Autism Prevalence – is it really on the rise?

The increase in autism statistics continues to make headlines. ASA’s Clinical Director Erika Gleeson (G.C Autism, B.A Behavioural Science and Communications) offers insight into the controversy regarding the reported dramatic increase in autism diagnoses.

The increase in Autism prevalence/new diagnoses

It’s a question many people ask my opinion on and it remains a very topical debate; professionals are divided.

Looking at the statistics, The ABS reports the following, “The 2012 Survey of Disability, Ageing and Carers (SDAC) showed an estimated 115,400 Australians (0.5%) had autism. This was a 79% increase on the 64,400 people estimated to have the condition in 2009”. (Our maths tells us this is in fact approximately a 44% increase).

Where did these stats come from?

SDAC is achieved by asking approximately fifteen areas of limitation, e.g. speech difficulties and learning difficulties. Social interaction, a common deficit associated with autism spectrum disorders (and a diagnostic criterion), is not amongst these fifteen areas. The majority of people with autism (85%) are identified in the survey because they reported having difficulty learning or understanding.

It may be that as they move out of the education system and into an adult life, the focus on learning on a daily basis decreases and they are therefore not facing the same challenges. Secondly, seven ways of learning have been identified as: visual (special),
solitary (intrapersonal), social (interpersonal), logical (mathematical), physical (kinesthetic), verbal (linguistical) and aural (auditory-musical). The question must be asked whether standard Australian curriculums adequately cater for the differing learning styles of individuals and subsequently contribute to difficulties in learning and understanding. In terms of non-etiologic factors such as changes in diagnosis reporting practice, to the best of my knowledge, no study has quantified the degree to which changes in reporting practices might explain this increase.

Contrary to the above statistics, Amanda Baxter and team from the Queensland Centre for Mental Health Research at the University of Queensland found no evidence of an increase of the condition in the past 20 years. Taking into account different study methods, they were able to estimate the prevalence of autism spectrum disorder across the lifespan, across the world, and from that, calculate the disease burden caused by the disorder. It was ascertained that the way in which studies were conducted had a huge impact on the prevalence that was reported, and once this disparity was incorporated in, it was determined that prevalence across the lifespan was about one in 132 people. It was highlighted that because the condition starts so early in life, and it’s a chronic disease meaning it continues along the lifespan, a lot of those people who currently have the disorder are adults, and so approximately 52 million people in the world who have an autism spectrum disorder have actually transitioned into adulthood. A lot of the statistics reflect current rates of diagnoses in children, not adults. Incidence should not be confused with prevalence, which is the proportion of cases in the population at a given time rather than rate of occurrence of new cases.

It should be noted that it wasn’t until 1980 that a clear distinction was made in the diagnostic criteria (DSM 3) separating autism from schizophrenia, and infantile autism was introduced, whereby a child displayed “gross deficits in language development” and “a pervasive lack of responsiveness to other people”, prior to 30 months of age. We now recognise that children can present with less severe autistic symptoms, which are often difficult to identify at such a young age.
It is probable that the many thousands of adults incorrectly diagnosed would meet the current criteria albeit didn’t meet the diagnostic criteria of the time and/or were coined ‘egocentric’ due to a lack of understanding. Temple Grandin is a great public figure that stands testament to this. Many of these individuals have gone on to live fulfilling lives, contributing to society and developing our understanding of the disorder at large.

What Baxter and the team also discovered, was that the research did not just apply to westernised societies. The rates were relatively steady in populations right around the world and relatively stable over time. The prevalence found for 2010, which was about 0.8% of the population, was very similar to what was found for 1990.

This recent worldwide research then also adds further validity to the lack of evidence supporting the correlation between vaccination and autism. “Taken together, some dozen studies have now shown that the age of onset of ASD does not differ between vaccinated and unvaccinated children, the severity or course of ASD does not differ between vaccinated and unvaccinated children, and now the risk of ASD recurrence in families does not differ between vaccinated and unvaccinated children.”

In plain English, no scientific evidence exists for vaccination and autism. In fact, scientific evidence indicates no correlation.

The vaccination debate will remain for another time.
If in fact autism is on the rise, what is causing the increase?

Environmental factors

What can be concluded from research to date is that there is no single environmental factor we know of that has substantially contributed to the increase in autism diagnoses.

Genetics

There is a multitude of genetic studies supporting the view that autism has a genetic component, for example, a recent study has demonstrated a link between autism and the Engrailed 2 (EN2) gene, which may contribute to up to 40% of autism cases in the general population. EN2 is involved in normal neural development.

The study provides further genetic evidence that EN2 might predispose to ASD, and the authors suggest that disruptions in the expression of EN2 gene could significantly alter normal brain development.

Premature birth/low birth weight

In multivariate analyses, birth weight of ASD commonly co-occurs with other developmental, psychiatric, neurologic, chromosomal, and genetic diagnoses.

The co-occurrence of one or more non-ASD developmental diagnoses is 83%. The co-occurrence of one or more psychiatric diagnoses is 10%.

Parental age

A study by Durkin et al (2008) titled ‘Advanced parental age and the risk of autism spectrum disorder’ concluded that, “Firstborn offspring of 2 older parents were 3 times more likely to develop autism than were third- or later-born offspring of mothers aged 20-34 years and fathers aged <40 years.
In terms of support for individuals with ASD, Applied Behaviour Analysis is the only recognised and scientifically proven support. A multitude of studies have been undertaken to ascertain the effectiveness of ABA interventions on individuals with ASD (as well as other developmental disorders), for both the short and long-term. Some of the areas that these studies have focused on include adaptive functioning, intelligence and language skills, just to name a few (Axelrod et al., 2012). Further studies have indicated gains in improving the quality of life of the individuals, improving productivity and eliminating potentially life-threatening behaviours of concern (Axelrod et al., 2012). Much of the literature suggests that behavioural intervention is in fact the most effective method of addressing the sometimes-complex needs of individuals with ASD (Axelrod et al., 2012).

The USA have legislated for the support of children with autism (The Combating Autism Act, 2011) with over $1.7 billion in federal funding dedicated to autism, having been provided to the National Institutes of Health, the Centers for Disease Control and Prevention, and the Human Resources and Services Administration. An additional $122 million was appropriated in 2009 and 2010 through the American Recovery and Reinvestment Act.

Hillary Clinton made the headlines this week with a further proposal for early screening, treatment and funding (you can read the article here).

One should always be cautious about adopting a position based on unsubstantiated evidence. Raising awareness and engaging in discussions are an important part of theory evolution,
however a science-based approach must be taken in answering these questions. Much debate remains subjective. It's possible the true prevalence of autism is increasing, and we just haven’t yet identified the cause. It's also possible that the prevalence remains stable and that there lies the reason we can’t find the cause/s for the increase. Our understanding of Autism has expanded rapidly since Leo Kanner’s pioneering work we are at the edge of great discovery.

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**Further references**

(Dr. Bryan King, a doctor at the University of Washington and Seattle Children’s Hospital editorial in JAMA).


(Birth weight and gestational age characteristics of children with autism, including a comparison with other developmental disabilities. Schendel D1, Bhasin TK. (2008))