

The Effect of Pre-event Psychiatric States
to the Post-Traumatic Stress Symptoms
—A Study using the COVID-19 Pandemic Data—

Name

Fumiya Nakai

Laboratory's name

Mathematical Informatics Lab.

Supervisor's name

Kazushi Ikeda

Abstract ([should be within 1st page](#))

Despite the clinical distinction of psychiatric disorders, it is well known that there is a high comorbidity among them. Recent time-dependent analyses have identified several trajectory patterns and their modifying factors that have a common basis across disorders, which was expected to elucidate the mechanisms of the comorbidity. However, comprehending how prior psychiatric conditions affect subsequent stress responses is a formidable challenge due to the difficulty of data collection.

Therefore, in this study, we analyzed the trajectories of the post-traumatic stress response during the COVID-19 pandemic, which was a global calamity and affected the population extensively and equally. We conducted an online survey of nine psychiatric disorders prior to the COVID-19 pandemic and also conducted additional follow-up for five times over a period of 1.5 years, with additional questions on post-traumatic stress symptoms (PTSS) during the pandemic.

In the analysis, principal component analysis identified four basis components of the psychiatric states. Latent growth mixture model identified four trajectory types and multinomial logistic regression also revealed that each trajectory was modulated by different pre-event fundamental psychiatric components. Furthermore, the estimated “potential” PTSS score predicted the future PTSS prognosis.

These findings suggest that the pre-event psychiatric states influence the future stress response. This not only supports the idea of a common basis among psychiatric disorders, but also suggests a new mechanical model for the development of psychiatric disorders. The clinical implication is also suggested that antecedent psychiatric states should be considered in the prevention and treatment of maladaptive stress responses.