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UNDERSTANDING NEURODIVERSITY

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Singapore Psychological Society
(Established 1979)

Editor's Note

Neurodiversity represents the spectrum of neurological differences within the human population, encompassing individuals with conditions such as autism, ADHD, dyslexia, and more. Understanding neurodiversity goes beyond recognizing these differences; it entails embracing them as essential aspects of human variation.

In the field of psychology, embracing neurodiversity is crucial for practitioners and students alike, in the focus on individuals' unique abilities rather than viewing their differences as deficits. By recognizing the diverse ways in which individuals process information, perceive the world, and interact with others, psychologists can provide more effective and inclusive support and interventions.

Psychology practitioners can benefit from understanding neurodiversity by honing their assessment and diagnostic skills to account for diverse neurocognitive profiles. They can tailor interventions to accommodate individual strengths and challenges, and promote neurodiverse-friendly environments that foster acceptance and empowerment. For psychology students, learning about neurodiversity offers valuable insights into the complexities of human cognition, behaviour and development, encourages critical thinking about traditional diagnostic labels, and encourages a more nuanced understanding of human diversity.

In the current issue, our contributing authors encourage us to embrace neurodiversity with curiosity and acceptance and to recognize both the advantages and challenges stemming from exceptional differences. They explore neurodiversity in education and the workplace and offer some insights into mental health detection, interventions, and technological assistance to help enable neurodiverse populations.

Read on to explore.

Dr Denise Dillon
Editor-in-Chief

Vice President's Address

The term “neurodiversity” encapsulates the rich diversity of all human minds, but it is often discussed in relation to specific neurodevelopmental conditions such as autism, ADHD, and dyslexia. It is a concept that emphasises the varied ways in which people experience and interact with the world and rejects the notion that there is a singular right way to think, learn, or behave. Instead, it views these differences not as deficits but as natural variations of the human mind.

In the workplace, neurodivergent individuals may bring unique perspectives and tremendous value but their potential frequently remains untapped due to insufficient support and understanding within traditional organisational structures. Employees with autism may find their innovative ideas overlooked due to communication barriers, while those with ADHD may struggle to reach their full potential in environments rife with distractions. This does not have to be the case. Organisations can, and should, cultivate environments to provide the necessary support to accommodate their unique needs and where neurodivergent team members can excel and feel valued every day. As a start, simple yet thoughtful adjustments can make a profound difference. For example, we can offer a quiet space or provide noise-cancelling headphones to accommodate employees with sensory needs. We can avoid sarcasm, euphemism and implied messages but provide clear verbal and written instructions. We can provide advance notice of changes in plans and explain the reasons behind them whenever possible. It is imperative that we all contribute to fostering environments that are conducive to neurodiversity, recognizing and celebrating each person’s individual strengths and talents.

In Singapore, our journey towards embracing neurodiversity has only just begun. While initiatives to promote inclusivity have been set in motion, the conversation around neurodiversity often remains confined to academic and practitioner circles. We need to also broaden this dialogue to include the general public, employers and policymakers to make a difference. Greater psychoeducation is essential to ensure that neurodiversity is understood and valued within our communities and workplaces. As Singapore continues to develop its approach to mental health and inclusivity, let us ensure that neurodiversity is a key part of this conversation. By building a more inclusive society that values every individual's contribution, we can harness the full potential of our diverse population.

Read on and get psyched!

Mok Kai Chuen
Vice President (Outreach)

Embracing Neurodiversity with Curiosity

By Mr Roger Tan

Many years ago, I joined my senior from the University in setting up a new venture using his PhD project of a huggable jacket to use for compression therapy for autistic children. That was my first direct experience interacting with people who are neurologically diverse from me. I was afraid at first, I did not know what to expect because 'they' do not behave the same way as 'us'. Furthermore, I had heard stories of how children high on the autism spectrum can react aggressively should something just somehow upset them. That did not help at all in making me less afraid of 'them'.

However, with time I also began to find out that the reason these neurodivergent people do not behave the same way as neurotypical people is because their brain structures are slightly different. The reason why people with autism sometimes react violently is because things which seem innocent to us are processed neurologically differently in their brains. A soft hissing sound from the boiling kettle could be like a loud, sharp and piercing scream, penetrating right into one's ears. Adding to the difficulty is that some people with autism do not speak 'our' language coherently. Or rather 'we' never learnt their way of communication. Hence when their senses pick up disturbing stimuli which neurotypical people do not pick up, what we see is only a "special needs person" having a violent outbreak who is in need of pacification rather than kind understanding.

Then I saw how hurt and tired their parents and families were; I saw how much a mother wanted to talk to her autistic son who was unable to speak; I saw how a ten-year-old girl was taking care of her fifteen-year-old autistic brother with patience and love; then I stopped fearing 'them'.

Imagine right now a really loud, sharp and piercing shriek is coming from a strange device in the next room. You feel like your eardrums are going to burst. You cry for help and want that device to be turned off. However, you speak English and everyone around you seems to communicate in a totally different way, consisting of hand signals and head gestures. To make matters worse none of them seem to even notice the sharp, piercing shriek which you are hearing. Will you have a meltdown or even react violently to try to make that device stop hurting your ears? Especially since everyone around you is looking at you with strange eyes? This is what is really happening to children with autism when they have a meltdown. It takes lots of understanding and openness to be able to comprehend that their seemingly violent behaviour is really a desperate call for help.

Therefore, there is a serious need to break down the barriers between ‘us’ and ‘them’. Neurodiverse people are part of our society, part of our community and part of our family. They are part of us and we should not cast them out of mind simply because they are neurologically different from us. Just as it is wrong to judge a person because their skin tone is different from ours, we should not exclude a person because of their neurological diversity, be it autism spectrum disorder, ADHD, Down Syndrome or otherwise. Additionally, rather than to go through what I have gone through before coming to terms with this reality in the lengthy way, an easier way perhaps may be to use curiosity as a means to break down the ‘us’ and ‘them’ mentality (Shigeoka, 2023a) and embrace differences without discrimination.

Curiosity is the bridge for interpersonal connections. Nonetheless we need to cultivate “deep curiosity” rather than “shallow curiosity”—the curiosity which we commonly understand. Deep curiosity goes beyond simply asking questions like ‘What do you do in your free time?’, ‘Why do you like to do that?’. Deep curiosity opens up life stories, values, and beliefs to welcome others into our lives. The best part about it is that it can be cultivated with just four simple phrases that have the power to strongly include others into our community (Shigeoka, 2023b).

Let us start with the first phrase: “I don’t know”. Everytime we meet a neurologically diverse person, our predisposed perception will automatically take over and start assessing the person based on our subjective personal beliefs.

That is why when I first interacted with my autistic clients, I felt afraid. However, if we tell ourselves “I don’t know”, any impression about whoever is standing in front of us will be refuted. This is because “I don’t know” will suspend all predisposed beliefs we have in our mind and instead tell ourselves that we know absolutely nothing about the neurologically diverse person in front of us. If you are like me, somehow when you are next to a neurologically diverse person, you may feel unsure about how to approach them. How about telling yourself “I don’t know”? This will then challenge whatever anxious thoughts that are bubbling underneath your subconscious and embrace the truth which is that we know nothing about this person standing in front of us. This may then lay the foundation for the bridge of connection to be forged.

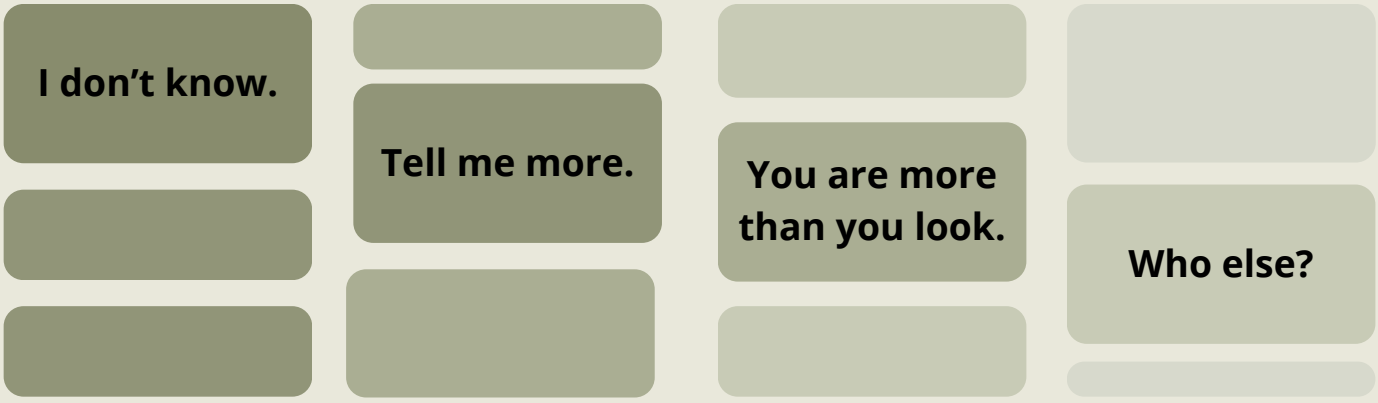
The second phrase is: “Tell me more”. When we ask another person to “Tell me more” we are breaking down communication barriers and forging new connections because we are welcoming that person to open up to us (Gottman & Gottman, 2018). Additionally, it will foster a sense of curiosity in us, wanting to find out more about the other party and hence open our hearts and minds up to the other party as well.

Therefore, the “Tell me more”prompt can break down the unseen walls we have around neurologically diverse people and thus allow us to get to know them better. This understanding will allow us to not only accept them but embrace them as part of our community.

The third phrase is: “You are more than you look”. Many times after interacting with another person we automatically start to form impressions about them or even make judgement about them based solely on our subjective view of their behaviour. This is even more true when we interact with people who are neurologically diverse. Their behaviour may sometimes be different from what we are used to. However, if we remind ourselves that “You are more than you look” we let go of that subjective impression/judgement that we formed of them and consider things about the person standing in front of us that we do not see or understand. This is really important when dealing with neurologically diverse people because frequently we really do not understand how their minds work. Rather than simply judging them based on our subjective view of how we think people should behave, we remove all labels we were going to place on them and embrace them with open-mindedness.

The fourth and last phrase will be: “Who else?”. When we ask “Who else?”, we are really on the lookout for yet another person to come and interact with us. This is not only an act of curiosity, it is essentially an attitude of inclusiveness. Each time when we are interacting with neurologically diverse people, when we ask “Who else?”, we are inviting yet another person to be included. However, more importantly, we open our mind with a welcoming attitude to be ready to embrace more diversity into our community.

All in all, when we next interact with a neurologically diverse person (be it someone with ADHD, Autism Spectrum Disorder, or others), let us remember to tell ourselves “I don’t know”. This is because we really “don’t know” and are jumping to conclusions. Next, during interaction with them, at any point when we feel our minds are closing up as we do not really know how to understand or communicate with the person, remember to ask “Tell me more”. This is because we then open up our minds to sincerely hear them out and allow them to express themselves. If, somehow, we find ourselves starting to distance ourselves from the person because our minds are starting to somewhat unconsciously judge them based on our interactions so far, remember to tell ourselves “You are more than you look”. This is because that is the fact—that we are judging the person based on what we subjectively perceive. The person is definitely more than how they look to us. Last, but not least, always ask “Who else?”; this stimulates our curiosity to include even more people but most importantly opens up our mind to welcome and embrace more diversity into our communities.



Talent & Advantages in Neurodiversity

By Dr. Liliana Ferreira da Costa & Prof. Ricardo Costa Marques

"When we think about disabilities and health conditions in the workplace, we often think about barriers and ways to overcome them. It wasn't that long ago that traits and symptoms of health conditions were seen as problems that needed fixing, but as the times change, so do we and our attitudes. So, what if I told you there can be a huge advantage to recruiting neurodiverse employees into your business?"
(Medigold Health, 2024)

Indeed, neurodiversity can be seen as a competitive advantage, according to Austin and Pisano (2017).

However, what is Neurodiversity?

According to Baumer and Frueh (2021), neurodiversity plus diversity addresses all people, not forgetting that it is commonly associated with Autism Spectrum (ASD) and ADHD disorder (Attention Deficit and Hyperactivity Disorder).

"The neurodiversity movement emerged during the 1990s, aiming to increase acceptance and inclusion of all people while embracing neurological differences."
(Baumer & Frueh, 2021).

Neurodiversity, A Path of Advantages & Talent in the Workplace

"Understanding and embracing neurodiversity in communities, schools, healthcare settings, and workplaces can improve inclusivity for all people." (Baumer & Frueh, 2021)

The Case of John, by Austin & Pisano

The case of John (fictional name), stated by Austin and Pisano (2017), shows the importance of having an open mind and understanding about how to be inclusive and respectful to each other. With high levels of *"...mathematical ability and software development skill.... His CV features two master's degrees, both with honors. An obvious guy for a tech company to scoop up, right?"* (Austin & Pisano, 2017).
John is a great example of people whose privacy needs to be protected; people with autism spectrum disorder.

John represents neurodiverse talent and participates in pioneering programs in companies and research that have begun seeking this same neurodiverse talent and advantages (Austin & Pisano, 2017). As expected, John is one of the most productive employees in his company, addressing in this sense that the path of inclusion in diversity has excellent results for both parties. Such a combination has been proven to be very effective for many companies and, specifically, for the wellness of people with neurodiversity. In the end, all of these traits can be transformed into great talent.

It is important to address that we are different from each other, but these differences can strengthen our relationships with each other, and are capable of making differences in our lives.

Opportunities in the Workplace

"Neurodiversity is the idea that neurological differences like autism and ADHD are the result of normal, natural variation in the human genome (...) Our ways of thinking result from both our inherent 'machinery' and the experiences that have 'programmed' us."
(Robinson, 2017)

In the last two years, several worldwide prominent companies such as SAP and Hewlett Packard Enterprise (HPE), among others, have successfully reformed their Human Resources processes in order to have access to neurodiverse talent and provide more opportunities to employees.

In the case of HPE, their program has "*... placed more than 30 participants in software-testing roles at Australia's Department of Human Services (DHS). Preliminary results suggest that the organization's neurodiverse testing teams are 30% more productive than the others. Inspired by the successes at DHS, the Australian Defense Department is now working with HPE to develop a neurodiversity program in cybersecurity*" (Austin & Pisano, 2017).

Neurodiversity-Friendly Workplaces

According to Baumer and Frueh (2021), a few small adjustments are required to ensure that all employees have access to appropriate safety and health, such as having an environment that accommodates their sensory needs, clear communication, an inclusive environment, taking the time to explain any changes in rules and, most importantly, being met with patience and kindness.

Neurodiversity in Education

By Ms Elsie Hui

Neurodiversity acknowledges the differences in human cognition and behavior, focusing on the strengths and talents of neurodivergent individuals rather than their deficits (Chrysochoou et al., 2022). In education, this paradigm advocates for inclusive practices that accommodate and celebrate the variability in how people learn (Leadbitter et al., 2021). It encourages the development of interventions that leverage the unique interests and strengths of neurodivergent individuals, thus emphasizing the importance of creating supportive and inclusive environments for these students (Cierzniewska & Podgórska-Jachnik, 2021; Kapp et al., 2013).

Embracing neurodiversity in education involves reframing traditional perspectives on learning and cognition. It calls for moving away from a one-size-fits-all approach and recognising the diverse cognitive profiles of students (Cunff et al., 2023). Overall, neurodiversity in education underscores the importance of embracing cognitive differences, promoting inclusive practices, and providing support tailored to the individual strengths and challenges of neurodivergent individuals.

Recognition and understanding of neurodivergent conditions have been steadily growing in recent years, promoting greater awareness and support for individuals with diverse cognitive profiles. In Singapore, key neurodivergent conditions include autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), and dyslexia.

- **Autism Spectrum Disorder (ASD)** is characterised by challenges in social communication and interaction, as well as restricted and repetitive behaviors (Baron-Cohen, 2017). Individuals with ASD may have difficulty with social cues and communication, often exhibiting repetitive behaviors or intense interests. These characteristics can affect learning by impacting social interactions, communication skills, and flexibility in learning environments.

- **Attention Deficit Hyperactivity Disorder (ADHD)** is a neurodevelopmental disorder marked by symptoms of inattention, hyperactivity, and impulsivity (Zuberer et al., 2015). Individuals with ADHD may struggle with maintaining focus, organising tasks, and controlling impulses. These challenges can affect learning by impacting attention span, task completion, and self-regulation in educational settings.

- **Dyslexia** is a specific learning disability that affects reading and language processing (Wagner et al., 2020). Individuals with dyslexia may have difficulty with accurate and fluent word recognition, spelling, and decoding abilities. These difficulties can impact learning by affecting reading comprehension, writing skills, and overall academic performance.

Neurodivergent students often face significant challenges in traditional educational settings due to their cognitive differences. Conventional teaching methods may not cater to the diverse learning styles and needs of neurodiverse students, leading to difficulties in engagement, participation, and academic success (Pope et al., 2007). Furthermore, a lack of understanding and support among educators can result in limited access to appropriate accommodations for neurodivergent individuals (Mullikin et al., 2021). Therefore, educators must understand the common characteristics of these conditions and their impact on learning. With this knowledge, educators will be better equipped to create inclusive and supportive environments that cater to the diverse needs of neurodivergent students.

Practical Tips for Educators to Support Neurodivergent Individuals

Creating an inclusive and supportive classroom environment for neurodivergent students requires a multifaceted approach. Here are some actionable strategies educators can implement to support them:

1. Consider **Differentiated Instruction and Universal Design for Learning (UDL) Principles**: Offering varied teaching methods and materials caters to diverse learning styles and abilities (Baurhoo & Asghar, 2014). Differentiated instruction (e.g., incorporating a mix of visual, auditory, and kinesthetic elements into lessons for students with varying levels of readiness, interests, and learning styles) and UDL principles (e.g., Multiple means of Engagement—collaborative activities or choice in assignments; Expression—scaffolding or offer different modes of demonstrating knowledge; Representation—presenting information in various formats) ensure that all students can engage with the material in ways that work best for them, thus promoting equity and inclusion in the classroom.

2. Use **Visual Aids and Hands-on Activities**: Incorporating visual tools and interactive tasks can significantly enhance understanding and engagement for neurodiverse students. Visual aids, such as charts, diagrams, and flashcards, along with hands-on activities, cater to different learning styles and help reinforce learning (Sigmon et al., 2016). These methods can make abstract concepts more tangible and easier to grasp.

3. Pay Attention to the **Classroom Environment and Management**: Creating a structured and supportive classroom environment is essential for minimising distractions and promoting positive behavior (Wakeman et al., 2021). This includes organising the physical space thoughtfully, establishing clear routines, and using positive reinforcement to encourage desired behaviors.

4. **Regular Check-in**: Establishing open communication channels with neurodiverse students is essential. Regular check-ins help identify challenges and provide necessary support promptly (Hersh & Elley, 2019). By understanding each student's unique needs, educators can tailor their approach to ensure these students feel heard and supported.

5. **Foster an Inclusive Classroom Culture**: Celebrating all students' strengths and achievements creates a supportive environment that values diversity and promotes a sense of belonging (Accardo, 2024). Encouraging peer recognition and celebrating individual milestones helps build a positive classroom culture where every student feels valued and included.

6. **Stay Informed and Continuously Seek Out New Strategies and Resources**: Ongoing professional development is crucial for educators to enhance their knowledge and skills in supporting neurodiverse learners (Khan et al., 2022). Staying informed about the latest research and strategies ensures that educators can implement the most effective practices and reflect on their teaching methods. This commitment to continuous upskilling fosters a dynamic and responsive teaching environment that will be appropriate for neurodivergent individuals.

To conclude, by following these practical tips, educators can create inclusive and supportive learning environments that cater to the diverse needs of neurodivergent students, ultimately fostering their academic success and well-being.

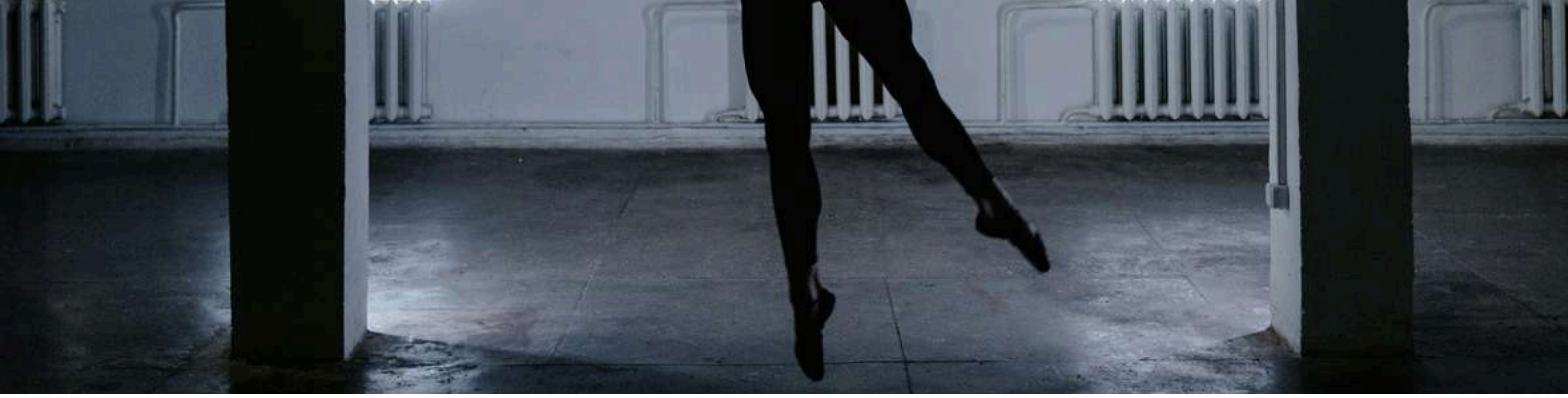
Gifted Individuals: Understanding the Challenging, the Underground, and the Dropouts

Mr Zeb Lim

What comes to mind when you think of gifted and talented individuals? Most people probably assume that gifted and talented individuals are well-functioning and need little outside support. However, psychologists George Betts and Maureen Neihart (1988) disagreed with this assumption. They profiled 6 different types of gifted individuals, namely: 1) Successful, 2) Challenging, 3) Underground, 4) Dropouts, 5) Double-labelled, and 6) Autonomous Learners. The profiles help educators and caregivers better understand and support the gifted, looking at the feelings, behaviours, and needs of the different types of gifted individuals.

This article will focus on the 3 types of gifted individuals identified as most likely to slip through the cracks: 1) Challenging, 2) Underground, and 3) Dropouts. These 3 types may slip through the cracks because most people equate giftedness as being high-achieving and academically successful, and these groups do not conform to that typical gifted persona. Hence, they may not receive the additional academic support and intervention to facilitate their educational growth that may be extended to the typical gifted students.

By using cinematherapy, the different profiles can be better differentiated, highlighting the possible support and intervention that can be rendered to better aid these groups of individuals. Cinematherapy is a therapeutic technique that involves assigning movies for clients to watch between sessions to be used as a stimulus for discussion or metaphorical intervention (Sharp et al., 2002). As more people watch movies, people are far more likely to identify movie characters versus book characters.



The Challenging

A male ballet dancer remains the exception rather than the norm, and Billy Elliot's character (Daldry, 2000) is a prime example of the Challenging gifted type. This group of gifted individuals is creative, often challenges authority, and does not conform to the system (Betts & Neihart, 1988). Billy Elliot's desire to be a dancer does not match the family's economic ability to fund his education, and his family worries that he would be seen as gay. The world of the Challenging gifted and their parents may conflict, causing them to lack appropriate support to pursue their passions, gifts, and talents.

In Singapore, creative individuals have opportunities to pursue their creative talent in the School of the Arts (SOTA), Singapore National Academy of Fine Arts (NAFA), LASALLE College of the Arts (LASALLE), Singapore University of Technology and Design (SUTD), and Singapore University of the Arts (UAS). However, the lack of career opportunities in these fields compared to business or tech may still prompt parents to try to dissuade their children from pursuing their talents.

The Underground

Disney's Fa Mulan (Bancroft & Cook, 1998) character represents the typical Underground gifted type. While girls tend to be in this group, some boys may mask their gifts and talents to fit in, especially during adolescence, when fitting in with one's peers may be more important than standing out (Betts & Neihart, 1988). In the film, Mulan possesses great intellect and tactical understanding, and she is able to use her brain over brawn to overcome the challenges she faces amongst the men in her team and fight against the enemy. Yet, in ancient China, due to social and cultural norms of that time, smart girls would still be relegated to fulfilling family duties and obligations.

In modern-day Singapore, where meritocracy is the norm, we cannot discount the fact that gifted girls who are from lower SES or larger families may still be held back from further education in university to help out with family economics or to allow their younger siblings to have an equitable chance to study. Connecting gifted girls and women to resources, such as scholarships, would help reduce the family's financial concerns and their worry about spending more on their child's education.

The Dropouts

In the movie, Good Will Hunting (Van Sant, 1997), we journey with Will Hunting, a math genius who falls under the Dropouts gifted type. The dropouts are angry with themselves or adults because they feel rejected and unsupported growing up. They may drop out of school due to feeling ignored (their gifts and talents not identified) and not fitting in with their peers. This group may withdraw or lash out at others (Betts & Neihart, 1988). In the film, Dr Sean Maguire is roped in to help Will and, according to his typology, Will challenges Sean. Dr Barbara Kerr, a Distinguished Professor in gifted education (personal communication, 2005), aptly said, “Gifted kids can be like prickly cactus, putting up defenses against a world that has hurt them in the past. They must test you out before they let you into their world.”

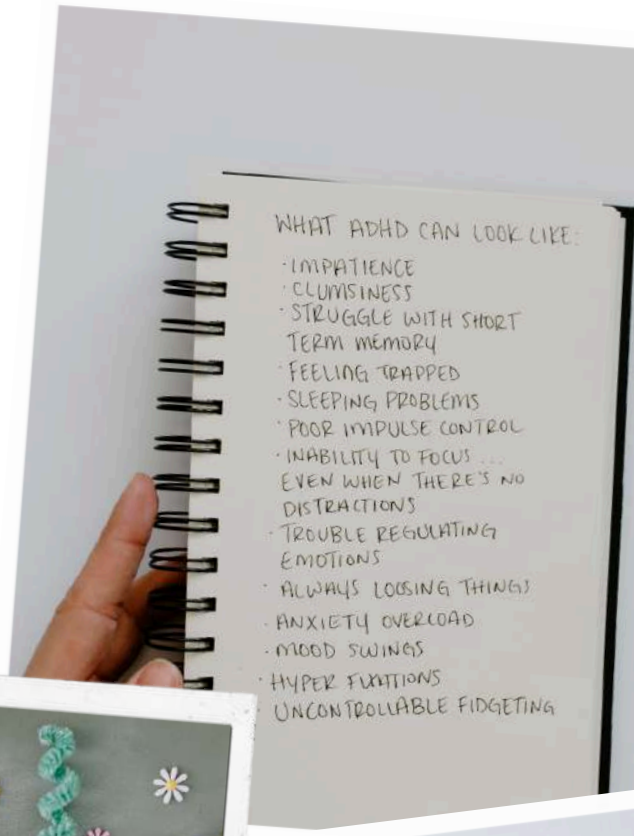
Dr Maguire understands that relationships often go through rupture and repair cycles and is able to help Will accordingly in subsequent sessions. As in life, after some cooling-off period, once both parties have had a chance to air their grievances in a relationship and feel heard and fully understood, the connection is often restored (Hendel, 2020). The importance of having a supportive parent, teacher, or other allies in encouraging and mentoring the gifted individual cannot be ignored.

The world of giftedness is often oversimplified, and gifted individuals may be underserved. By recognizing the diversity of giftedness, psychologists and other parties who may work with variously gifted individuals can better identify and support them. Consultation and referral with those with experience and knowledge of working with the gifted and talented are always welcomed.

The Emotional Aspects of Adult ADHD

By Mr. Benjamin Low

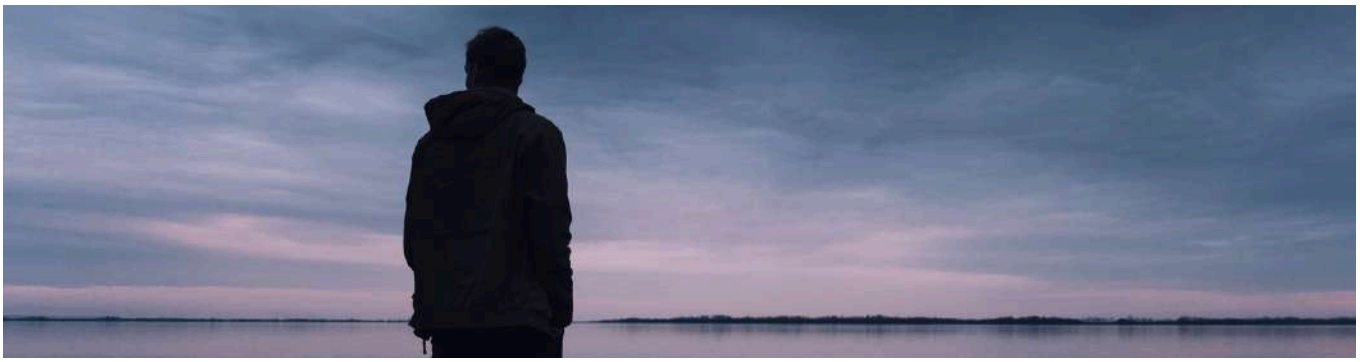
ADHD consists of a persistent pattern of inattention, hyperactivity-impulsivity, or both, that first emerges in early life (American Psychiatric Association, 2022). The symptoms are present in multiple areas of life and disrupt social, academic, or work activities. Clinical experience suggests that they also disrupt routine chores, paperwork, or leisure activities. This article discusses the oft-neglected emotional side of ADHD in adults. It comments on the topic from a scientific perspective as well as a clinical one, informed by years of assessing and managing ADHD in university-aged adults and adults in the working phase of their careers.



Falling Behind

Adult patients tend to become aware of the concept of ADHD later in life. Due to various environmental and psychological factors, their earlier symptoms might have been mistaken for naughtiness, or had teachers or parents implement copious compensatory strategies that masked symptoms; otherwise they did well enough in school to go unnoticed despite an inordinate amount of effort to avoid falling behind.

Undiagnosed adults are also found in professional jobs or management roles. Such adults learn about ADHD when their child, friend, or family member gets assessed for ADHD. Self-help 'Googling' for their challenges is another way that they encounter the term.



Adults with untreated ADHD tend to have poorer academic, career, and relationship outcomes alongside a higher risk of substance use disorders (Kooij et al., 2010). Recreational pursuits also suffer. Anonymised real-life examples include those from the academic, career, social, and recreational spheres as tabled here.

Academic	Career	Social	Recreational
Investing much more effort than others just to be on par with peers	Disorganisation and procrastination leading to untimely or poor-quality work that does not live up to one's known capabilities	Forgetting to make or keep social appointments, resulting in deteriorating friendships	Forgetting content from the earlier parts of a movie or TV series
Difficulties sustaining focus or remembering material during longer study periods	Work that is timely and of good quality but is done with immense stress or done at the 11th hour	Forgetting agreements made with significant others, such as those made after quarrels	Recurrent difficulties in sustaining interest in them in the long-run
Difficulties remaining seated to study	Frequent mistakes despite efforts to the contrary	Inappropriate interruptions that irritate friends or loved ones	Logistical disororganisation in preparing or engaging in leisure activities
	Proposing ideas quickly with poor follow-through, or overburdening oneself by formally proposing it as a work task		

The deficits behind ADHD lead to a history of failure and underachievement (Safren et al., 2004). This fosters dysfunctional mental states, which in turn foster negative emotional states that encourage self-defeating compensatory strategies. Over years of struggle with untreated ADHD, a history of negative outcomes emerges (Young et al., 2020) and starts to be accompanied by varying levels of anxiety, insomnia, demoralisation, self-deprecation, or depression in addition to the symptoms and deficits of ADHD (Geffen & Forster, 2018). The emotional consequences can further worsen life outcomes in addition to the core symptoms of ADHD. Without a psychological assessment of their underlying difficulties, adults with undiagnosed ADHD tend to arrive at one conclusion: "I'm the problem".

Dysfunctional thinking about oneself underpins emotional disturbances in adult ADHD (Mitchell et al., 2013). Dysfunctional perfectionism is especially prominent (Strohmeier et al., 2016). Clinical experience suggests that perfectionistic behaviour and self-evaluations tend to occur as a compensatory strategy to meet the demands of everyday life with ADHD. That is, adults with ADHD feel that they need to get things perfect so that they can produce adequate work against the background of ADHD symptoms. In many cases, this is too extreme and starts to achieve the opposite. For example, taking 30 minutes to craft and recheck a routine email may function as a way to prevent mistakes. However, this 30-minute email has consumed 1/16th of a work day. The cumulative impact of excessive time and effort spent on trivial tasks will further reduce the productivity that a person with ADHD might be trying to achieve.

Sometimes, a person with ADHD need not be making mistakes to feel distressed. Merely knowing that others are paying attention to them, even if the attention is positive (e.g. praise), can be disturbing. This is because the person with ADHD may worry if the other party might spot mistakes that they themselves failed to notice.

Relationships may also deteriorate. The social difficulties in the table above often create distance with once-close friends. They may also lead to increased friction with loved ones as important tasks or issues are forgotten, or arguments recur as the person with ADHD forgets how they and their partner previously agreed to address areas of differences.

Is There Good News?

Yes, there is. As a neurodevelopmental disorder, there is no cure for ADHD but its management can lead to a fulfilling quality of life. ADHD is typically managed with medication, and Cognitive Behavioural Therapy (CBT), or both (Fullen, et al., 2020; Kooij et al., 2010; López-Pinar, et al., 2018; National Institute for Health and Care Excellence, 2018). Simply put, the medication reduces the intensity of some symptoms, while CBT teaches us skills to compensate for the symptoms of ADHD.

A desk serves as a useful and simplified rationale for the management of ADHD. I educate my patients with the following metaphor:

Attention is like a desk. All desks have finite space and can't fit everything in your life at once. Some desks are bigger and support more content for your viewing. Some desks are smaller: You can put perhaps 3 things on it, but inserting a fourth item will push one item off the side. It does not mean that the smaller desk is not strong or cannot function well. We simply need to learn how to do things while accounting for the size of the desk. Medication and CBT can help us to do that.

The emotional challenges of living with a history of ADHD can place more 'items' on the desk. Negative thoughts, emotions, and related (unhelpful) coping behaviours further clutter our attentional desk. Fortunately, CBT and other psychotherapies have a long history of reducing or resolving these issues. Once these are addressed, many patients report enjoying satisfactory relationships and careers.

This discussion would not be complete without a discussion of strengths. I find that adults with ADHD tend to be creative individuals because of one symptom: Internal distractibility. This occurs when we are distracted by internal thoughts, including ideas. It is manifested by tangential thinking, where related thoughts about one topic become increasingly irrelevant until they no longer serve the task at hand. For example, working on a task at the office leads to broader strategic ideas around the topic at hand. Many patients recognise that this can be helpful — provided that they actually finish what they were supposed to be doing and turn their creative meandering into action.

From a clinical perspective, such individuals would benefit the most if we can harness this strength rather than simply focusing on ‘minimising distractibility’ by dismissing potentially useful ideas. The secondary effect of such ideas is the improvement of self-esteem and a sense of intrinsic competence.

Another strength is perseverance and diligence. As a result of lifelong attempts to cope with the disorder, many adults with ADHD learn to put in extra time and effort to get by. Working hard is their necessary survival strategy. Once they have learnt how to manage their ADHD, working hard can help them thrive beyond mere survival.

What Should I Do?

An assessment for ADHD and differential diagnosis is a good place to start. ADHD symptoms can mirror those from bipolar disorder, anxiety disorders, burnout, trauma, or simply unhealthy expectations that we place on ourselves. None of these are a slight on your character. They simply happen to us. An assessment can determine ‘what’ is affecting us so that we can learn ‘how’ to address it.

There are three potential outcomes from an assessment and neither are scary. Firstly, it is found that you do have ADHD. Secondly, it is found that something else is causing a disturbance rather than ADHD. Thirdly, the assessment finds that ADHD and something else are causing difficulties. Either way, clarity, peace of mind, and a way forward is found. The outcome of a psychological assessment is therapeutic because it answers important questions that we need to accept ourselves and improve our lives.

People tend to seek psychological help once their careers or important relationships are endangered. Some come when their difficulties have placed them on the border of burnout, depression, or job loss. Seeking professional help earlier can forestall this trajectory. This article presents a snapshot of ADHD symptoms and their emotional impact. The article is general in nature. The best advice that you can get for your unique circumstances and challenges will come from clinical assistance. The time and money invested in assessment and management will pay for itself once you find peace with your past, and hope for the rest of your days.

Sleep problems and ADHD: A role for psychologists?

Dr Nicola Cann, Sleep Psychologist

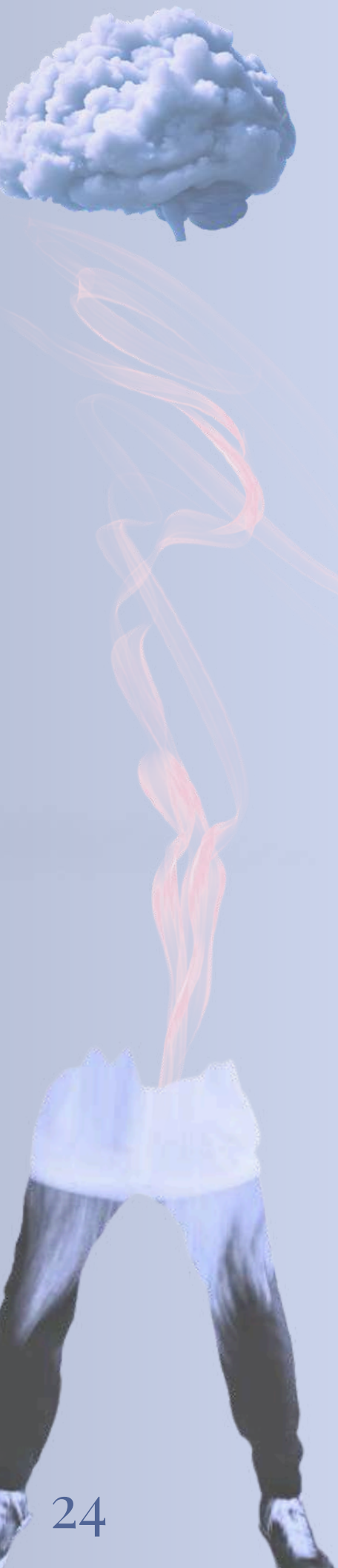
The relationship between ADHD and sleep is complex and dynamic, with sleep problems in infancy being predictive of a later ADHD diagnosis (Kidwell et al., 2017), and severity of ADHD characteristics being predictive of severity of sleep problems (Gregory et al., 2017). The relationship is likely bidirectional and improving sleep health in this group has been shown to have positive impacts on executive functioning, impulse control, and quality of life. However, because of the unique sleep needs of this group, generic sleep advice tends to be ineffective, and those struggling are often left feeling frustrated and hopeless.

Why is sleep so challenging for people with ADHD?

People with ADHD are significantly more likely to have problematic sleep than people without ADHD. They are more likely to struggle with both common sleep problems such as difficulty falling asleep and staying asleep, snoring, and insomnia, and with less common sleep disorders such as narcolepsy and restless leg syndrome.

Poor sleep exacerbates difficulties with inattention, hyperactivity, and impulsivity which characterise ADHD. Whilst the same is true for poor sleepers without ADHD, the impact of poor sleep is far greater for people with ADHD, who are already at an attentional disadvantage (Gruber et al., 2014).

There are a few key theories as to why this connection is so strong.



Executive control

Executive control issues can impact sleep because people who have difficulties with sustaining attention and managing impulsivity are likely to struggle with sticking to a bedtime routine, and winding down before sleep (Shanahan et al., 2021). This can lead to sleep disruption or deprivation, the consequences of which can be further attentional difficulties and impulsivity. These connections have led researchers to suggest that ADHD characteristics and poor sleep can create a reinforcing cycle.

Circadian differences

People with ADHD are far more likely than neurotypical people to be night owls and to have variable sleep timings throughout the week (Gruber et al., 2012). This has led some researchers to question whether circadian misalignment or disruption may be a neurobiological stressor that triggers the expression of, or increases the severity of ADHD characteristics i.e. circadian delay contributes to sleep loss and daytime sleepiness, which results in increased psychosocial stress and expression of ADHD characteristics (Lunsford-Avery & Kollins, 2018).

Sleep Disordered Breathing

People with sleep disordered breathing (e.g. apnea and snoring), display similar difficulties with impulsivity and (paradoxical) hyperactivity seen in ADHD (Mayes et al., 2009). In fact, people with a history of snoring or sleep apnea during childhood are twice as likely to receive a diagnosis of ADHD (Constantin, 2015). This calls into question whether sleep disordered breathing is sometimes misdiagnosed as ADHD. This theory was tested in a controversial study by Chervin et al. (2007), that found that adenotonsillectomy (removal of the adenoids and tonsils) reduced ADHD characteristics to the point where 50% of children in their sample initially meeting Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV criteria for ADHD no longer did.

Medications

Research shows that people with ADHD who are taking stimulants have greater difficulty falling asleep and have shorter sleep durations than those not taking medications (Hiscock et al., 2019). For some, stimulants can reduce impulsivity around bedtime and therefore help with sleep onset, but for many these medications interfere with the ability to fall and stay asleep. The picture is complicated because those taking medications are likely to have more severe ADHD characteristics and are therefore already at greater risk for disordered sleep (Ahlberg et al., 2023).

The Psychologist's Role

Unfortunately, despite being so well placed to address sleep issues for people with ADHD, most psychologists have little or no training in this important area. For instance, Zhou et al. (2021) found that, in the United States, 95% of the clinical psychologists they surveyed had received no training in sleep. This can lead to treatment recommendations that are misaligned with evidence-based practice and current research, and clients receiving generic sleep advice that does not necessarily apply to those with sleep disorders or chronically disrupted sleep.

Assessment and diagnosis

The research suggests that any assessment for ADHD should include assessment of sleep, but the guidelines available for psychologists fall short. Whilst the DSM and National Institute for Health and Clinical Excellence (NICE) both recommend differential diagnosis in the assessment of ADHD, neither specifies sleep as a possible co-occurring condition. In a recent review of international guidelines, Power et al. (2022) found that all recommend differential diagnosis, but few specifically mention sleep. Clients with ADHD are also unlikely to mention sleep issues to psychologists as they often see it as "part of the ADHD".

Intervention

Sleep hygiene refers to the behaviours and environmental factors that promote good sleep, such as sleeping in a cool, quiet room, having a calming wind down routine before sleep, and engaging in daytime activities that help to regulate the sleep/wake cycle. Whilst improved sleep hygiene is often not sufficient to improve sleep for people with ADHD (Hiscock et al., 2019), it can help to reduce bedtime delays and increase sleep duration—so it is a good starting point.

Behavioural interventions for sleep generally include providing information about typical sleep, and support to develop consistent bedtime routines and daytime habits conducive to good sleep. These approaches have consistently been demonstrated to improve sleep and reduce the severity of ADHD characteristics (Hiscock et al., 2019). Even brief (2-3 sessions) behavioural interventions delivered by psychologists who had received minimal training in sleep can improve sleep for the majority of children with ADHD.

The evidence base for **melatonin** use in ADHD is limited by samples that are small and heterogeneous, but it does also show some promise. Melatonin has been shown to reduce sleep onset latency and increase total sleep time (Cortese et al., 2013), but most people will revert back to disordered sleep on discontinuation. This suggests that underlying causes are not being addressed. In the general population, melatonin is more effective when used as a chronobiotic (i.e. to shift sleep timing), rather than as a somnolent (to make you feel sleepy), so it is likely that melatonin will prove most useful for people with ADHD when used in this capacity.

Additionally, simple strategies to **realign sleep/wake cycles** to more socially appropriate timings have had notable impacts on sleep timing and quality for people with ADHD. The role of daylight in circadian alignment is well established, and simply getting exposure to daylight shortly after waking can help to realign sleep and wake timings (Gruber et al., 2012). Another effective strategy is simply going to bed earlier. Going to bed 90 minutes earlier helped children with ADHD to increase their sleep duration by nearly an hour in one study (Cremone-Caira et al., 2020).

Conclusion

The evidence suggests that psychologists could potentially play a significant part in reducing sleep problems for clients with ADHD, and even using sleep recommendations to ameliorate difficulties associated with ADHD characteristics. If you work with clients with ADHD and want to incorporate this into your work, here are some practice points worth considering:

- Signpost clients to evidence-based information on sleep hygiene as a starting point.
- Use behavioural coaching to help clients adjust their daily routines.
- If undertaking diagnostic assessments, always ask about sleep.
- Consider suggesting they get advice from a prescriber about melatonin.
- Encourage them to get exposure to morning daylight.
- Know the limits of your own expertise and where to go for more specialist support.

My child has autism. what do I do?

By Ms Claire Hsieh

Autism, clinically termed Autism Spectrum Disorder (ASD), is a lifelong neuro-developmental condition characterised by difficulties in shared social interactions; and restricted and repetitive patterns of behaviour, interests, or activities. ASD affects day-to-day functioning (Autism Spectrum Disorder - ASD (Children) | National University Hospital, n.d.). Generally, symptoms appear in children from as young as two years (Autism Spectrum Disorder, n.d.) and can be diagnosed at any age; some adults spend their lives undiagnosed (O'Nions et al., 2023). As a professional working with children with special needs, with autism forming the majority of my caseload, I have seen a wide spectrum of children with the condition, and have worked directly with their families in terms of parenting tips, familial guidance and educational planning. Many parents spend a great deal of time worrying about their child's condition. I hope that in writing this article, I can address some of the concerns families with children with autism have, and provide some reassurance to them.

What are some signs and symptoms of a child with autism?

With a quick Google search, one is able to find answers to this question. While these websites are able to provide signs and symptoms from a clinical perspective, rarely do they inform loved ones about the condition from a relational point of view. I attempt to share some insights in this area. These observations are merely a sharing of my professional experience; by no means are they diagnostic. One key pattern of parents' relation with a child with autism is the lack of "connection". On numerous occasions, parents shared their frustration and anxiety over their inability to form a sense of intimacy with their children. This can come in the form of a sense of "emptiness" by the mother when breastfeeding her baby, or a toddler not responding to his or her name when being called by parents. Children with autism behave differently from neurotypical children, with less or inconsistent eye contact, and less or inconsistent joint attention, which is the act of sharing attention with someone else on the same thing intentionally, as examples (Jaswal et al., 2020). With the conventional ways of social communication missing in these children, familial relationships are therefore affected.

Another less common sign of a child with autism is a child with regressive developmental milestones. Termed as "regressive autism", it refers to children who had a period of typical development followed by a loss of or a noticeable decline in previously acquired skills (Backer, 2015). This occurrence is one of the most confounding phenomena of autism, with few research studies in this niche currently. For parents, regressive autism in a child can be especially traumatic for them as the sudden cessation of typical childhood development can be challenging for them to accept. In fact, research has shown that for parents with ASD children, their level of stress is higher than that of parents with Down Syndrome children or those with neurotypical children (firespringInt, 2020).

Is an autism diagnosis necessary?

This is a question parents have asked me time and time again. Parents worry that a label may limit their child's educational and employment opportunities later on in life, and they may face further societal stigma as a result. My answer to the question will be: If parents suspect anything amiss in their child's developmental milestones, they should seek a paediatrician or an early intervention specialist as soon as possible. According to the latest Singapore Clinical Practice Guidelines (Chong & Ho, 2024), the role of developmental surveillance is paramount, and the need to seek immediate paediatric specialist care is emphasised. This is with reason—research has shown that the earlier the intervention, the better the quality of life outcomes in an individual with autism.

Here are two reasons for which I believe an autism diagnosis can benefit a child. Firstly, the role of early intervention is crucial given the developing brain's "window of opportunity". Early intervention involves behavioural, cognitive, educational, and developmental approaches (Maksimović et al., 2023) to stimulate the child's development while relying on brain neuroplasticity. Based on research by Kolb and Gibb (2011), early treatment is crucial as the brain is conditioned by experience where neural connections amplify and become increasingly complex, facilitating learning to take place as the child interacts with the environment. Opportunities for learning based on neuroplasticity include the performance of daily routines, developing communication skills, acquiring knowledge, and learning through experiences. For children with ASD, the early start of intensive therapy is crucial for their development (Peters-Scheffer et al., 2011). Therefore, the earlier the diagnosis and the earlier the targeted intervention provided for the child, the better the long term outcomes for the child in future.

Secondly, Singapore's education system has come a long way to support children with autism. The first educational milestone for any child is preschool, with a good mix of private and public options to be found in Singapore. Programmes for children with mild developmental needs are offered in government-linked preschools (Education - Disability Support | Enabling Guide, n.d.), and ongoing efforts are present in training preschool teachers in the areas of special needs education (Tushara, 2023). At the primary and secondary education level, tailored pathways have been designed for children with varying conditions of autism. Currently, there are 22 special education schools in Singapore which offer specialised programmes for students with moderate-to-severe deficit in adaptive functioning, to help them attain skills necessary for further education and training, employment and independent living (Elangovan, 2023). Additionally, initiatives such as Schools Partnerships have been introduced to promote inclusivity between typically developing children and those with special needs.

Will a child with autism lead a normal life?

My answer depends on three considerations: how a parent defines “normal”, the severity of the ASD condition, and the quality of intervention received by the child. For some parents, “normal” can be seeing their child getting married in future, for others “normal” means their child gaining a certain level of self-awareness. As ASD encapsulates a wide spectrum of individuals with varying degrees of deficits, “normal” can pan out differently from one child to another. I am also aware that a high level of discourse has been taking place in academia and the autism community, where increased polarisation regarding views on autism severity and the level of “disability” is fraught with potential controversy. Despite that, the severity of the ASD condition is often influenced by environmental factors such as the amount and efficacy of intervention, socioeconomic level and availability of quality support services (Waizbard-Bartov et al., 2023). This leads to my third consideration, which is the quality of intervention parents and caregivers can provide for the child. Private therapy services can be expensive, which are huge barriers for low-income families. In Singapore, government subsidies such as the Assistive Technology Fund and government support programmes such as SG Enable are available to support low to middle income families (MSF | Article, n.d.). While government initiatives may not be sufficient due to limited resources, they can aid individuals with special needs in small ways.

Conclusion

While clinical resources are invaluable in identifying signs and symptoms of ASD, they sometimes overlook the relational aspects of children with ASD. These involve loved ones, parenting, working with other paediatric professionals, and educational planning. The work that many professionals in my field do extends beyond diagnosis and treatment; it involves building trust with families, offering emotional support to parents, and fostering a well-rounded understanding of the child's condition. By focusing on these relational elements, we can provide more comprehensive and compassionate intervention to these children and their families.

An Expanded Perspective of Autistic Social Skills

By Mr Sofie Teoh

In 2008, the United Nations General Assembly declared April 2nd World Autism Awareness Day. In 2011, the Autistic Self-Advocacy Network (ASAN) went a step further and declared April Autism Acceptance Month. Its purpose? To build awareness, respect, and inclusivity. The Month usually sees autism acceptance marked in a variety of ways, including social media posts, discussions and original creations such as comics and videos. This might be four months late (or eight months early) but nonetheless, to enter into the spirit of inclusivity, here is a very small contribution.

To start off, here's a question: When you hear the phrase 'autistic social skills', what is the first thing that comes to mind?

Neurodiversity & the Double Empathy Problem

The term 'neurodiversity' first appeared in 1998. Various definitions of it can be found in existing literature. Catala (2023) offers one such definition as 'the range of neurocognitive variation that is naturally present across the human population', with Gaddy and Crow (2023) describing this variation as 'natural and valuable' (p.1210). The term has since become (almost) synonymous with the neurodiversity movement, which positions itself as a social justice movement advocating for an end to discrimination and the recognition of neurodiversity's value and contributions to society (Leadbitter et al., 2021).

Perhaps in relation to a growing adoption of neurodiversity-affirming practices and viewpoints (influenced in part by the movement's advocacy work), there is increasing recognition of the role of mutual differences in two-way communication challenges (e.g., between autistic and allistic (non-autistic) communicators).

First coined in 2012, Milton's Double Empathy Problem has since gained wider acceptance as a means of conceptualising the social challenges autistic people may face. It refers to "a breakdown in mutual understanding...(that is) more likely to occur when people of very differing dispositions attempt to interact" (Milton et al., 2022, p.1901), possibly due to insufficient understanding about each other's communication styles.

Interestingly, some research has found that when such differences are reduced (e.g., between two similarly-disposed social actors), disjunctures are also reduced (Ekdahl, 2023). For instance, autistics may be less likely to be misunderstood as rude when they do not make or sustain eye contact while interacting with other autistics. This does not mean that allistic and autistic people should never interact or form relationships with each other but rather, as in most healthy relationships, that mutual compromise and understanding are needed and helpful.

Masking

This is, however, not always possible. To try and manage these differences, many autistics report the use of masking. At this point, one may wonder about the differences between autistic and non-autistic masking. After all, doesn't everybody mask?

Some research indicates that, compared to non-autistic individuals, autistic people tend to mask more and in certain ways that may be unique to them. For instance, they may engage in (frequent) scripting or behavioural imitation in order to compensate for social difficulties or differences and hide autistic characteristics. Perhaps due in part to a (strong) desire to present a non-autistic persona, some may go as far as to adopt unhealthy or unsustainable strategies to fit in (e.g., excessive people-pleasing and accommodation).

Autistic masking may also include components such as body language, facial expressions, eye contact, prosody, conversational flow, and attempts to hide painful sensory experiences (e.g., something being too overwhelming to the point of physical pain or emotional distress).

Additionally, masking has been posited to arise partly out of a sense of perceived burdensomeness and has been associated with a sense of social disconnection, as well as various physical and mental health concerns. Clearly, masking exacts a cost on the masker.

The next question to ask then becomes, how do we navigate mutual social differences and bring about effective allistic-autistic communication without (as much) masking? The answer might lie within the definition of neurodiversity. If neurodiversity is the range of neurocognitive variation across the human population, then surely it must also encompass the corresponding range of socio-communicative variation. One way forward then is—as suggested by the neurodiversity movement—a growing awareness, respect, and inclusivity for autistic ways of communication; a meeting-in-the-middle compromise.

Neurodivergent Love Languages/ Locutions

Most of us have by now heard of the five love languages created and popularised by Gary Chapman. Have you heard, however, of the five neurodivergent love languages/locutions? Namely: info-dumping, parallel play, support-swapping, penguin pebbling, and deep pressure. (To find out more about neurodivergent love languages/locutions, visit the Stimpunks Foundation's (a United States-based non-profit) website.

Info-dumping might sound like a strange way of showing one's feelings of care and love but, when done appropriately (e.g., at appropriate times), it can be a way of bonding with a loved one through talking about or doing something of significant interest. It can also be a sign that the autistic person feels safe with the other person, enough to want to share something seen as personal and important. Similarly, parallel play allows the autistic person to share physical space which may provide feelings of connection without a sense of pressure to communicate or mask.

Everyone has areas of strengths and challenges. Ideally, support-swapping allows swappers to capitalise on their strengths while supporting each other's challenges. For instance, some people may dislike driving but are okay with navigating directions or planning itineraries.

Others might enjoy grocery-shopping and cooking, but struggle with cleaning up. Body-doubling can also be helpful at times. For example, it might seem overwhelming at first to go on holiday, or to the supermarket or coffee shop alone, but the outing may become more manageable somehow with a friend or loved one along for company.

To show appreciation for that friend/loved one afterwards? How about a bit of penguin pebbling (e.g., collecting and gifting small presents to or sharing a particularly-enjoyed meme with a loved one), even if it's just to say "I thought of you today and hope you might like this". That gift could be paired, where appropriate for both parties, with a deep-pressure hug or hand-squeeze, if you like.

What do you think?

Assistive Devices and Technology

Ms Elsie Hui

Assistive devices and technology refer to a broad range of tools, equipment, and software designed to aid individuals in performing functions that might otherwise be difficult or impossible due to various disabilities or impairments. Such equipment is essential for supporting neurodivergent individuals (i.e., persons with autism spectrum disorder, attention-deficit/hyperactivity disorder, dyslexia or other developmental delays, who have unique strengths and face a variety of challenges) by providing tools and resources to address their daily challenges and improve their quality of life. It encompasses a wide range of devices, from low-tech tools like adapted utensils and pencil grips to high-tech solutions such as communication devices and environmental control systems (Copley & Ziviani, 2004).

Assistive devices provide tailored support that addresses neurodivergent individuals' specific needs, thus facilitating smoother and more effective engagement in daily activities. These technologies can transform the academic engagement, social participation, and psychological well-being of neurodivergent individuals (McNicholl et al., 2019). By leveraging assistive devices and technology, neurodivergent individuals will be able to access opportunities, participate in activities, and navigate daily challenges more effectively.

The Benefits of Different Types of Assistive Devices and Technology

Examples of assistive devices and technology beneficial for neurodivergent individuals include:

1. **Communication Aids** such as speech-generating devices (SGDs) and augmentative and alternative communication (AAC) applications. They are essential for individuals who have difficulty with verbal communication as these tools help them express their thoughts, needs, and emotions more effectively. They provide portable and flexible communication solutions that can be tailored to the user's specific requirements (Biswas & Samanta, 2008). In addition, some of these devices utilise symbol-based communication systems (e.g., pictures, symbols, and icons to represent words and concepts), thus facilitating communication for individuals who have difficulty with traditional text-based language. These options are particularly effective for individuals with autism or intellectual disabilities, as they can convey meaning through visual representations that are easier to understand and use in communication.

2. **Learning and Cognitive Support Tools** such as text-to-speech/speech-to-text software and voice recognition software support learning and communication for individuals with language-related difficulties. These tools aid in the learning process by helping individuals grasp and retain information more effectively while allowing neurodivergent individuals to express themselves using various modes (Khalid et al., 2023). Organisational tools (e.g., digital planners, timers) are also beneficial for those with attention-deficit/hyperactivity disorder (ADHD) or executive functioning challenges as they provide structure and reminders to stay on track.

3. **Sensory and Motor Support Devices** such as sensory integration tools (e.g., weighted blankets, fidget tools, and noise-canceling headphones) help individuals with sensory processing difficulties to manage sensory input. These tools can have a calming effect, which helps to improve focus and reduce sensory overload for neurodivergent individuals (Pfeiffer et al., 2019). Adaptive writing tools and other fine motor skill devices (e.g., adapted scissors, grip aids) can also support individuals in performing tasks that require precise hand movements, thus promoting greater independence in daily tasks for those with limited physical abilities.

4. **Mobility and Accessibility Aids** (e.g., wheelchairs, motorised scooters) help neurodivergent individuals with mobility impairments such as persons with autism spectrum disorder who face delays in gross motor skills, to move more freely and increase their accessibility to their environment (Bastos-Filho, Kumar & Arjunan, 2014). Environmental control units (ECUs) such as smart home technologies and home automation systems also enable individuals with mobility limitations to easily control their environment and access appliances, which promotes independence in daily activities (Chan et al., 2008).

Tips for Selection and Implementation of Assistive Devices

Customisation is key. When selecting and implementing assistive devices, it's crucial to choose tools that align with the specific needs and preferences of the individual. Start by conducting a thorough assessment with the help of professionals (e.g., psychologists, assistive technology specialists, occupational therapists, or speech-language pathologists) to identify the most suitable devices. Always involve the individual in the decision-making process to ensure that the selected devices align with their preferences, comfort level, and functional requirements (Mano et al., 2021).

Training is essential for both the user and their caregivers to maximize the effectiveness of the device. Offer training sessions and ongoing support to help the individual learn how to use the device effectively and troubleshoot any issues that may arise. Regular follow-ups and re-evaluations are also helpful in making necessary adjustments and updates, ensuring the device continues to meet the user's evolving needs. Whenever possible, provide the individual with a trial period to test the device and assess its compatibility and effectiveness in real-life situations.

Conclusion

In summary, assistive devices and technology can provide practical solutions to overcome barriers, promote autonomy, and improve the overall well-being of neurodivergent individuals in the following ways:

- Promoting Accessibility: Assistive devices such as mobility aids, hearing aids, and adaptive tools enable individuals to access and engage in various environments and activities that may usually be challenging.
- Enhancing Communication and Fostering Social Inclusion: Communication devices and software support individuals with speech or language difficulties in expressing themselves, thus fostering social interactions and facilitating meaningful connections.
- Enriching Educational and Learning Experiences: Assistive technology in educational settings, such as text-to-speech software, graphic organizers, and adaptive learning tools, helps students with diverse learning needs access educational materials, participate in lessons, and demonstrate their knowledge effectively.
- Improving Participation in Daily Living Tasks: Smart home technologies, environmental controls, and personal care devices assist individuals in managing daily tasks, maintaining routines, and promoting independence in activities of daily living.

By bridging the gap between individual abilities and environmental demands, assistive devices and technology can empower neurodivergent individuals to reach their fullest potential, thereby promoting a more inclusive and equitable society.

Doubly Different — Twice Exceptional

Mr Zeb Lim

The double-labeled category of gifted individuals (Betts & Neihart, 1988) are gifted children who are physically or emotionally challenged or have learning disabilities. A more recent term now commonly applied to such individuals is “twice exceptional,” defined as being exceptional in both ability and disability (2e). The twice-exceptional may face uneven support and intervention from educators and caregivers due to a lack of understanding of the unique needs that these individuals would experience. Twice-exceptional refers to those who are both gifted in some way (e.g., excel at math or music) and have a learning disability or developmental disorder such as ADHD or Autism Spectrum Disorder. Additionally, helping professionals may wrongly label a gifted individual as having ADHD or Asperger's due to misidentification of the unique characteristics and behaviours of the gifted individual (Webb et al., 2019).

Following the Beneficence principle of the Singapore Psychological Society Code of Ethics (Singapore Psychological Society, 2019), psychologists should strive to understand the unique needs of the twice-exceptional gifted. Given that up to 40% of neurodiverse employees are affected at work on “most days” (Elton, 2023), psychologists have a public service role to help educate the public and employers about the challenges that neurodiverse individuals often face and the types of support they may need. Locally, in Singapore, there is also reported a rise in the number of neurodivergence individuals (Ng, 2023); while there is no explicit mention of twice-exceptional individuals, this also highlights the lack of understanding of this particular type of gifted individuals.

Ways to Better Support the Twice-Exceptional (2e) and Neurodivergent

Parents with twice-exceptional children need to know they are not alone and that there are others who understand and have success stories to cheer on (Morin, 2023). The documentary *2e: Twice Exceptional* (Ropelewsky, 2015) provides important insights into how educators teaching these children need to be flexible in their teaching methods. Playing to their strengths instead of focusing on their weaknesses would help empower and allow these children to develop their skills in due time.

Dr Timothy Singham, a clinical psychologist, advises that support for individuals with neurodivergence could range from listening to them, to having policies that would provide flexible provision of specific accommodations to having a company culture that embraces inclusivity and respect for everyone (as cited in Ng, 2023). Coaching and mentoring in the workplace would also benefit the neurodivergent individual (Elton, 2023). An inclusive company culture that provides coaching and mentoring and promotes respect benefits not only the twice-exceptional but also those supporting and working with them, a win-win situation for all.

In conclusion, having the right understanding of how giftedness may manifest in individuals is an important part of differentiating those who are gifted and those dealing with learning disabilities and/or developmental disorders like ADHD and Autism Spectrum Disorder. It is also important to realize that individuals can be doubly diagnosed. Getting suitable consultation from those trained and knowledgeable about gifted issues would allow appropriate support to be extended to these individuals. Shifts in individual behaviours, such as better listening skills, to systemic changes in company culture not only benefit the neurodiverse gifted but our society as a whole.

Revolutionising Mental Health Detection for Neurodivergent Individuals with AI Technology

Mr. Patrick Bensen, Director at Brainmark
www.leaderoftomorrow.org/brainmark

In the dynamic and ever-evolving field of mental health, innovative technologies are paving the way for more accurate, efficient, and personalised care. One such groundbreaking advancement is a revolutionary service for mental health professionals in Singapore that promises to transform the landscape of mental health detection and prediction. By leveraging the power of artificial intelligence (AI), it is now possible to detect, measure, and predict nine critical biomarkers directly from the brain within just 15 minutes. This rapid and comprehensive assessment tool is poised to become an invaluable asset for mental health professionals, especially when addressing the unique needs of neurodivergent individuals.

The Science Behind This Progress

Imagine a service that can harness sophisticated AI algorithms to analyze brain activity and identify nine key biomarkers associated with various mental health conditions. These biomarkers are essential indicators of brain function and can provide critical insights into an individual's mental health status. By evaluating these biomarkers, we can offer precise measurements and predictions related to conditions such as anxiety, depression, ADHD, and autism spectrum disorders (ASD), among others.

The technology involves non-invasive brain imaging techniques combined with AI-driven data analysis. This allows for a quick and painless procedure that yields comprehensive results in a fraction of the time traditional methods require. For mental health professionals, this means delivering faster, more accurate diagnoses and tailoring treatment plans more effectively.

Addressing Neurodiversity

Neurodiversity is the concept that neurological differences, such as autism, ADHD, dyslexia, and other conditions, are natural variations of the human brain. Embracing neurodiversity means recognizing and valuing these differences, rather than viewing them solely as deficits or disorders. For neurodivergent individuals, early and accurate diagnosis is crucial for accessing appropriate support and interventions that can enhance their quality of life.

We now need new medical tools to offer an effective solution for neurodivergent individuals. These new tools will allow us to make:

1. Rapid Detection and Diagnosis: Traditional diagnostic processes for neurodivergent conditions often involve lengthy evaluations and subjective assessments, which can delay intervention and support. We now have the technology and the ability to deliver results in just 15 minutes to allow us quicker identification of neurodivergent traits, enabling earlier and more effective intervention.

2. Objective and Precise Measurement: Detecting the activation of biomarkers ensures that diagnoses are based on objective data rather than solely on behavioural assessments. This precision reduces the risk of misdiagnosis and ensures that neurodivergent individuals receive appropriate and targeted support.

3. Personalized Treatment Plans: By providing detailed insights into the specific biomarkers associated with an individual's condition, we can enable mental health professionals to design personalized treatment plans. This tailored approach can address the unique needs of neurodivergent individuals, enhancing the effectiveness of therapeutic interventions.

4. Monitoring and Predicting Outcomes: With predictive capabilities, Mental Health providers can offer ongoing monitoring of an individual's mental health status. This is particularly beneficial for neurodivergent individuals, as it enables mental health professionals to track progress, adjust treatment plans as needed, and predict potential challenges before they arise.

5. In addition to advanced diagnostic capabilities, the service also offers neurofeedback therapy to address and correct neurodivergence in a quick, simple, and non-invasive manner. With an affordable and portable system that can be used anywhere with a good Wi-Fi connection, our neurofeedback system helps individuals train their brains more efficiently by providing real-time feedback on brain activity on 9 biomarkers. This therapy is particularly beneficial for neurodivergent individuals, as it can enhance cognitive function, improve emotional regulation, and support overall mental well-being without the need for medication or invasive procedures.

Transforming Mental Health Care in Singapore

Singapore remains at the forefront of technology, which means we need to always keep up with discoveries that offer the integration of AI technology into mental health care. For mental health professionals, this new technology offers a cutting-edge tool that enhances their ability to diagnose, treat, and support their clients effectively.

Benefits for Mental Health Professionals

1. Enhanced Diagnostic Accuracy: AI-driven analysis ensures high diagnostic accuracy, reducing the likelihood of misdiagnosis and enabling mental health professionals to provide more reliable care.

2. Efficiency and Time-Saving: The rapid assessment process allows professionals to see more clients and deliver timely interventions, improving overall efficiency in clinical practice.

3. Data-Driven Insights: The detailed data provided can inform treatment decisions, leading to better outcomes for clients and more informed practice for professionals.

4. Continual Learning and Improvement: As more data is collected, AI algorithms continue to learn and improve, offering increasingly accurate predictions and insights over time.

A Vision for the Future

Introducing new processes into our practices is not just a technological advancement; it represents a paradigm shift in how mental health care is delivered. By embracing AI technology, mental health professionals in Singapore can move towards a more proactive, personalized, and efficient model of care.

For neurodivergent individuals, this means quicker access to the support they need, a deeper understanding of their unique neurological makeup, and a more inclusive approach to mental health care.

Conclusion

By leveraging the power of AI, and providing rapid, accurate, and personalized insights into brain function, we can pave the way for more effective interventions and a brighter future for all.

As we embrace this innovative technology, we move closer to a world where mental health care is not only reactive but also proactive, personalized, and inclusive, truly embodying the spirit of neurodiversity.

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