Issues of ethics in international collaborations in neuroimaging genetics.

Joseph Tim*

Department of Paediatrics, Division of Medical Genetics, University of California–San Francisco, USA

Received: *23-Dec-2021, Manuscript No. AARRGS-22- 53387;* ***Editor assigned:*** *27-Dec-2021, PreQC No. AARRGS-22- 53387 (PQ);* ***Reviewed:*** *10- Jan-2022, QC No. AARRGS-22-53387;* ***Revised:*** *13-Jan-2022, Manuscript No. AARRGS-22- 53387 (R);* ***Published:*** *20-Jan-2022, DOI:10.35841/2591-7986-4.1.104*

Abstract

Neuroimaging genetics is a fast growing discipline that investigates how genetic variation effects brain shape and function by combining neuropsychiatric genetics studies with imaging modalities. As genetic and imaging technologies advance, their combined promise for enhancing mental nosology, diagnosis, and therapy may become more apparent. While neuroimaging genetics research have several scientific benefits, they also have certain drawbacks. Global neuroimaging genetics collaborations have been formed in response to some of these issues, with the goal of pooling and comparing brain data and replicating study findings. Although ethical issues have received attention in genetics, neuroimaging, and multi-site collaborative research, there have been few serious studies of the ethical issues raised by the intersection of these fields in global neuroimaging genetics collaborations. The benefits and risks of global neuroimaging genetics collaborations, as well as the potential impact of neuroimaging genetics research discoveries in low- and middle-income nations, are the topics of our conversation. Global neuroimaging genetics partnerships have the potential to improve cross-national connections and address global mental health issues, but there are hazards associated with unfairness, exploitation, and data sharing. Furthermore, in low- and middle-income countries, neuroimaging genetics research must address the issue of feedback of findings as well as the potential of essentializing and stigmatising mental disease interpretations.

Keywords: Genetic variation, Biomarkers, Neuroimaging genetics.

Introduction

Neuroimaging genetics, also known as neuroimaging genomics, combines neuropsychiatric genetics studies with imaging techniques to examine how genetic variation effects brain shape and function. Imaging may reveal a number of intermediary features, or endophenotypes, that are more proximal to the genetic substrate of the condition than a behavioural phenotype in the case of neuropsychiatric disorders that lack clear biomarkers. This greater proximity could aid in pinpointing the genes that cause certain illnesses more effectively [1]. As both genetic and imaging technologies advance, their combined strength may offer translational potential in terms of enhancing neuropsychiatric nosology, diagnosis, therapy, and, ultimately, prevention [2].

While neuroimaging genetics research has a lot of scientific benefits, it also has a number of drawbacks. The expensive expense of imaging investigations, for example, restricts sample size, making it difficult to uncover strong associations and making replication difficult [3]. Global neuroimaging genetics networks have been established to aggregate and compare brain data and replicate study findings in response to these challenges. ENIGMA, IMAGEN, CHARGE, and GIGA are some of these consortia [4]. ENIGMA (Enhancing Neuroimaging Genetics through Meta-Analysis) is the oldest and largest of the neuroimaging genetics consortia, with approximately 2,025 members from 45 countries. It was founded in 2009 and built on the work of earlier international brain mapping consortia [5]. Stigma connected with mental diseases has a variety of causes and manifestations around the world, but its sources are largely constant and traceable within Africa. Fear and hostility arising from culturally informed beliefs about the aetiology of mental disorders, such as beliefs about spiritual causes such as witchcraft, demonic possession, retribution, or the view that symptoms and behaviours are deliberate or indicate weakness or incorrigibility, are primarily responsible for high levels of stigma.

References

1. Thompson PM, Martin NG, Wright MJ. Imaging genomics. Current Opin Neurol. 2010; 23(4):368-73.
2. Roiser J. Bridging the gap between genes and behaviour: the case for neuroimaging genetics. J Neurol Neurosurg Psychiatry. 2011; 82(8).
3. Rose EJ, Donohoe G. Brain vs behavior: an effect size comparison of neuroimaging and cognitive studies of genetic risk for schizophrenia. Schizophr Bull. 2013; 39(3):518-26.
4. Bogdan R, Salmeron BJ, Carey CE, et al. Imaging genetics and genomics in psychiatry: a critical review of progress and potential. Biol Psychiatry. 2017; 82(3):165-75.

Citation: *Tim J. Issues of ethics in international collaborations in neuroimaging genetics. J Res Rep Genet. 2022;4(1):104*

5. Nymberg C, Jia T, Ruggeri B, et al. Analytical strategies for large imaging genetic datasets: experiences from the IMAGEN study. Ann NY Acad Sci. 2013; 1282:92-106.

***Correspondence to:**

Joseph Tim
Department of Pediatrics,
University of California-San Francisco, USA
Tel: +080-23330153
E-mail: Joseph_t@gmail.com

Citation: *Tim J. Issues of ethics in international collaborations in neuroimaging genetics. J Res Rep Genet. 2022;4(1):104*