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methods, RNNS are potentially important tools for establishing model-free predictor importance, but evaluation of the importance of individual predictors in the context of highly correlated data presents challenges requiring appropriate methodology.

**Keywords:** Suicidal Ideation, Machine Learning, Ecological Momentary Assessment

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**P695. Children’s Neurocognitive Development and Suicide Risk Through Middle Adulthood**

Pablo Vidal-Ribas¹, Theemeshni Govender¹, and Stephen E. Gilman²

¹Social and Behavioral Science Branch, Division of Population Health Research, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, ²Social and Behavioral Science Branch, Division of Population Health Research, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Johns Hopkins Bloomberg School of Public Health

**Background:** Children’s neurocognition is associated with psychiatric disorders, educational attainment, and socioeconomic status over the life span. It is uncertain whether childhood neurocognition is also associated with suicide mortality. In a large national cohort of children, we examined the association between childhood neurocognition and suicide deaths occurring through middle adulthood.

**Methods:** Vital status of 49,853 individuals born between 1959 and 1966 to participants in the Collaborative Perinatal Project (CPP) cohort was determined by a probabilistic linkage from the National Death Index, covering all US deaths occurring from 1979 through 2016. Cox proportional hazard models were used to investigate associations of intelligence (WISC) and academic skills (WRAT) at age 7 with suicide death in unadjusted and adjusted models.

**Results:** By the end of 2016, 288 cohort members had died by suicide. Low reading and spelling skills (vs high) at age 7, but not general intelligence and arithmetic skills, were associated with suicide mortality (reading, HR=1.99, 95%CI 1.24-3.17; spelling, HR=2.02, 95%CI 1.10-3.75). Associations were still evident but attenuated after adjusting for prenatal and sociodemographic factors at birth (reading, HR=1.67, 95%CI 1.02-2.73; spelling, HR=1.71, 95%CI 0.91-3.22).

**Conclusions:** Lower reading and spelling skills in childhood increase vulnerability to suicide through middle adulthood independently from childhood sociodemographic conditions. Children’s poor literacy is linked to the development of emotional distress, low self-esteem, and psychopathology. In contrast to arithmetic skills, it also predicts academic motivation in late adolescence, thus impairing educational attainment and adulthood socioeconomic conditions, which might increase the risk for suicide mortality.

**Supported By:** Intramural Research Program NICHD

**Keywords:** Neurocognitive Predictors, Suicide, Prospective Cohort, Early Childhood

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**P696. Suicide-Related Calls to a National Crisis Chat Hotline Service during the COVID-19 Pandemic and Lockdown**

Gil Zalsman¹, Yael Levi², Eliane Sommerfeld³, Avi Segal⁴, Dana Assa⁵, Loona Ben Dayan⁶, Avi Valevsky⁷, and J. John Mann⁸

¹Tel-Aviv University, ²Sahar-Online Mental Support, ³Ariel University, ⁴Ben-Gurion University of the Negev, ⁵Geha MHC, ⁶Columbia University/NYSPI

**Background:** A COVID-19 related rise in suicide behaviors has been assumed but detecting it was difficult and alternative data sources for such trends in suicidal behavior must be sought.

**Methods:** Data from a national chat-based crisis hotline for the first half of 2019 (pre-COVID-19), were compared to data from the first half of 2020. Chat sessions were classified and the data compared between the two periods.

**Results:** Total chats (n=6756) were 48% higher during COVID-19 (p<0.05). Suicide-related chat (SRC) number was also higher (p < .05). SRCs increased during the lockdown. The number of severe SRCs resulting in police intervention, increased during the lockdown compared with the same period in 2019 (p = .04). Issues of anxiety were higher in 2020 (19.4%) vs. 2019 (16.5%) (p < .00001) while issues of depression were lower (22.4% vs 33%, respectively) (p < .0001). The overall use of chats among adults aged >50 yrs. increased and the rate of SRCs in this age increased 30-fold (p < .00001). The proportion of women increased from 62% in 2019 to 73% during COVID-19 (p < .0001).

**Conclusions:** The rise in total chats, SRCs and SRCs resulting in police action, commenced during lockdown and was ameliorated by end of the lockdown, indicating that distress created by the lockdown was more impactful than any other events. Older populations were probably more distressed and more calls by women may reflect women’s better help-seeking. The increase in SRCs indicates the potential for more suicides and the need reach-out to older people during lock-downs.

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**Keywords:** Suicide, COVID-19 Pandemia, Prevention, Adolescent Depression and Anxiety, Internet-Based Methodology

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**P697. The Impact of Socioeconomic Status in the Polygenic Risk of Psychiatric Traits and Disorders: Evidence of Assortative Mating and Participation Bias in UK Biobank**

Brenda Cabrera Mendoza¹, Frank Wendt¹, Gita Pathak¹, Loic Yengo², and Renato Polimanti³

¹Yale University School of Medicine, ²Institute for Molecular Bioscience, The University of Queensland

**Background:** The polygenic architecture of psychiatric traits can be affected by population dynamics such as assortative