primary independent predictor (AOR 1.251, poorer vs. middle quintile).

SELECTED RESEARCH PROJECTS

Statistical Analyst | Periodontal Disease and Gastric Cancer Risk

Systematic Review and Cohort Design | Boston University School of Public Health | Jan – May 2025

- Independently conducted a systematic literature review and pooled analysis of 7 peer-reviewed studies on the epidemiological association between periodontal disease and gastric cancer, following PRISMA guidelines.
- Developed bias assessment tools and evaluated heterogeneity and exposure misclassification; identified elevated gastric cancer risk among men under 65 with periodontal disease; presented as a structured academic manuscript.
- Designed a 30-year retrospective cohort study protocol to evaluate periodontal disease as a risk factor for gastric cancer, incorporating Cox proportional hazards regression, sex and age stratification, and causal inference strategies.

Community Health Assessor | HPV Vaccine Uptake and Barriers Among Young Men

Boston University School of Public Health | Sept – Dec 2024

- Facilitated qualitative focus groups with young men, applying the Health Belief Model to code perceived susceptibility, severity, benefits, and barriers to HPV vaccination.
- Produced a stakeholder report, culturally tailored health messaging, and a 30-second PSA for community dissemination; presented as a structured community health assessment.

Research Analyst | Sex-Based Differences in Hypertension, Framingham Heart Study

Boston University School of Public Health | Sept – Dec 2024

- Analyzed 1,631 Framingham Heart Study participant records using multivariable logistic regression and chi-square tests in R; visualized sex-stratified hypertension prevalence using ggplot2; drafted a structured epidemiologic analysis report.

Research Analyst | Childhood Diarrheal Disease Determinants, Rural India

Boston University School of Public Health | Sept – Dec 2024

- Synthesized evidence from NFHS-4/5, WHO, UNICEF, and GBD 2016 datasets across four levels using the Social Ecological Model to map determinants of childhood diarrheal disease (prevalence 9.6%) in rural India.
- Developed an original intervention recommendation grounded in Social Cognitive Theory and peer support network design; submitted as a structured academic report.

Data Analyst | Interactive TB Surveillance Dashboard

WHO Global TB Data, Boston University School of Public Health | Sept – Dec 2024

- Built an interactive Power BI surveillance dashboard covering 14 years of WHO Global TB data (2010–2023) across 6 WHO regions, tracking incidence, treatment success rates, sex-stratified mortality, and drug resistance.
- Led development of an interactive choropleth world map visualizing treatment success rates by country, WHO region, and year; dashboard covers 932,340 total TB deaths and was presented to a public health practitioner audience.

Study Design Author | TB and LTBI Household Contact Cohort Study

EP722 Data Collection Methods, Boston University School of Public Health | Sept – Dec 2024

- Critically appraised 5 international TB/LTBI household contact studies (including a study of 420,854 household contacts) and compared 3 data collection strategies.
- Designed a hybrid prospective cohort protocol with dual diagnostic testing (TST and QFT-Plus), multidimensional exposure intensity scoring, and N=800 sample (80% power, RR=2.0); submitted as a complete research proposal.

Policy Analyst | Equity and Access in Medical Education

Boston University School of Public Health | Sept – Dec 2024

- Applied adaptive leadership theory and 5 equity frameworks across four levels of analysis to examine India's medical education reservation system.
- Developed a three-part hybrid policy reform proposal encompassing governance structure, financial need assessment, and holistic admissions criteria; submitted as a formal academic paper.

Systematic Review | MB2 Canal Prevalence in Maxillary Molars

Nair Dental College and Hospital, Mumbai, India | Mar 2022 – Present

- Data extraction completed across 30+ databases and 78 peer-reviewed studies on MB2 root canal prevalence in maxillary first and second molars, systematic review and analysis in progress.

PUBLICATIONS AND MANUSCRIPTS

Patil S, Hussain H, Malik AA, Brooks MB. "Who Develops Tuberculosis? Evidence from a Large Real-World Household Contact Investigation in Pakistan." *Manuscript in preparation*. Boston University School of Public Health and UT Southwestern Medical Center. (2026)

CONFERENCE ABSTRACTS AND PRESENTATIONS

Patil S, Hussain H, Malik AA, Brooks MB. "Who Develops Tuberculosis? Evidence from a Large Real-World Household Contact Investigation in Pakistan." *The Union World Conference on Lung Health 2026*, Rio de Janeiro, Brazil. November 2026. (Abstract under review)

TECHNICAL SKILLS

Statistical methods: Mixed-effects logistic regression, multivariable modeling, modified Poisson regression, effect modification and interaction testing, ITT analysis, survival analysis, sensitivity and missing data analysis, non-inferiority and interim analysis, cohort study design

Software: SAS Studio (PROC GLIMMIX, PROC LOGISTIC, PROC GENMOD), R (dplyr, ggplot2, survival, tidyverse), Python, NVivo, REDCap, KoboToolbox, Excel (PivotTables, dashboards), Zotero

Research methods: RCTs, retrospective and prospective cohort studies, real-world and EHR data, systematic review and meta-analysis, mixed-methods design, qualitative thematic analysis, focus group facilitation, DHS data analysis, study protocol design

Writing and dissemination: First-author manuscript drafting, abstract writing, WHO/SAGE policy briefs, stakeholder reports, codebook and analysis plan development, data dictionary authorship

CERTIFICATIONS

- CITI Program: Human Subjects Research, Biomedical Track – CITI Program, USA
- HIPAA Privacy and Security Training – Boston University, USA
- Race in Clinical Research – Boston University School of Public Health, Boston, MA (January 2025)

LEADERSHIP AND SERVICE

Social Media Manager | Period Project, BUSPH

Nov 2024 – May 2026

- Developed and executed a digital content strategy promoting menstrual equity and reproductive health access; designed multi-platform campaigns in Canva targeting the BUSPH student community, growing audience engagement by 40% over three months.

Social Media Coordinator | Student Senate, BUSPH

Jan 2025 – May 2025

- Designed and published content for 5+ Student Senate events in Canva; contributed to event organization and strategy; reached 300+ BUSPH students across platforms.

Scientific Committee Member | NONATHON Conference, Nair Dental College

Oct 2023

- Coordinated session logistics and supported abstract evaluation for 100+ student presenters at a student-led scientific convention.

Cultural Secretary | S.M.B.T. Dental College and Hospital

2021 – 2022

- Led student cultural programming; organized a COVID-19 mask distribution initiative for local communities during the pandemic.

VOLUNTEER EXPERIENCE

Community Dental Camp Volunteer

Aug 2021 – Dec 2023

NSS and Rotary Club of Bombay Seacoast, Maharashtra, India

- Delivered preventive oral healthcare and organized public health awareness campaigns in underserved tribal communities across rural Maharashtra; conducted oral health screening at NSS Ashram Schools in Palghar district.

PROFESSIONAL DEVELOPMENT

- WHOQOL Assessment and Administrative Methods — e-workshop, ASHA The Hope Foundation

Nov 2023