



Critical Considerations for Studying Low Functioning Autism

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Commentary

Review of neuroimaging studies in understudied populations within the autistic spectrum, focussing specifically on those with minimal verbal ability, intellectual disability, and developmental regression. Despite accounting for nearly a third of the autistic spectrum, the number of studies focussing on these populations is extremely low. This review highlights a critical need for further neuroimaging research on these populations and provides practical suggestions for overcoming the challenges posed by it. In this commentary, I discuss some of the theoretical questions that arise from the review, on the conceptualisation of the autistic spectrum as well as on optimising experimental design and analysis.

While apparently chief brokenness might be a part of ASD, it isn't concerning whether chief impedance is a causal factor adding to in this populace. Helpless chief capacity may anyway affect on a kid's furthermore, learning in the homeroom.

Importantly, it leads to broad questions about the structure of ASD and the optimal methods to study it.

A long standing discussion around dimensions and categories is brought to the fore by this review. Should we be thinking of these different populations (MV, R and ID) as distinct subgroups within ASD? If so, then it raises a question on the nature of overlap between these subgroups. There is likely to be a substantial overlap between these subgroups, with significant noise associated with the subgroup boundaries (due to the diversity of boundary criteria among different

studies, as well as measurement error).

Accordingly, any search for markers unique to these subgroups will be particularly challenging and limited in the scope of information it can provide. As highlighted by the authors of the target article and others, there are multiple such potential subgroups within ASD that could be based on developmental profile, sex/gender, clinical phenotype, as well as cognitive profile.

Neuroimaging is a term that has grown to encompass a wide variety of measures of brain structure and function that include multiple techniques, such as MRI, DTI, as well as MEG, EEG, and NIRS. In this sense of the term, it provides different (endo)phenotypic measures that may map onto different levels (behavioural/clinical or molecular/cellular). Neuroimaging data from the understudied populations within the autism spectrum can make vital contributions to both hypothesis-driven and data-driven studies. In hypothesis-driven studies, such data can help delineate the neural architecture underlying the key dimensions and/or subgroups of interest. In data-driven studies, such data can contribute to building multimodal classifiers, in combination with other data streams, that can be help identify subgroups within ASD. The practical challenges of running neuroimaging experiments on low-functioning individuals with ASD have been highlighted by the authors of the review, along with evidence backed suggestions for overcoming these challenges.

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