**ADA Final Project Abstract**

**AUTHORS:** Sherly Boddu and Sam Hsu

**PROPOSED TITLE:** Survival Analysis of COVID-19 Patients in South Korea

**BACKGROUND:**

Coronavirus disease 2019 (COVID-19) has devastated the world’s healthcare systems, with over three million cases reported and increasing. Preliminary evidence is beginning to provide insight into survival profiles by age, sex, and other risk factors. South Korea, with its excellent contract tracing systems, is an ideal site for furthering understanding of the factors that influence survival patterns.

**METHODS**:

CDC South Korea has published data on all diagnosed cases of COVID-19 in South Korea until April 20, 2020. Analysis was restricted to provinces with at least one death. Survival time is calculated as days between positive diagnosis and either death or release. Age, sex, and province are considered as factors influencing survival time; they are visualized using Kaplan-Meier curves and included in a Cox proportional hazard regression model to estimate hazard of death.

**RESULTS**:

Of 2,772 cases, 67 deaths were recorded for a mortality rate of 2.4%. Over 31% of cases in Daegu ended in death; much higher than other provinces. Men are found to have a 233% (CI: 1.99-5.57) higher expected hazard of death compared to women. Each one-year age increase is associated with an 8% (CI: 1.06-1.10) increase in hazard of death.

**CONCLUSION:**

Hazard rate associations by age and sex are consistent with patterns observed in locations like China and Italy. These may be explained by natural comorbidities like deteriorated lung functioning in the elderly or behavioral factors like higher smoking rates among men. Social factors like the secretiveness of the Shincheonji Church in Daegu are also important influencers of survival.