

Name: Gbadebo Ogungbade, Ph.D.

Email: debogungbade@gmail.com

Surrogate Aberrant Epigenomic Modulations of Glucocorticoids Receptor Gene (NR3C1) in HIV/AIDS and Major Depressive Disorders (MDD) among Racial/Ethnic Minorities and Underserved Whites: Quantitative Evidence synthesis (QES)

Background: HIV/AIDS and Major Depressive Disorder (MDD) reflects substantial psychiatric condition in USA. Significantly, reliable risk determinants are not fully understood, which reflects simply DNA sequence, but gene and environment interactions, hence aberrant epigenomic modulation. This study assessed data on specific environments associated with HIV/AIDS and MDD with NR3C1 inverse correlation in subpopulation health outcomes.

Rationale/Significance: HIV/AIDS and MDD are indicative of several risk determinants, and the application of these risks in HIV/AIDS and MDD narrowing and ultimate elimination. This assessment reflects risk reduction in several communities, hence MDD and psychiatric conditions marginalization.

Hypothesis: Specifically, environment and gene interaction as epigenomic modulation reflects abnormal epigenomic modulation involving NR3C1 increases in MDD and HIV/AIDS. The QES design with Desermonian-Laid, and combined effect size (CES) and heterogeneity effect were utilized.

Results: The NR3C1 hypermethylation associated with MDD, CES = 2.12, 95%CI, 0.63-4.86, and the NR3C1 associated with HIV/AIDS, CES = 1.99, 95%CI, 0.52-5.76. Regarding sex, females with MDD which was observed with increased CES, 2.88, 95%CI, 1.98-6.33, relative to males, CES, 1.34, 95%CI, 0.97- 7.04. Concerning NR3C1 in females with HIV/AIDS, the CES was lower, compared with the males: CES, 1.21, 95%CI, 0.69-3.56, versus male, CES, 2.98, 95% CI, 0.94-3.66. Additionally, childhood trauma and substance used disorder increased MDD due to hypermethylation of NR3C1, and less associated with HIV/AIDS .

Discussion: With respect to MDD, associated with several risk factors without substantial knowledge on the gene-environment interaction as epigenomic, this study very critically observed specific environment adversely influenced the glucocorticoid receptor gene by increasing MDD and HIV/AIDS in the US population, especially blacks/AA and the underserved Whites.

Conclusion: NR3C1 reflects hyperpolarization of post-synaptic neuron of MDD and HIV/AIDS, implying the understanding of MDD and HIV/AIDS environments such as isolation, discrimination, racism and substance use disorders within the US population, hence intervention mapping.

Authors:

Submitter: Gbadebo Ogungbade, CEO, Global Health Services Initiatives Inc, Beaumont, TX