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Tryptophan Hydroxylase (TPH) Gene and 5-HTTLPR Polymorphism in Childhood Suicidal Ideation and Suicide Among Children

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Background: Suicidal Ideation and suicide is very common among children 15 – 19 years, especially in the US. This suicidality is driven by specific environment, namely opioid, fentanyl, alcohol, discrimination, isolation, and racism. This study aimed at understanding the implication of drug use/abuse in TPH and 5-HTTLPR genes which down-regulate normal behaviors, indicative of depression and suicidality.

Rationale/Significance: There is a current increase in childhood suicide in the US today which is influenced by parental and children use of opioid and opioid derivatives.

Hypothesis: TPH and 5-HTT gene mutation as well as aberrant epigenomic modulation in this pathway is implicated in childhood suicide. The Quantitative Evidence Synthesis (QES) and Dersimonian-Laird model was utilized in the estimation of the common effect size (CES) and the precision measure (95% CI).

Results: The population of children with suicidal ideation was n=418 and suicide, n= 209. The substance use disorder was 35% among female, CES, 1.35, 95% CI, 1.03-3.97 and male, CES, 2.68, 95% CI.1.31-5.53. Suicide among age group, 10-14 years was CES = 2.08, 95% CI = 0.89-6.45, while age group, 15-19 years experienced, CES = 5.63, 95%CI, 2.90-8.67

Discussion: Childhood suicide has involved many risk determinants in the US, namely child abuse, alcohol, opioid use, fentanyl, Oxycodone and excessive alcohol use. Further, parents and custodians are required not to expose the children to opioid and/or opioid derivatives before children.

Conclusion: Children should never be exposed to parental utilization of opioid and opioid derivatives hence childhood suicide and mortality reduction in the US population.