Extended Abstract

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Joint Event on Down Syndrome, Autism, Brain Disorders & Therapeutics, October 21-22, 2019, Tokyo, Japan - A study on the perceptions of parents on savant skills of individuals with ASD

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Savant syndrome is an unusual condition. It is a phenomenon whereby individuals with challenging intellectual disabilities, including Autism Spectrum Disorder (ASD), may demonstrate some areas of talents which are in contrast with their overall low level of general functioning (Bennett & Heaton, 2017; Finocchiaro et al., 2015; Jeon, 2016). One in ten persons with ASD has savant abilities in varying degrees (Finocchiaro et al., 2015; Treffert, 2014). Computed tomography (CT) and MRI provide stunningly high-resolution images of all the brain architecture, surface and deep, permitting detailed inspection of brain structure. However, studies of brain function, like positron emission tomography (PET), single photon emission CT (SPECT) or functional MRI, are far more informative regarding savant syndrome, and, indeed, autism itself, since these newer techniques provide information about the brain at work, instead of simply viewing brain architecture. An even newer imaging technique is diffusion tensor imaging, supported measuring water flow within neurons, which provides graphic images of brain connectivity between the brain hemispheres, within the brain hemispheres and between upper cortical and lower brain stem structures. A related technique, diffusion tensor tracking, provides an immediate field of vision of the particular fibre tracks, or wiring, of the brain in great detail. One of the drawbacks to savant functional imaging research, especially art and music performance skills, has been the required immobilization of the topic when doing the imaging. Near-infrared spectroscopy, which measures haemoglobin, uses an infrared cap which the patient can wear while 'at work' performing music or painting or drawing, for instance . Also there are many advances in electroencephalographic techniques, including magnetoencephalography, which provides an excellent deal of additional information beyond the standard electroencephalographic findings. Detailed, standardized neuropsychological test results can then be correlated with the imaging findings in savants in sufficiently large samples to maneuver faraway from what are numerous single subject, anecdotal reports. Control groups of non-impaired persons can be assembled to compare and contrast findings in both groups. Beyond that, since the interface between genius, prodigies and savants is a crucial , and in some ways a really narrow one, those persons should be included also in these multidisciplinary, multimodality, compare and contrast studies. Such studies can shed light on the talk regarding general intelligence versus separate intelligences. Some researchers suggest that savants provide a unique window into the creative process itself. From studies already completed, important information has already emerged regarding brain function, brain plasticity, CNS compensation, recruitment and repair. Today, many parents of individuals with ASD are focused on the individual's deficits rather than on his or her strengths. Even when parents recognize and identify their child's savant skill to be valuable, and wish to develop this talent, they face the challenge that there are insufficient programs committed to supporting the development and improvement of such savant skills. By understanding the association between parental perception and its influence on the support for the development of savant skills, the author hopes to promote awareness amongst parents of individuals with ASD about the importance of providing additional impetus for governmental and non-governmental organizations

Note: This work is partly presented at Joint Event on Down Syndrome, Autism, Brain Disorders & Therapeutics, October on 21-22, 2019 held at Tokyo, Japan

to endorse such awareness. In addition, the author hopes that these organizations will develop and improve curriculums committed to the advancement of savant skills for individuals with ASD. Researchers used to consider savant skills as unimportant. However, the savant syndrome has become an area of research for scientists who are endeavoring to comprehend the intricacies of the human mind. The savant syndrome has been wont to describe individuals who have intellectual disabilities and challenges, yet possess extraordinary abilities in reading, arithmetic, calendar calculations, art or music (Finocchiaro et al., 2015; Jeon, 2016). The findings to this study indicate that there may be a larger percentage of individuals with ASD who possess savant skills than established in previous literature. The study also suggests that developmental success of savant skills is highly reliant on parental perceptions and their corresponding support. The high frequency of savant skills amongst individuals with ASD determined during this study lends further support to the idea that there's an in depth connection between ASD and the occurrence of savant skills (Boso et al., 2010; Clark, 2001). Thus, this study has implications for the way parents and professionals engage with individuals with ASD. In most settings, parents and professionals tend to work on the deficits and shortfalls of individuals with ASD. An alternative approach is to work on the positive traits and strengths of individuals with ASD to enhance their interests and talents. This may involve substantial rethinking of practices concerning individuals with ASD.

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