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## Perceptions of ADHD-Related Behaviours in Trinidad & Tobago and Canada: A Cross-Cultural Study

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A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Psychology

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## **Abstract**

Undiagnosed ADHD is prevalent in the region where Trinidad & Tobago is situated. Children with ADHD are vulnerable to numerous negative outcomes. Parents and teachers are best positioned to identify ADHD-related behaviours in children but can only do so if they associate those behaviours with ADHD. This study investigates their perception of ADHD-related behaviours in children. It examines the hypothesis that these behaviours are more likely to be seen as issues of indiscipline and low motivation rather than a medical or psychological condition. Utilizing multilevel modelling, perceptions of ADHD-related behaviours in Trinidad & Tobago were compared to those in Canada, a country with a more medicalized view of ADHD. Findings indicate that Trinidad & Tobago had higher rates of perceiving ADHD as indiscipline or lack of motivation, which diminished when knowledge was included as a covariate. Targeted psychoeducation could significantly improve the accurate identification of ADHD in Trinidad & Tobago.

### **Keywords:**

ADHD, Trinidad & Tobago, perception of child mental health, medicalization of behaviour, attitudes toward mental health, vignettes in mental health research, multilevel modelling.

## Summary for Lay Audience

Attention-Deficit/Hyperactivity Disorder (ADHD) is a common mental health condition affecting children worldwide, characterized by symptoms of inattention, hyperactivity, and impulsivity. In the region where Trinidad & Tobago is located, there is a high rate of undiagnosed and undertreated ADHD, which can lead to significant challenges for children with the condition. Parents and teachers are usually the first to observe ADHD-related behaviours in children. This thesis aimed to understand how parents and teachers in Trinidad & Tobago perceive behaviors associated with ADHD. The study focused on whether ADHD behaviors in Trinidad & Tobago are seen as problems of indiscipline and low motivation rather than medical or psychological issues requiring treatment. To explore this, a statistical approach called multilevel modelling was used, comparing perceptions in Trinidad & Tobago to those in Canada, where ADHD is more widely recognized as a medical condition.

The findings were quite revealing. In Trinidad & Tobago, parents and teachers were more likely to view ADHD-related behaviors as signs of indiscipline or a lack of motivation. However, this perception changed when the individuals' knowledge about ADHD was taken into account. When parents and teachers had more information about ADHD, they were less likely to see these behaviors as mere indiscipline or low motivation.

This research highlights a crucial insight: increasing awareness and understanding of ADHD among parents and teachers in Trinidad & Tobago can significantly improve how these behaviors are perceived and managed. By providing targeted education about ADHD, policymakers can help ensure that children exhibiting these behaviors receive the

appropriate support and treatment they need. This, in turn, can help them succeed academically and socially, reducing the risk of long-term negative outcomes.

In summary, this study underscores the importance of psychoeducation for parents and teachers in Trinidad & Tobago. By enhancing their knowledge of ADHD, related behaviors will be accurately recognized as symptoms of a medical condition that requires attention and care. This change can lead to more timely and effective services for children with ADHD, helping them lead healthier, more productive lives.

## **Acknowledgements**

To my mentor, Dr. J. Bruce Morton, who recognized my passion and capacity for mental health research, especially after I spent so many years away from academia. It is difficult to fully capture my appreciation for your stellar, ongoing guidance and support in my development as a scientist.

I would like to express my deepest gratitude to my wife, Neiliane Auguste, who undertook this journey with me. You made sure that I always felt supported and encouraged. Any successes I have are equally yours.

To my lab mates at the Cognitive Development and Neuroimaging Lab, you have made me feel welcome, at home, and inspired by your brilliance. A special thanks to my lab mate Samantha Goldsmith. Your support throughout this project was invaluable.

To Dr. Gerard Hutchinson at the University of the West Indies, who has supported me from our first conversation when you said I should aim to be the regional expert in my chosen field.

I am also deeply thankful to my parents, who encouraged my vision even when they weren't clear on all the details. Your unwavering support and belief in my potential have been a constant source of strength and motivation.

Lastly, to the parents and teachers who participated in this study, none of this could have happened without you. Thank you for your time, effort, and invaluable insights.

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## List of Abbreviations

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Abbreviation	Meaning
<i>M</i>	Mean
<i>N</i>	Number of participants
<i>P</i>	Probability
<i>SD</i>	Standard Deviation
<i>t</i>	T test
ADHD	Attention-Deficit/Hyperactivity Disorder
DSM 5 TR	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision
CADDAC	Centre for Awareness of ADHD in Canada
RHA	Regional Health Authority
SSSD	Student Support Services Division
UWI	University of the West Indies
USC	University of the Southern Caribbean
CNC	Caribbean Nazarene College
BRIEF	Behavior Rating Inventory of Executive Function
WISC	Wechsler Intelligence Scale for Children

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## Chapter 1

### 1 Introduction to ADHD in children

Attention-Deficit/Hyperactivity Disorder (ADHD) is “a persistent pattern of inattention and/or hyperactivity–impulsivity that interferes with functioning or development” (American Psychiatric Association, 2022), with an estimated global prevalence among children of 5% (Polanczyk et al., 2007). There are three clinical presentations of the disorder that are distinguished in terms of the symptoms that are most prominently exhibited and include predominantly hyperactive-impulsive, predominantly inattentive, and combined, characterized by which group of symptoms are most prominently exhibited. These clinical presentations are demonstrably valid and relatively homogeneous across cultures (Bauermeister et al., 2010). In the Diagnostic and Statistical Manual of Mental Disorders (DSM 5-TR), ADHD is classified as a neurodevelopmental disorder. This is the general classification for mental disorders whose onset is during childhood and whose symptoms are understood as the manifestation of underlying “deficits or differences in brain processing” (American Psychiatric Association, 2022). Contemporary scientific thought indicates that such atypical processing is best explained by the multiple deficit model (Willcutt et al., 2010). This model proposes that there is no straight line from a specific genetic abnormality to behavioural symptoms but that complex disorders like ADHD are the end products of environmental risk factors interacting with multiple genes. These interactions are in turn linked to differences in processing highlighted in the DSM (Faraone et al., 2021).

## **1.1 Risks associated with untreated ADHD in children**

If not effectively treated, risks associated with ADHD are significantly increased. These risks include psychiatric problems, injury, delinquency and criminality, and educational/ occupational underachievement. Also, while ADHD primarily affects the individual, risks associated with untreated ADHD extend through family systems, communities, and society at large.

Untreated ADHD has repeatedly been shown to correlate with an increased likelihood of psychiatric comorbidities in children and adults (Yoshimasu et al., 2012; French, 2023; Okumura et al., 2021). These comorbidities include other neurodevelopmental disorders, psychoses, adjustment disorder, substance-use disorders, anxiety disorders and mood disorders. The increased likelihood of psychiatric comorbidity is estimated to range between five-fold and 10-fold if the individual has ADHD (Yoshimasu et al., 2012); low socioeconomic status may lead to a further four-fold increase the likelihood of psychiatric comorbidity (Larson et al., 2011). The heightened susceptibility to comorbid psychiatric diagnoses may come from a shared pathogenesis (Akmatov et al., 2019), or from the ecology of ADHD. Experiencing life with the symptoms of ADHD can itself intensify vulnerability to a host of conditions (French et al., 2023). For instance, constantly not meeting expectations, not realizing potential, and not being as accomplished as peers, can contribute to dysphoria and anxiety (Okumura et al., 2021). Chronic inattention and hyperactivity can significantly impair the formation and maintenance of interpersonal relationships (Wood et al, 2021), resulting in social isolation, which precipitates mood and personality disorders. Self-medicating,

which predisposes substance-use disorders, is also common among people with untreated ADHD (Gonzalez et al., 2017; Kaye et al., 2013).

Chronic and excessive hyperactivity, impulsivity and/or inattention are risk factors for physical ailments, as rates of (non-suicidal) self-injury are significantly higher among people with ADHD than in the general population (Kang et al., 2013; Adeyemo et al., 2014; Brunkhorst-Kanaan et al., 2021), as are driving-related accidents (Kupper et al., 2012). People with ADHD are therefore significantly more likely to be hospitalized for physical injury, including emergency-room visits, and in-patient medical care (Faraone et al., 2021; French et al., 2023; Naya et al., 2021).

In addition to psychiatric comorbidities, untreated ADHD is also associated with higher risk of delinquency and criminality. To be sure, ADHD is not a cause of criminality per se, but it can be regarded as potentially criminogenic (Pratt et al., 2002) insofar as it increases the risk of future criminality while being neither a necessary nor sufficient cause of criminality. In studies exploring adolescent interactions with the criminal justice system, ADHD was related to as much as a three-fold increase in arrest rates, a five-fold increase in general conviction rates, a 12-fold increase in violent-crime conviction rates, and a 15-fold increase in incarceration rates (Dalsgaard et al., 2013; Savolainen et al., 2010).

Untreated ADHD in childhood also appears to increase the risk of future criminality. For example, persistent antisocial behaviour is more likely to occur when children with neurodevelopmental conditions like ADHD live in conditions or environments that can be considered criminogenic (Moffit, 1993). It is therefore possible that untreated childhood ADHD can set a course for adult criminality even when ADHD

itself does not persist into adulthood. The impact of childhood ADHD on a life-trajectory for criminality is further compounded by its apparent tendency to lower the age of onset for such behaviour. In the United Kingdom for instance, the mean age of offenders with ADHD was shown to be three years lower than in the non-ADHD incarcerated population (Young et al., 2018), with higher rates of recidivism (Young et al., 2011). Untreated ADHD is also associated with lower academic and professional achievement. In children, this is manifested mainly in the academic realm, whereas in adults, it is manifested mainly in the occupational realm. Children with ADHD generally experience lower rates of academic achievement than controls (Bernfort et al., 2007), and up to 80% of children with ADHD experience academic challenges, one-third of whom meet diagnostic thresholds for learning disabilities in reading, math, or writing (Barkley, 2006; DuPaul & Volpe, 2009). It is therefore no surprise that ADHD increases risk of grade-repetition, special education placement and early drop out (Daley & Birchwood, 2010; Currie & Stabile, 2006; Currie et al., 2010; Fletcher and Wolfe, 2008). Higher rates of school absenteeism appear relatively commonplace among children with ADHD, as this phenomenon has been observed in numerous countries (Frazier et al., 2007). ADHD also has an impact on behavioural outcomes within the academic experience that go beyond learning. Children with ADHD tend to violate classroom norms, disrupt classmates, and fail to comply with authority figures at elevated rates (Atkins et al., 1985; Atkins et al., 1989). These behaviours correlate with higher rates of disciplinary referrals (Robb et al., 2011), suspensions and expulsions (Breslau et al., 2011; Fried et al., 2013; Biederman et al., 2004).

Given that individuals with ADHD typically have worse educational outcomes than their peers (lower grades, lower completion rates, less tertiary education), their employment prospects are also lower when entering the job market (Manuzza et al., 1993; Manuzza et al., 1997). Children with higher levels of attentional problems are three times more likely to experience subsequent socioeconomic disadvantage, including lower grades of employment, higher levels of unemployment, and lower rates of labour market participation (Galera et al., 2012). While the latter may seem redundant, it represents a key distinction from unemployment; unemployment rates are only derived from populations of employment seekers, ignoring the cohort of unemployed who are not actively looking for employment. This means that there is a disproportionate number of young adults with ADHD who have given up on looking for a job.

## **1.2 General approach to ADHD assessment and treatment in the Global North**

Even though ADHD is viewed as a fundamentally neurological phenomenon, neuroimaging or testing of any kind is not part of the diagnostic process, because there are no functional or structural profiles that are consistently indicative of ‘the ADHD brain’ (Hoogman et al., 2017; Hoogman et al., 2019; Faraone et al., 2021). As such, the diagnostic process for ADHD involves assessments of surface-level behaviours and intermediate cognitive processing. These assessments are performed by various healthcare providers as per guidelines of the local jurisdiction.

In the Global North, the treatment of ADHD has been moving toward the American model (Bergey et al., 2018). For ages greater than 6 years, the Centers for Disease Control and Prevention, and the American Academy of Pediatrics indicate medication (usually stimulants) with adjunct psychosocial interventions as “Grade A”

treatment (Wolraich et al, 2019). Stimulants are thought to mitigate atypical cognitive processing by increasing activation of brain regions associated with cognitive control (Rubia et al., 2014), while psychosocial interventions aim to directly mitigate behavioural issues. This approach assumes that the signs and symptoms of ADHD are downstream from psychological and biological dysfunction and is known as *medicalization*.

Numerous studies have shown that a medicalized approach to ADHD can be quite effective at reducing its symptoms and their associated risks (Rubia et al., 2014; Cortese et al., 2018; Jangmo et al., 2019). When effectively treated, the risks typically associated with ADHD are also mitigated and quality of life trajectory is significantly improved (Chang et al, 2012; French et al, 2023; Lichtenstein et al, 2012). Such improvements are especially pronounced in children (Tsuji et al., 2020). Consequently, the earlier a diagnosis is made, and treatment initiated, the more likely a positive trajectory (Arnold et al, 2020).

### **1.2.1 Ethnic disparities in uptake of medicalized treatments in the Global North**

In countries where Grade A treatments are readily available, there are ethnic populations that have relatively low utilization rates for psychopharmacological treatments. This includes treatments for psychiatric conditions in general (Schnittker, 2013), psychiatric conditions in children (Schnittker, 2003) and most especially, ADHD in children. African American, Hispanic, and other ethnic-minority children with ADHD were 69% less likely to be diagnosed than their European American counterparts (Morgan et al., 2013). Among those who were diagnosed, the odds of being treated with medication were as much as 65% lower than their European American counterparts.

It is logical to assume that ethnic disparities in utilization rates are confounds for socioeconomic disparities, because in the Global North, being from a non-European ethnicity often correlates with lower socioeconomic status and access to many services (Morgan et al., 2013). However, even after controlling for socioeconomic status and other potential confounds, ethnic minorities still access psychiatric services (medication in particular) at consistently lower rates than their counterparts of European descent. This suggests that some ethnic groups may not endorse the medicalized view of ADHD and its associated treatments. In the case of ADHD, to accept a Grade A treatment as necessary, one must assume that a child's behaviour is disordered, that the disordered behaviour is an outward manifestation of cognitive-processing deficits, that these deficits are long-term consequences of neurodevelopmental dysfunction, and that pharmacological and adjunct treatments can/will mitigate the long-term deficits. Adopting these assumptions contributes to the perception that excessively hyperactive, impulsive and/or inattentive child behaviour is fundamentally a medical problem. It is possible that ethnic minority groups may not perceive such behaviours as problematic, and even if they do, they may not perceive them as medical problems.

### **1.3 The role of teachers and parents in the help-seeking process**

The help-seeking process for mental health conditions proceeds in three stages, namely, identifying that a problem exists, making the general decision that help is needed, and choosing/using a particular service or line of treatment (Bazier et al., 2004). In the lives of children with ADHD, teachers and parents arguably play the most important roles at each step.

### 1.3.1 Teachers in the help-seeking process

Teachers are often referred to as “disorder spotters” (Brault et al., 2022) and “agents of medicalization” (Conrad, 2006), as well as help-seeking guides for parents, who tend to follow teachers’ advice even when inaccurate (Di Battista & Shepherd, 1993). The typical elementary school classroom dynamic can highlight why these labels may apply. Children are required to sit still and maintain focus on the teacher’s directives/instruction for extended periods of time, while inhibiting any impulsivities—demands antithetical to all three clinical presentations of ADHD. By routinely interacting with relatively large groups of children of similar ages, teachers have the benefit of observing each child in the context of a reference or control group (Soroa et al., 2014). Teachers therefore function as de facto diagnosticians, as they routinely parse normative and excessive child behaviours. This is why ADHD is often detected initially by teachers during the elementary school years (Barkley, 2006; Phillips, 2006; Sax, 2003).

Having knowledge of ADHD is prerequisite for accurate detection of its related behavioural presentations. For teachers to flag ADHD-related behaviours as such, and make the necessary referrals for assessment and care, they first need to understand what the disorder is and is not. This includes having a sense of urgency in making said referrals. In a review of global trends, Youssef et al. (2015) found that teachers’ knowledge of ADHD was typically quite low, with only a few instances of what was considered reasonable or adequate. Even among experienced teachers, large proportions believe that they have either not taught children with ADHD or have taught exceedingly small numbers of children with ADHD (Soroa et al., 2012; Soroa et al., 2013; Jones & Chronis-Tuscano, 2008; Jarque et al., 2007). Both cases are unlikely, as global prevalence

rates suggest that in a class of 30 students, one or two will have ADHD. The more likely position is that these teachers did not know that some of their students had ADHD; related behaviours were either considered normative or attributed to a different cause. In both instances, accessing effective treatment becomes less likely. The available data on teacher knowledge of ADHD is therefore cause for concern.

### **1.3.2 Parents in the help-seeking process**

Parents may not have as many sobriquets as teachers, but they clearly play a pivotal role in the help-seeking process for children with ADHD— teachers may guide, but parents must approve. Much like teachers, parents are lay diagnosticians for their children. Parents have more challenges in this regard as they do not typically interact with large numbers of children as teachers do; the sample from which they differentiate normal from abnormal development is much smaller, with much less variability. For the child with ADHD, it is nevertheless critical that their parent be able to make an accurate lay-diagnosis (e.g., “This seems to be an excessive level of inattention, hyperactivity and/or impulsivity”) so that effective help-seeking can ensue.

Parents, especially mothers, have increasingly undertaken the additional role of mental health advocate for children with ADHD. In fact, parents have been pivotal in launching and maintaining ADHD advocacy and support organizations across the globe (Bergey et al., 2018), that promote sensitization and evidence-based treatments. This typically came about as a reaction to the wider public (including teachers) attributing their children’s ADHD-related behaviours to a lack of discipline, which was seen as an indictment on their parenting (Bergey et al., 2018). Many ADHD advocacy organizations therefore promoted a more medicalized conceptualization of ADHD-related behaviours in

children. Medicalization effectively increased among parents (versus non-medicalization e.g., indiscipline), who then increased medicalization in the wider society. This pattern has occurred, to varying degrees, in countries such as the United Kingdom, Japan, Portugal, Ireland, Brazil, Italy, France and Taiwan (Bergey et al., 2018).

Knowledge of ADHD and attitudes towards ADHD can significantly impact the choices that teachers and parents make at each juncture of the help-seeking process (Bazier et al., 2023; Ghanizadeh et al., 2006).

#### **1.4 Medicalization as a tool for cross-cultural comparisons**

Medicalization refers to the use of medical terminology outside of medical settings (Davis, 2010), especially when relating to normalcy and pathology (Murugía et al., 2016). However, the term is not straightforward to define and operationalize. It has evolved considerably since its coinage, at times holding multiple meanings. Murugía et al. (2016) refers to this as a polysemy that stems from the two distinct uses of the word. In addition to the initial definition, medicalization has also been used to describe the encroachment of the medical profession into areas that it was not associated with, leading to its dominance of the area (Davis, 2010). Connotations of the word further complicates arriving at a clear definition. Davis (2006) reviewed the medicalization literature and found that in many instances, it was assumed that the process of encroachment/dominance was an illegitimate one. However, contemporary social science appears to have converged on a particular definition:

Medicalization consists of defining a problem in medical terms, using medical language to describe a problem, adopting a medical framework to understand a problem, or using a medical intervention to ‘treat’ it. This is a sociocultural

process that may or may not involve the medical profession, lead to medical social control or medical treatment, or be the result of intentional expansion by the medical profession (Conrad 1992).

Conrad's definition has the strength of being purely descriptive and value neutral but is incomplete due to two key limitations— it assumes that medicalization is categorical rather than continuous and cannot clearly identify when the threshold between categories has been crossed. Halfmann (2011), therefore supplements Conrad's definition with a “typology that identifies three dimensions of medicalization— discourses, practices, and identities; at three levels of analysis— macro, meso, micro”. With this addition, medicalization can be viewed as *a series of multidimensional processes, occurring at multiple levels of analysis, that influence the extent to which a problem is defined in medical terms, described using medical language, understood by adopting a medical framework, or treated using medical intervention*. Table 1 from Halfmann (2011) lists the levels and dimensions across which medicalization (and demedicalization) can occur.

A Conrad/Halfmann hybrid definition allows comparisons of the extent to which phenomena (such as inattention, hyperactivity and impulsivity in children) are medicalized in different societies. Non-medical perceptions of childhood behaviours can therefore be incorporated as factors that impact the level and nature of medicalization in each society.

### **1.4.1 Medicalization of inattention, hyperactivity and impulsivity: a global phenomenon**

ADHD is often considered to be “an exemplary case of medicalization” (Conrad & Bergey, 2014). In the space of roughly two decades, the ADHD shifted from being viewed as a predominantly American phenomenon (Anderson, 1996; Canino & Alegria, 2008), to being viewed as a global medical phenomenon, with a three-fold increase in stimulant use and nine-fold increase in spending on stimulants globally between 1993 and 2003 alone (Schleffler et al., 2007). However, this concept creep has not been uniform. Even among countries that embrace a medical conceptualization of ADHD, there is the presence of *creolization* or blending together of separate cultural traditions into a unique local practice. Although typically used in discussions of colonialization/colonial domination (Kirkmayer, 2006; Glissant, 1997), creolization can also refer to the adoption of concepts or labels for pragmatic purposes. Indeed, the worldwide increase in the medicalized view of ADHD can be seen as a mosaic of pragmatism-driven creolizations with the USA at its core. Several key themes that drive countries’ pragmatism toward ADHD in children have been identified. They are grouped in Table 2, using Halfmann’s multidimensional view of medicalization.

**Table 1 Levels and dimensions of medicalization and demedicalization**

	Macro	Meso	Micro
	Legislation, rulings, reports, and debates of national and international organizations such as government bureaucracies, courts, legislatures, corporations, markets, universities, journals, foundations, non-profit organizations, and the media	Mission statements, reports, advertising, and procedures of local and regional organizations such as workplaces, hospitals, medical groups, clinics, nursing homes, schools, social service agencies, and prisons	Face-to-face interaction and physical contact between providers (medical and nonmedical) and clients Client self-management
<i>Discourses</i>	Biomedical vocabularies, models, and definitions – symptom, syndrome, disease, illness, contagion, etc.		
<i>Practices</i>	Biomedical practices and technologies – testing, measurement, normalization, surveillance, risk assessment, insurance coverage, examination, lab testing, imaging, hygiene, surgery, pharmaceuticals, medical devices, etc.		
<i>Identities (and actors)</i>	Individual and collective biomedical actors – physicians, biomedical researchers, hospitals, insurance companies, medical groups, drug and device makers, medical schools, professional associations, etc.		

**Table 2 Themes in the medicalization of ADHD literature**

	Macro	Meso	Micro
Discourses	Historical and geopolitical impact on accepted treatments of mental health concerns	Societal expectations of parents	Parent and teacher expectations (including stigma) of children, face-to-face interactions between healthcare providers and parents/children
Practices	Legislation on direct-to-consumer marketing, regulation of stimulant medication	Centralization of mental health treatment, teacher training and experience, biomedical versus psychoanalytic bent of clinical training programs, use of DSM or ICD for diagnosis	
Identities (and actors)	Multinational pharmaceutical companies, advocacy groups and foundations, governmental ministries	Local availability of stimulant medication	Doctors and teachers

Note: This table describes prominent themes in the literature on the worldwide medicalization of ADHD (Bergey et al., 2018; Conrad & Bergey, 2014; Slagboom et al., 2021). It is not an exhaustive list, nor is each theme applicable to every country.

### 1.4.2 Medicalization of inattention, hyperactivity and impulsivity in Canada

To the extent that generalizations can be made, Canada can be viewed as highly medicalized with respect to the conceptualization of mental health conditions in children. Canada is a high-income nation that has a British influence via history and an American influence via proximity. The Canadian approach to ADHD exemplifies both of these influences. In the development of local ADHD guidelines, American and British practices were evaluated (Malacrida & Semach, 2018). Reviewers found that in some ways, they were diametrically opposed to each other. This was especially the case regarding pharmaceuticals in the respective treatment algorithms. The American model was seen as a medication-first approach, whereby drugs are at the core of treatment planning for most cases of ADHD. The British model was seen as a medication-last approach, whereby drugs are indicated only after psychosocial interventions are shown to be of limited effect, or only as a first-line treatment for the most severe presentations.

The Canadian model for ADHD assessment and treatment in children was envisioned as a “third way” (Malacrida & Semach, 2018) in taking inspiration from both predecessors while carving out its own path. This model appears firmly rooted in the biopsychosocial tradition whereby mental health issues are viewed in the context of natural (*bio*), intrapersonal (*psycho*) and interpersonal (*social*) considerations. Theoretically, ensuing treatments will therefore be tailored and holistic. Specific to ADHD, guidelines indicated that medication would be used to facilitate the efficacy of psychosocial facets of treatment (Malacrida & Semach, 2018). The Canadian model can be therefore thought of as a medication-as-facilitator approach. At this point, Canada may

be deemed as taking a less medicalized approach to ADHD-related behaviours in children than the United States and a more medicalized approach than Britain.

In practice, the Canadian approach to ADHD-related behaviours in children may be more medicalized than treatment guidelines suggest. The impact of American practices, governmental classification of ADHD, the relationship between familial socioeconomic considerations and the public healthcare system, and teaching practices, are examples of such. The influence of American practices can be observed across numerous facets of the Canadian ADHD landscape, including advocacy groups such as the Centre for Awareness of ADHD in Canada (CADDAC). CADDAC often directs parents to American ADHD resources and in doing so, may serve to increase medicalization of ADHD-related behaviours among parents (Malacrida & Semach, 2018). American ADHD resources for physicians and mental health practitioners are also pervasive. These are typically held in high regard and are readily accessible (Malacrida & Semach, 2018). Canadian guidelines are just that—guidelines; professional colleges and governments do not mandate their use. Individual practitioners consequently have considerable latitude in how they manage ADHD, which may cause gravitation toward (more medicalized) American approaches.

The federal government of Canada officially recognizes ADHD as a disability (Government of Canada, 2007). This stance filters down to provincial governments as well. Treatment received from paediatricians, psychiatrists and family doctors is therefore covered by the provincial governments, while treatment from (non-medical) mental healthcare providers is not, and the cost of private services can be prohibitive. For example, a comprehensive ADHD assessment and treatment plan can cost \$2750

Canadian dollars (Possibilities Clinic, 2024). Parents with less financial means may opt for the lower-cost/free services that tend to adopt a more medication-first approach. In fact, the approach of the ADHD guidelines:

Do not necessarily get spooled out in Canadian children's actual assessments, where a need for expediency and a lack of funding and resources for these ideal assessments often mean that children are diagnosed without multisite observations or input from multiple adults in the child's life (Malacrida & Semach, 2018).

Teaching practices in Canada indicate a medicalized view of ADHD-related behaviours. Teachers who flag potential ADHD symptoms refer children for diagnosis and treatment, which is typically done by medical professionals only (Edmunds & Martsch-Litt, 2008). This is in line with the disorder-spotter designation (Brault et al., 2023), which can be argued for, given the perceptions of ADHD-related behaviours found among Canadian teachers. In a study comparing perceptions of Canadian and Belgian teachers, most of the former were shown to have the "medical explanation as their main belief" (Brault et al., 2023). Canadian teachers often medicalized student behaviors, while Belgian teachers, observing similar hyperactive and inattentive behaviors, did not frequently attribute them to ADHD. Both groups agreed on what constitutes hyperactive or inattentive behaviour but differed significantly in viewing these behaviors as problematic and needing medicalized intervention.

Overall, it appears that medicalization of ADHD-related behaviours in children is relatively high in Canada.

### **1.4.3 Medicalization of inattention, hyperactivity and impulsivity in Trinidad & Tobago**

Making a general statement about the medicalization of child mental health concerns in Trinidad & Tobago is not straightforward. It can however, be characterized by the influences of colonial Britain and contemporary America. In what is considered the definitive account of Caribbean history, Williams (2010) stated that “for over four and a half centuries the West Indies have been the pawns of Europe and America”. Medicalization in Trinidad & Tobago can also be characterized by the country’s idiosyncratic reactions to British and American influences, which are exemplified in the education and health sectors—two areas most relevant to children’s mental health, and by extension, the perception of ADHD-related behaviours.

Post-independence Trinidad & Tobago is thought to be highly influenced by North American culture (Youssef et al., 2015). The education system however, is an instance of its British colonial legacy. This colonial influence on education is two-fold, first in the societal mores around the use of physical force by authority figures and second, by the structure of the education system itself, which prioritizes discipline. Discipline was (and is) held in high regard—so much so that it is the first of the national watchwords (Discipline, Production, Tolerance).

Physical force as an instrument of demonstrating and maintaining authority, is rooted in the colonial history of Trinidad & Tobago. During the colonial period, the now independent countries in the Caribbean were highly specialized production centres for Europe, fuelled by slavery and then indentured servitude, where state-sanctioned practices normalized physical aggression (e.g., corporal punishment) as a means of maintaining

discipline. Corporal punishment endured as a mainstay in this regard (Bailey et al., 2014). In Trinidad & Tobago, corporal punishment of children by parent is still legal, as long as it is “reasonable”. Until the Children Act of 2012, under common law, it was implicitly understood that parents deputized teachers with the right to administer corporal punishment to students (Bailey et al., 2014). Even with the passage of the Children Act, teachers appeared to be partial to corporal punishment. As recently as 2022, the High Court was required to adjudicate on whether a teacher had the right to administer corporal punishment (Loutoo, 2022). During these proceedings, the State argued on a teacher’s behalf, that “lawful and reasonable force” was used, but the judge affirmed that the administration of corporal punishment was no longer under teachers’ remit. Prior to the judgement, Bailey et al. (2014) surveyed students and teachers in Trinidad & Tobago, finding that 91% of students received corporal punishment themselves, while 71% of teachers used corporal punishment and 75% believed its use is justified. It is therefore not unreasonable to surmise that this belief is still held among teachers (and parents who can still legally administer corporal punishment to their children).

The enduring legacy of corporal punishment is germane to the topic of medicalization as it is directly tied to the prioritization of discipline in the education system; the administration of, and belief in corporal punishment is due to its perceived effectiveness in maintaining discipline. At five years old, children enter primary school (roughly equivalent to kindergarten through Grade six), which prepares them for national exams, typically by the age of 11 years. Performance on these exams now known as the Secondary Entrance Assessment (SEA), is the main criteria by which secondary school placement is determined. Parents are required to submit a list of four choices of secondary

schools and there are a handful of choices (usually schools run by religious boards) that are considered prestigious. As an indication of the importance academic achievement plays in the national consciousness, national newspapers publish an exhaustive list of each student who wrote the SEA that year and what secondary school they were placed in. It is also common practice for principals or teachers to assemble the entire school to announce each child's secondary school placement. There is significant pressure on children to achieve in this zero-sum context. This also extends to parents who experience pressure to get their five-year-olds into primary schools with a reputation for high placement rates in prestigious secondary schools. ADHD-related behaviours are at odds with this framework, wherein sustained attention and high inhibitory control are prized qualities.

Teachers are not exempt from the pressures inherent to the local education system. Teachers frequently feel that their training was insufficient for the vicissitudes of the real-world classroom (Worrell et al., 2006). Under these circumstances, teachers prioritized "classroom management and control" that include "survival strategies and traditional methods of achieving this" (Worrell et al., 2006; Morris and Joseph, 2000). If these beliefs and behavioural patterns still hold, they may predispose negative views of hyperactive and impulsive behaviours as being sources of disruption and caused by indiscipline. Inattention, which is qualitatively different in the classroom dynamic, may end up being ignored or even preferred by teachers who are faced with management and control challenges.

Like the education system, the mental health system in Trinidad & Tobago was based on the British colonial model. The custodial lunatic asylum prevailed from the mid-

19<sup>th</sup> century until the latter part of the 20<sup>th</sup> century (Hickling et al., 2013). The growing discontent with this model led to significant changes that highlight the impact of culture on perception and in turn, perception's impact on mental health treatments. The changes in Trinidad & Tobago were spearheaded by Michael Beaubrun, a Caribbean psychiatrist, as the region began to move away from the (colonial) British perception that mental illness is a disqualifier from the wider society. The local perspective shifted towards the view that mental health is a psychosocial phenomenon, necessitating a community mental health model. This shift precipitated the decentralization of mental health treatment and the commencement of indigenous mental health training programmes in the Anglophone Caribbean that "involved the implementation of Maxwell Jones' concept of the therapeutic community, the concept of vocational therapy and community and family reintegration of patients" (Hickling et al., 2013).

Public sector healthcare in Trinidad and Tobago is decentralized with significant decision-making powers delegated to Regional Health Authorities (RHAs). Mental healthcare follows a similar framework, with RHAs overseeing community paediatric psychiatric clinics that provide a range of diagnostic and treatment services (including for neurodevelopmental disorders like ADHD). Clinical staff at the North Central RHA noted a relatively steady increase in paediatric ADHD cases. Within the public sector, diagnosis and treatment of ADHD is also managed by the Student Support Services Division (SSSD) in the Ministry of Education. When teachers flag potential ADHD symptoms, they engage the SSSD whose in-house clinical psychologists would then conduct comprehensive assessments and develop treatment plans that include academic supports as necessary. Clinical staff of the SSSD reported similar findings to the paediatric RHA

clinics but also noted that ADHD could be underreported, as behaviours may be attributed to other causes. It should be noted that even though clinicians in the public sector indicated a relatively small number of children being assessed (as compared with the potential true prevalence rate), their caseloads are high given staff complements. As such, demand for services carries over into the private sector where costs can be prohibitive for parents with less financial means.

The post-colonial healthcare system is rooted in a shift away from custodial (and somewhat punitive care), to one that is more community oriented, so in that sense it is arguably less medicalized than its colonial predecessor. While the influence of the United States has contributed to increased medicalization (as will be discussed), it has also led to a loss of trust in the healthcare system, which serves to decrease medicalization in the country. In a study of medicalization in Trinidad & Tobago, Reznik et al. (2007) found that the American influence has led to “atomistic individualism”, which is a form of heightened self-interest and a radical departure from the traditional community orientation of the past. Reznik et al. (2007) argue that this shift has affected the delivery of healthcare. Healthcare providers were typically viewed as pillars of the community who were heavily invested in the community’s wellbeing and felt a sense of social responsibility to its members. The growing self-interest attributed to American-influenced capitalism caused healthcare providers to be viewed with a sense of suspicion and distrust (as is to be expected for medical advice from a self-interested party). Healthcare providers interviewed by Reznik et al. (2007), noted that there was a high level of distrust among stakeholders in the healthcare system (including patients’ distrust of providers who were often viewed as agents of the government) . The advent of time-limited consultations

(seen as another American import) has further eroded the perception that the provider is genuinely interested in the patient's wellbeing. In this sense, the American influence on healthcare has been met with a reactionary form of demedicalization—growing distrust led to less reliance on the medical field and less acceptance of its perspectives on mental health conditions in children.

Countervailing factors have shifted the mental health landscape towards greater levels of medicalization. Training of mental health practitioners is one such factor. Three tertiary institutions offer graduate level training in mental health professions. The University of the West Indies (UWI) trains psychiatrists, paediatricians and nurses (its clinical psychology programme was recently discontinued); the University of the Southern Caribbean (USC) and the Caribbean Nazarene College (CNC), both run by religious institutions, train counselling psychologists. All of these institutions take a medicalized approach to mental health, especially as it pertains to conditions like ADHD (e.g., the DSM is used for training in diagnostics, and the Vanderbilt Assessment Scale, the BRIEF, the Wisconsin Card Sorting Test, and the WISC are commonplace in psychometric assessment training). It should be noted that this does not necessarily signify a preference for pharmaceutical treatment, but rather, a preference for interpreting ADHD-related behaviours through a medicalized lens.

Medicalization also occurs at the governmental level and through the work of a local foundation. Governmental legislation allows for the import and use of stimulants (such as amphetamine, methylphenidate and dexamphetamine) to treat ADHD in children (Government of the Republic of Trinidad and Tobago, 2016; Government of the Republic of Trinidad & Tobago, 2019); methylphenidate is provided free of charge in the public

sector if prescribed at a public clinic. The establishment and growing impact of the ADHD Foundation of Trinidad and Tobago indicates growing medicalization as well. The foundation disseminates mainly North American psychoeducational material about ADHD and connects interested parties with mental health practitioners. It also hosts the “ADHD Aware!” conference for the general public, researchers, and mental health practitioners, with keynote speeches by prominent North American clinicians and ADHD advocates (see Appendix C). Via personal correspondence, the president of the foundation indicates that there is a growing number of calls-for-service from parents of children exhibiting ADHD-related behaviours (and adults who believe they may have ADHD).

In Trinidad & Tobago, there are also indirect indicators of demedicalization or non-medicalization of mental health concerns in general, and ADHD-related behaviours in particular, namely *dual-pathway help seeking* and the operations of private pharmaceutical companies. Ramkissoon et al. (2017) found that there is increasing acceptance of the medical basis for mental illness, but even among persons holding this view, non-medical interventions (mainly religious) were still preferred. Religious intervention was shown to be the preferred first line of treatment or as a parallel intervention to psychiatric treatment (hence, dual pathway). Methylphenidate is the single drug on the market for treatment of ADHD. Its brand-name formulation (Concerta) is imported by only one pharmaceutical company, Oscar Francois Ltd. This is not a legislated or typical market-dictated monopoly. In fact, another pharmaceutical company, Bryden PI, previously supplied Ritalin to the local market but discontinued it due to low demand. These circumstances suggest that medicalization may be relatively low at some levels of the society.

Overall, it appears that medicalization of ADHD-related behaviours is growing in Trinidad & Tobago but is unlikely to have unseated discipline as the primary lens through which such behaviours are perceived. It also appears that mistrust of the healthcare system may be a barrier to medicalization of mental health conditions. Parents and teachers may therefore hold less medicalized views of ADHD-related behaviours in children, relative to their Canadian counterparts, and be more inclined to view these behaviours as indicative of indiscipline. The dual-pathway approach to mental health conditions also suggests that local parents and teachers may simultaneously hold medicalized and non-medicalized views of the same behaviours.

### **1.5 The present study**

Undiagnosed and undertreated ADHD in children is endemic to the Latin America and Caribbean region, of which Trinidad & Tobago is part (Maia et al., 2015; Baumeister, 2006; Baumeister et al., 2003; Rodhe, 2002). An estimated eight million children with ADHD have been categorized as undiagnosed and/or undertreated in the region. (Polanczyk et al., 2008). Epidemiologic, diagnostic and treatment data on ADHD in children is sparse for Trinidad & Tobago, but by all indications, the regional status quo applies (Dumas, 2011; Youssef et al., 2015). Accurate diagnosis and effective treatment hinges on the perception of ADHD-related behaviours as such, by parents and teachers. What parents and teachers perceive when they observe these behaviours is currently unknown.

The current study is the first that attempts to ascertain how parents and teachers in Trinidad & Tobago perceive ADHD-related behaviours in children, as compared with

their Canadian counterparts who typically accept a medicalized approach to conditions like ADHD (Malacrida & Semach, 2018; Brault et al., 2023). Two research techniques that are known to be effective for cross-cultural mental health research that parses nested data structures (vignette-based instruments and multilevel modelling analytical designs) were used.

The primary hypotheses of this study were that Trinidadian and Tobagonian participants would be less likely than Canadians to attribute ADHD-related behaviours in children to medicalized causes (i.e., psychological and medical); and that Trinidadian and Tobagonian participants would be more likely than Canadian participants to attribute ADHD-related behaviours in children to non-medicalized causes (i.e., disciplinary, motivational, religious). A country difference in the perceived urgency for intervention was included as a secondary hypothesis.

## Chapter 2

### 2.1 Methods

#### 2.1.1 Participants

The study had a total of 380 participants, with 177 from Canada and 203 from Trinidad & Tobago.

Participants from Canada included 65 teachers and 112 parents. Participants were aged 22-70 ( $M = 40.8$  years,  $SD = 7.08$  years), with 167 females, 6 males, 3 nonbinary and 1 preferring not to answer. Recruitment for Canadian participants was done via social media advertising through the Facebook page of the Cognitive Development and Neuroimaging Lab (Western University). Participants were not directly compensated but were given the option to enter a raffle for one of six \$50 Amazon gift cards.

Participants from Trinidad & Tobago included 55 teachers and 148 parents. Participants were aged 27-70 ( $M = 41.7$  years,  $SD = 8.47$  years), with 145 females and 58 males. Given the small population, recruitment for Trinidadian and Tobagonian participants was done via direct advertising to parent and teacher groups rather than via social media advertising. Participants were invited to share the survey link with eligible peers. Participants were not directly compensated but were given the option to enter a raffle for one of six \$50 Amazon gift cards.

Ethics approval for Canadian data collection was granted by the Research Ethics Board of Western University. For data collection in Trinidad & Tobago, ethics approval was granted by the Research Ethics Board of Western University and the Campus Research Ethics Committee of the University of the West Indies, St Augustine Campus (see Appendices D and E).

### **2.1.2 Procedure**

Teachers and parents from both countries were administered identical protocols respectively. Consent and letter of information forms were the same for both countries (see Appendices A and B). Minor modifications were made to the demographic questionnaires for increased relevance in either country (e.g., in Canada, household income is typically described in annual amounts, whereas in Trinidad & Tobago it is usually quoted in monthly amounts).

All participants were directed to the Qualtrics survey hosting platform of Western University, where they first completed the eligibility, consent and demographics portion of the questionnaire. The final demographic question required participants to state whether they are currently employed as a teacher (primary or secondary school). If yes, they were directed to the teacher-related vignettes, if no, they were directed to the parent vignettes; in effect, teachers who were also parents were classified as teachers. The ordering of vignettes was randomized for each participant to mitigate any learning effects. Knowledge and attitudes scales were administered after all vignettes were completed.

### **2.1.3 Instruments**

The instrument used for the current study comprised three sections, namely, demographics, vignettes, and knowledge and attitudes scales. In the vignette section of the questionnaire, each participant was shown four vignettes that described a 10-year-old boy who displayed behaviours consistent with ADHD, predominantly inattentive presentation (DSM code F90.0); ADHD, predominantly hyperactive/impulsive presentation (DSM code F90.1); posttraumatic stress disorder (DSM code F43.10); and bullying/social exclusion or rejection (DSM code Z60.4). The non-ADHD-related

vignettes were included as controls, because their related behaviours are generally seen as more atypical (in the case of posttraumatic stress) and less atypical (in the case of bullying/social exclusion and rejection), than ADHD-related behaviours. In the vignettes, “son” and “student” were used for parents and teachers respectively. Following each vignette, participants were asked to state their level of agreement (using a Likert scale of 1 – 5 in ascending order) with nine questions pertaining to the vignette. The first question pertained to urgency of intervention (without specifying type), and the following seven pertained to the underlying cause of the behaviour. A final open-ended question was posed, asking participants to describe the condition that the child was experiencing. This section of the instrument is an adaptation of the stigmatization questionnaire from Hutchinson et al. (1999) and was developed using best-practice guidelines for vignettes from Lapatin et al. (2012), and Yaser et al. (2016).

The final section of the questionnaire comprised ADHD knowledge and attitudes scales, and two questions pertaining to prior experience with ADHD. The knowledge and attitudes scales (26 items and 25 items respectively) were adapted for use in Trinidad & Tobago by Youssef et al. (2015) from Kos et al. (2004) and Sciutto et al. (2000). The reliability estimate calculated for these scales (Cronbach’s  $\alpha = 0.86$ ) indicate appropriate internal consistency.

#### **2.1.4 Analytical Plan**

Descriptive and comparative analyses were conducted for general characteristics of both samples. Within-country mean differences between parents and teachers (for knowledge of ADHD and attitudes towards ADHD) were compared to determine if

separate country-level analyses would be needed for each role. The data from the vignette section consisted of 32 data points nested within each participant (4 vignettes x 8 questions per vignette). The assumption of independence of observations, necessary for linear regression, would therefore be violated. As such, multilevel modeling was used with each question in the vignette section as a separate dependent variable, and the four vignettes as independent variables (level 1). The initial model for each question included country as a moderator (level 2). This was followed by models including country as a moderator and knowledge as a covariate, country a moderator and attitude as a covariate, and a final model including country as a moderator, and knowledge and attitude as covariates. Degrees of freedom were calculated using the Satterthwaite method, which yields degrees of freedom between the number of data points between level 1 and level 2. Bootstrapping was utilized when the assumption of normality in the residuals was violated. This non-parametric method allowed for the generation of reliable estimates and confidence intervals without relying on the distributional assumptions that the standard parametric tests require. Results from the fixed effects omnibus tests and fixed effects parameter estimates were examined for statistical significance. Where statistical significance was observed, Bonferroni-corrected post hoc contrasts were examined for each model (moderator only, moderator and each covariate individually, moderator and both covariates). The respective post hoc contrasts for each model were then compared for changes in magnitude and significance as covariates were sequentially included. This allowed for drawing inferences about the impact of knowledge and attitudes on country differences in the perception of ADHD-related behaviours in children. All statistical analyses were performed with Jamovi, version 2.3 (The Jamovi Project, 2022).

## 2.2 Results

To address the overarching research question—“How do parents and teachers in Trinidad and Tobago perceive ADHD-related behaviours in children?”—this study aimed to investigate the level of urgency for intervention that participants ascribe to ADHD-related behaviours in children, as well as their causal attributions of those behaviours. For context, comparisons were made with other mental health conditions and with a country (Canada) putatively high in the medicalization of ADHD-related behaviours in children. The following section presents the results of analyses conducted to explore these dynamics.

### 2.2.1 Sample Demographics

Table 3 summarizes demographic measures for Canadian and Trinidadian and Tobagonian participants. Females comprised the majority of participants in the sample ( $n = 312$ , 82.11%); this trend held for both countries, as well as for parents and teachers. The mean age of parents and teachers in both countries was between 40 years and 43 years (approximately). Mean income levels were in the middle range for both countries, with Canadian teachers being in the high middle-income category on average ( $M = 4.91$ ,  $SD = 1.21$ ). Note that there were six income bands for both countries, based on purchasing power parity, rather than direct currency equivalents. Approximately 68% of participants attained a bachelor’s degree or higher; approximately one quarter of parents in Trinidad & Tobago fell into this category, making them the most educated cohort (on average) within the overall sample.

#### **Table 3 Sample Demographics**

	Canada			Trinidad & Tobago			Total
	T	P	Sub Total	T	P	Sub Total	
<b>N</b>	65	112	177	55	148	203	<b>380</b>
<b>Gender</b>							
Female	62	105	167	41	104	145	<b>312 (82.11%)</b>
Male	2	4	6	14	44	58	<b>64 (16.84%)</b>
Gender Diverse	1	2	3	0	0	0	<b>3 (0.79%)</b>
(Blank)	1	0	1	0	0	0	<b>1 (0.26%)</b>
<b>Mean Age (SD)</b>	42.7 (8.64)	39.7 (5.75)	40.8 (7.08)	42 (8.47)	41.6 (8.49)	41.7 (8.47)	<b>41.3 (7.85)</b>
<b>Mean Income Range (SD)</b>	4.91 (1.21)	3.75 (1.56)	4.18 (1.54)	3.96 (1.34)	3.67 (1.62)	3.75 (1.56)	<b>3.95 (1.56)</b>
<b>Education (Bachelor's Degree+)</b>	13%	15%	28%	14%	26%	40%	<b>68%</b>

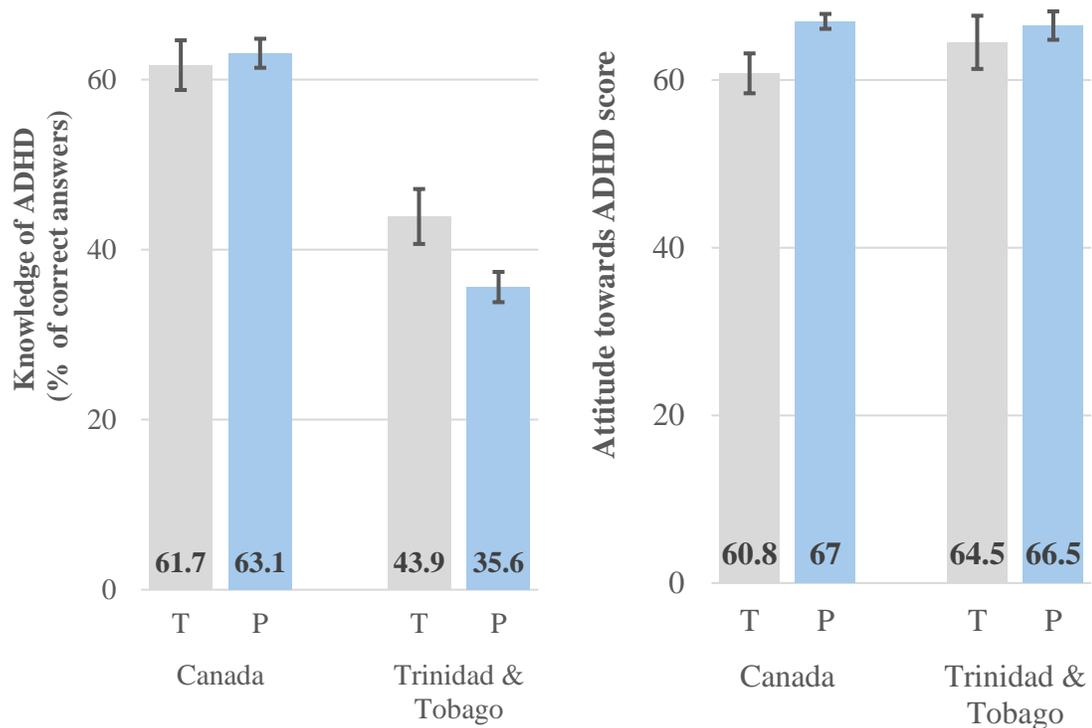
Note: T= Teacher P= Parent

### 2.2.2 Country and role differences in knowledge and attitudes

As seen in Figure 1, knowledge of ADHD was higher among Canadian parents, than Trinidadian and Tobagonian parents,  $t(376) = 10.28, p < .001, 17.74%$ , higher among Canadian teachers, than Trinidadian and Tobagonian teachers,  $t(376) = 4.54, p < .001$ , and 22.60%, higher overall among Canadians than Trinidadians and Tobagonians,  $t(376) = 4.54, p < .001$ . There were no within-country mean differences in knowledge of ADHD

between parents and teachers. There were no between-country mean differences, or between-role mean differences (parents and teachers) in attitudes toward ADHD.

**Figure 1 Country and role differences in knowledge of and attitude towards ADHD**



Note: T= Teacher P= Parent

### 2.2.3 Country differences in urgency of intervention for mental health conditions

To test for country differences in the perceived urgency of intervention for mental health conditions generally, responses to the urgency question were modelled across all vignettes. As seen in Table 4, there was only a significant country difference for trauma-related behaviours,  $t(1189) = 3.34, p = .024$ . It is noteworthy however, that the perceived urgency of intervention for all mental health conditions was high for both countries, as all estimated marginal means were above four (on a scale of 1 – 5).

**Table 4 Country differences in urgency of intervention for mental health conditions**

<b>Urgency of Intervention</b>	<b>Estimated Marginal Mean (SE)</b>		<b><i>p</i>(Bonferroni)</b>
	<b>Canada</b>	<b>Trinidad &amp; Tobago</b>	
All Mental Health Conditions	4.33 (0.05)	4.28 (0.05)	0.474
ADHD Inattentive	4.05 (0.07)	4.19 (0.07)	1.000
ADHD Hyperactive/Impulsive	4.07 (0.07)	4.24 (0.07)	1.000
Trauma	4.78 (0.07)	4.45 (0.07)	0.024*
Bullying	4.43 (0.07)	4.25 (0.07)	1.000

Note: \*  $p < 0.05$

#### 2.2.4 Country differences in attributions of mental health conditions

To test for general country differences in attributions of mental health conditions, responses to the attribution questions were modelled across all vignettes. In general, participants from Trinidad & Tobago more strongly attributed mental health related behaviours to non-medical factors than did participants from Canada, across all vignettes. As seen in Table 5, Trinidad & Tobago participants were more likely than Canadian participants, to attribute mental health related behaviours to a lack of motivation,  $t(375) = -5.44, p < .001$ , lack of academic potential  $t(374) = -4.89, p < .001$ , disciplinary issues  $t(374) = -3.37, p < .001$ , and economic or financial hardship  $t(374) = -9.39, p < .001$ . Trinidad & Tobago participants were also more likely than Canadian participants, to attribute mental health related behaviours to a psychological condition  $t(374) = -2.39, p = .017$ , but less likely to attribute mental health related behaviours to a medical condition  $t(373) = 2.92, p = .004$ .

**Table 5 Country differences in attributions of mental health conditions**

Attribution	Estimated Marginal Mean (SE)		p(Bonferroni)
	Canada	Trinidad & Tobago	
	<i>Non-medicalized Attributions</i>		
Lack of Motivation	1.68 (0.05)	2.06 (0.05)	<.001***
Academic Potential	1.61 (0.05)	1.94 (0.05)	<.001***
Disciplinary Issue	1.90 (0.06)	2.16 (0.05)	<.001***
Economic/Financial Issue	2.17 (0.05)	2.78 (0.04)	<.001***
Spiritual Condition	2.36 (0.06)	2.19 (0.06)	0.052
	<i>Medicalized Attributions</i>		
Psychological Condition	3.44 (0.05)	3.60 (0.05)	0.017*
Medical Condition	2.94 (0.05)	2.75 (0.04)	0.004**

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$  and \*\*\*  $p < 0.001$

### 2.2.5 Country differences in attributions of ADHD-related behaviours

To test for country differences in attributions of ADHD-related behaviours relative to mental health conditions in general, post hoc comparisons of attributions for all mental health conditions (without covariates) were first examined. As seen in Table 6, Trinidadian and Tobagonian participants were more likely than Canadian participants to attribute ADHD-Inattentive behaviours to a lack of motivation,  $t(1023) = -4.51$   $p < .001$ , or a disciplinary issue,  $t(1048) = -3.90$   $p = .003$ . Trinidadian and Tobagonian participants were also more likely than Canadian participants to attribute ADHD-Combined behaviours to a disciplinary issue,  $t(1058) = -4.07$   $p = .001$ . There were no country differences in attributing behaviours in the control conditions to disciplinary issues.

To test for country differences in attributions of ADHD-related behaviours considering the influence of knowledge and attitudes, post hoc comparisons of attributions for ADHD-related behaviours were examined across models. As seen in Table 7, the previous country differences for ADHD-Inattentive and ADHD-Combined were not

significant when models included knowledge of ADHD as a covariate. Attitudes toward ADHD did not have an impact on country differences when included as a covariate. This suggests that country differences are related to knowledge of ADHD.

**Table 6 Between-country comparisons of attributions of four vignette-based profiles of mental health related behaviours**

Vignette	Attributions						Psychological condition	Medical condition
	Non-medicalized			Medicalized				
	Lack of motivation	Lack of academic potential	Disciplinary Issue	Economic or financial hardship	Spiritual condition			
ADHD Inattentive ( <i>p</i> <sub>Bonferroni</sub> )	<b>-0.43</b> ( <b>&lt;0.001</b> )***	-0.27 (0.080)	<b>-0.41</b> ( <b>0.003</b> )**	-0.10 (1.000)	-0.02 (1.000)	-0.20 (1.000)	0.05 (1.000)	
ADHD Hyperactive/ Impulsive ( <i>p</i> <sub>Bonferroni</sub> )	-0.20 (0.870)	-0.23 (0.366)	<b>-0.43</b> ( <b>0.001</b> )**	0.14 (1.000)	0.02 (1.000)	-0.98 (1.000)	0.27 (0.204)	
Trauma ( <i>p</i> <sub>Bonferroni</sub> )	<b>-0.48</b> ( <b>&lt;0.001</b> )***	<b>-0.66</b> ( <b>&lt;0.001</b> )***	0.01 (1.000)	<b>-2.54</b> ( <b>&lt;0.001</b> )***	<b>0.40</b> ( <b>0.003</b> )**	-0.15 (1.000)	0.28 (0.127)	
Bullying ( <i>p</i> <sub>Bonferroni</sub> )	<b>-0.40</b> ( <b>&lt;0.001</b> )***	-0.16 (1.000)	-0.20 (1.000)	0.08 (1.000)	0.21 (1.000)	-0.23 (0.797)	0.16 (1.000)	

Note:

Values <0 indicate Trinidad & Tobago had a higher level of agreement with the attribution than Canada

\*  $p < 0.05$ , \*\*  $p < 0.01$  and \*\*\*  $p < 0.001$

**Table 7 Between-country comparison of attributions of ADHD-related behaviours, controlling for varying extraneous variables**

Vignettes	Canada vs Trinidad & Tobago		Canada vs Trinidad & Tobago controlling for Knowledge of ADHD		Canada vs Trinidad & Tobago controlling for Attitudes toward ADHD		Canada vs Trinidad & Tobago controlling for Knowledge of and Attitudes toward ADHD	
	Lack of motivation	Disciplinary Issue	Lack of motivation	Disciplinary Issue	Lack of motivation	Disciplinary Issue	Lack of motivation	Disciplinary Issue
ADHD Inattentive ( <i>p</i> <sub>Bonferroni</sub> )	<b>-0.43</b> ( <b>&lt;0.001</b> )***	<b>-0.41</b> ( <b>0.003</b> )**	-0.31 (0.078)	-0.34 (0.089)	<b>-0.42</b> ( <b>&lt;0.001</b> )***	<b>-0.40</b> ( <b>0.004</b> )**	-0.24 (0.580)	-0.27 (0.653)
ADHD Hyperactive /Impulsive ( <i>p</i> <sub>Bonferroni</sub> )	-0.20 (0.870)	<b>-0.43</b> ( <b>0.001</b> )**	-0.08 (1.000)	-0.36 (0.054)	-0.20 (1.000)	<b>-0.42</b> ( <b>0.002</b> )**	-0.02 (1.000)	-0.28 (0.459)

Note:

Values <0 indicate Trinidad & Tobago had a higher level of agreement with the attribution than Canada

\*  $p < 0.05$ , \*\*  $p < 0.01$  and \*\*\*  $p < 0.001$

## Chapter 3

### 3 Discussion

There are clear differences in the medicalization of ADHD-related behaviours in children, between Trinidad & Tobago and Canada. Participants from Trinidad & Tobago were more likely to perceive all ADHD-related behaviours as indicative of disciplinary issues and ADHD-related inattentive behaviours also as a motivational issue. The disciplinary perceptions appear to be ADHD-specific, because there were no discipline-related country differences for the non-ADHD mental health conditions.

Country differences for all ADHD-related behaviours were no longer significant when controlling for knowledge of ADHD. This suggests that the lower knowledge of ADHD among parents and teachers may be driving the higher non-medicalization of ADHD-related behaviours in Trinidad & Tobago. Increasing knowledge of ADHD in Trinidad & Tobago may therefore decrease the likelihood that parents and teachers would perceive ADHD-related behaviours as indiscipline or as a lack of motivation (colloquially referred to as *wotlessness*). Given the pressures related to academic performance that face teachers, parents and young children especially, the ability to identify ADHD-related behaviours as such, can have a significant impact in Trinidad & Tobago. It may also be the case that the persisting view of ADHD-related behaviours as indiscipline, contributes to overrepresentations of ADHD seen among institutionalized juvenile populations in the country (Dumas, 2011).

Addressing ADHD-related behaviours in children is a matter of high urgency for parents and teachers in Trinidad & Tobago. This suggests that if knowledge of ADHD is

increased (independent of efforts to directly improve attitudes towards ADHD), parents and teachers of children with ADHD are likely to seek timely and effective interventions for them. Overall, it appears that increasing the knowledge of ADHD in Trinidad & Tobago can lead to earlier detection of potential symptoms, which would trigger the diagnostic and treatment process sooner and more often (as is needed). In so doing, the risks associated with untreated ADHD can be mitigated and the life-trajectories of children with ADHD can be significantly improved.

Any effective strategy to increase knowledge of ADHD in Trinidad & Tobago must consider the country's particular 'pragmatism-driven creolization' regarding mental health conditions in children. Stakeholders should emphasize that the child's wellbeing is their only priority, while ensuring that parents, teachers and children feel the traditional community orientation that previously engendered high levels of trust in the healthcare providers. Strategies may also gain acceptance by highlighting the positive impact that effective treatment has on academic performance, where corporal punishment and other punitive measures do not.

### **3.1 Limitations**

The current study has limitations that may impact the ability to generalize its results. Gender is one such limitation. Charbonnier et al. (2018) noted that there is a unique relationship between mothers' perception of boys with ADHD. The vignettes in this study described the behaviour of boys and there was an overrepresentation of females in the sample. Conditions stipulated by the Campus Research Ethics Committee of the University of the West Indies also impacted this study. The committee recommended that data collection should be conducted without engaging the Ministry of Education, the

Trinidad & Tobago Unified Teachers' Association, or the national Parent Teacher Association, as bureaucracy would have significantly impeded the process. As such, convenience sampling had to be used for Trinidad & Tobago data collection. However, results from the knowledge and attitudes questionnaires are similar to those of Youssef et al. (2015), which corroborate current findings. Self-report instruments in cross-cultural research also face challenges with structural equivalence and social desirability. While careful attention has been paid to constructing the vignettes, cross-cultural validity is a challenge as interpretations of identical terminology may differ (Fog, 2022). Meza et al. (2019) and Yaser et al. (2016) note the possibility of inflated positive attitudes towards biomedical conceptualizations of atypical behaviours, due to social desirability. Again, congruence with the findings of Youssef et al. (2015) supports the validity of current results.

### **3.2 Conclusions**

Untreated ADHD can have significant negative consequences for children with the condition. Treatments stemming from a medicalized perspective have been shown to effectively mitigate such consequences. The current study demonstrates that parents and teachers in Trinidad & Tobago appear to attribute ADHD-related behaviours in children, to disciplinary and motivational issues, as opposed to more medicalized causes, which seem necessary to trigger accurate diagnosis and effective treatment. Their attributions seem to be driven by low knowledge of ADHD however, and not negative attitudes towards ADHD, which the literature appears to suggest. When knowledge is controlled for, Trinidadians and Tobagonians appear to view ADHD-related behaviours in children,

similar to their Canadian counterparts, who have a more medicalized approach to these childhood behaviours. This is encouraging because it suggests that targeted psychoeducational strategies directed to both parents and teachers in Trinidad & Tobago can be a catalyst for change. Future research can explore the specific knowledge gaps among parents and teachers, allowing for the development of tailored psychoeducation. If such strategies are undertaken with the input of stakeholders like the Ministry of Education and its Student Support Services Division, country-wide interventions would be possible, thereby maximizing the potential benefit for children with ADHD.

“The success of transcultural psychiatric research is often reflected in the development of services where service was hitherto absent” (Hickling et al., 2013).

## References

- Adeyemo, B. O., Biederman, J., Zafonte, R., Kagan, E., Spencer, T. J., Uchida, M., Kenworthy, T., Spencer, A. E., & Faraone, S. V. (2014). Mild traumatic brain injury and ADHD: A systematic review of the literature and meta-analysis. *Journal of Attention Disorders*, 18(7), 576–584.  
<https://doi.org/10.1177/1087054714543371>
- Akmatov, M. K., Ermakova, T., & Bätzing, J. (2019). Psychiatric and nonpsychiatric comorbidities among children with ADHD: An exploratory analysis of nationwide claims data in Germany. *Journal of Attention Disorders*, 25(6), 874–884.  
<https://doi.org/10.1177/1087054719865779>
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). Washington, DC: Author.
- Anderson, J. C. (1996). Is childhood hyperactivity the product of western culture? *The Lancet*, 348(9020), 73–74. [https://doi.org/10.1016/s0140-6736\(05\)64598-9](https://doi.org/10.1016/s0140-6736(05)64598-9)
- Arnold, L. E., Hodgkins, P., Kahle, J., Madhoo, M., & Kewley, G. (2020). Long-term outcomes of ADHD: Academic Achievement and Performance. *Journal of Attention Disorders*, 24(1), 73–85. <https://doi.org/10.1177/1087054714566076>
- Atkins, M. S., Pelham, W. E., & Licht, M. H. (1985). A comparison of objective classroom measures and teacher ratings of attention deficit disorder. *Journal of Abnormal Child Psychology*, 13(1), 155–167. <https://doi.org/10.1007/bf00918379>

- Atkins, M. S., Pelham, W. E., & Licht, M. H. (1989). The differential validity of teacher ratings of inattention/overactivity and aggression. *Journal of Abnormal Child Psychology*, *17*(4), 423–435. <https://doi.org/10.1007/bf00915036>
- Bailey, C., Robinson, T., & Coore-Desai, C. (2014). Corporal punishment in the Caribbean: attitudes and practices. *Social and economic studies*, *63*, 207-233.
- Barkley, R. A. (2006). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment*. Guilford.
- Bauermeister, J. J. (2005). Medication treatment of ADHD in Latino/Hispanic children. *The ADHD Report*, *13*(3), 5–9. <https://doi.org/10.1521/adhd.2005.13.3.5>
- Bauermeister, J. J., Canino, G., Bravo, M., Ramírez, R., Jensen, P. S., Chavez, L., Martínez-taboas, A., Ribera, J., Alegría, M., & García, P. (2003). Stimulant and psychosocial treatment of ADHD in Latino/Hispanic children. *Journal of the American Academy of Child & Adolescent Psychiatry*, *42*(7), 851–855. <https://doi.org/10.1097/01.chi.0000046864.56865.30>
- Bauermeister, J. J., Canino, G., Polanczyk, G., & Rohde, L. A. (2010). ADHD across cultures: Is there evidence for a Bidimensional Organization of Symptoms? *Journal of Clinical Child & Adolescent Psychology*, *39*(3), 362–372. <https://doi.org/10.1080/15374411003691743>
- Bazier, A., O’Laughlin, L., & Feinstein, J. (2024). Parent attributions and attention deficit/hyperactivity disorder knowledge as predictors of specific help-seeking

interests. *Clinical Child Psychology and Psychiatry*, 29(1), 353–367.

<https://doi.org/10.1177/13591045231205972>

Bergey, M. R., Filipe, A. M., Conrad, P., & Singh, I. (2018). *Global Perspectives on ADHD: Social Dimensions of diagnosis and treatment in sixteen countries*. Johns Hopkins University Press.

Bernfort, L., Nordfeldt, S., & Persson, J. (2008). ADHD from a socio-economic perspective. *Acta Paediatrica*, 97(2), 239–245. <https://doi.org/10.1111/j.1651-2227.2007.00611.x>

Biederman, J., Monuteaux, M. C., Doyle, A. E., Seidman, L. J., Wilens, T. E., Ferrero, F., Morgan, C. L., & Faraone, S. V. (2004). Impact of executive function deficits and attention-deficit/hyperactivity disorder (ADHD) on academic outcomes in children. *Journal of Consulting and Clinical Psychology*, 72(5), 757–766. <https://doi.org/10.1037/0022-006x.72.5.757>

Brault, M.-C., Degroote, E., & Van Houtte, M. (2022). Disparities in the prevalence of ADHD diagnoses, suspicion, and medication use between Flanders and Québec from the lens of the medicalization process. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, 27(6), 958–979. <https://doi.org/10.1177/13634593221093492>

Breslau, J., Miller, E., Joanie Chung, W.-J., & Schweitzer, J. B. (2011). Childhood and adolescent onset psychiatric disorders, substance use, and failure to graduate high

school on time. *Journal of Psychiatric Research*, 45(3), 295–301.

<https://doi.org/10.1016/j.jpsychires.2010.06.014>

Brunkhorst-Kanaan, N., Libutzki, B., Reif, A., Larsson, H., McNeill, R. V., & Kittel

Schneider, S. (2021). ADHD and accidents over the life span – A systematic review. *Neuroscience and Biobehavioral Reviews*, 125, 582–591.

<https://doi.org/10.1016/j.neubiorev.2021.02.002>

Canino, G., & Alegría, M. (2008). Psychiatric diagnosis – is it universal or relative to culture? *Journal of Child Psychology and Psychiatry*, 49(3), 237–250.

<https://doi.org/10.1111/j.1469-7610.2007.01854.x>

Chang, Z., Lichtenstein, P., & Larsson, H. (2012). The effects of childhood ADHD

symptoms on early-onset substance use: A Swedish Twin Study. *Journal of Abnormal Child Psychology*, 40(3), 425–435. <https://doi.org/10.1007/s10802-011-9575-6>

Charbonnier, E., Caparos, S., & Trémolière, B. (2018). The role of mothers' affiliate stigma and child's symptoms on the distress of mothers with ADHD

children. *Journal of Mental Health*, 28(3), 282–288.

<https://doi.org/10.1080/09638237.2018.1521944>

Conrad, P. (2006). *Identifying hyperactive children: The medicalization of deviant behaviour*. Ashgate.

Conrad, P. (1992). Medicalization and Social Control. *Annual Review of Sociology*, 18(1), 209–232. <https://doi.org/10.1146/annurev.soc.18.1.209>

- Conrad, P., & Bergey, M. R. (2014). The impending globalization of ADHD: Notes on the expansion and growth of a medicalized disorder. *Social Science & Medicine*, *122*, 31–43. <https://doi.org/10.1016/j.socscimed.2014.10.019>
- Cortese, S., Adamo, N., Del Giovane, C., Mohr-Jensen, C., Hayes, A. J., Carucci, S., Atkinson, L. Z., Tessari, L., Banaschewski, T., Coghill, D., Hollis, C., Simonoff, E., Zuddas, A., Barbui, C., Purgato, M., Steinhausen, H.C., Shokraneh, F., Xia, J., & Cipriani, A. (2018). Comparative efficacy and tolerability of medications for attention-deficit hyperactivity disorder in children, adolescents, and adults: A systematic review and network meta-analysis. *The Lancet Psychiatry*, *5*(9), 727–738. [https://doi.org/10.1016/s2215-0366\(18\)30269-4](https://doi.org/10.1016/s2215-0366(18)30269-4)
- Currie, J., & Stabile, M. (2006). Child mental health and human capital accumulation: The case of ADHD. *Journal of Health Economics*, *25*(6), 1094–1118. <https://doi.org/10.1016/j.jhealeco.2006.03.001>
- Currie, J., Stabile, M., Manivong, P., & Roos, L. L. (2010). Child health and young adult outcomes. *Journal of Human Resources*, *45*(3), 517–548. <https://doi.org/10.1353/jhr.2010.0013>
- Daley, D., & Birchwood, J. (2010). ADHD and academic performance: Why does ADHD impact on academic performance and what can be done to support ADHD children in the classroom? *Child: Care, Health and Development*, *36*(4), 455–464. <https://doi.org/10.1111/j.1365-2214.2009.01046.x>

- Dalsgaard, S., Mortensen, P. B., Frydenberg, M., & Thomsen, P. H. (2013). Long-term criminal outcome of children with attention deficit hyperactivity disorder. *Criminal Behaviour and Mental Health, 23*(2), 86-98. <https://doi.org/10.1002/cbm.1860>
- Davis, J. E. (2006). How medicalization lost its way. *Society, 43*(6), 51–56. <https://doi.org/10.1007/bf02698486>
- Davis, J. E. (2009). Medicalization, Social Control, and the Relief of Suffering. In *The New Blackwell Companion to Medical Sociology* (pp. 211–241). essay, Blackwell Publishing Ltd.
- DiBattista, D., & Shepherd, M.-L. (1993). Primary school teachers' beliefs and advice to parents concerning sugar consumption and activity in children. *Psychological Reports, 72*(1), 47–55. <https://doi.org/10.2466/pr0.1993.72.1.47>
- Dumas, G. R. (2011). *The prevalence of ADHD symptoms among female juvenile delinquents* [Master's thesis] University of The West Indies
- DuPaul, G. J., & Volpe, R. J. (2009a). ADHD and learning disabilities: Research findings and clinical implications. *Current Attention Disorders Reports, 1*(4), 152–155. <https://doi.org/10.1007/s12618-009-0021-4>
- Edmunds, A., & Martsch-Litt, S. (2008). ADHD assessment and diagnosis in Canada: An inconsistent but fixable process. *Exceptionality Education International, 18*(2). <https://doi.org/10.5206/eei.v18i2.7621>

Fletcher, J., & Wolfe, B. (2008). Child mental health and human capital accumulation:

The case of ADHD revisited. *Journal of Health Economics*, 27(3), 794–800.

<https://doi.org/10.1016/j.jhealeco.2007.10.010>

Fog, A. (2022). Two-dimensional models of cultural differences: Statistical and

theoretical analysis. *Cross-Cultural Research*, 57(2–3), 115–165.

<https://doi.org/10.1177/10693971221135703>

Frazier, T. W., Youngstrom, E. A., Glutting, J. J., & Watkins, M. W. (2007). ADHD and

achievement. *Journal of Learning Disabilities*, 40(1), 49–65.

<https://doi.org/10.1177/00222194070400010401>

French, B., Daley, D., Groom, M., & Cassidy, S. (2023). Risks associated with

undiagnosed ADHD and/or autism: A mixed-method systematic review. *Journal of Attention Disorders*, 27(12), 1393–1410.

<https://doi.org/10.1177/10870547231176862>

Fried, R., Petty, C., Faraone, S. V., Hyder, L. L., Day, H., & Biederman, J. (2013). Is

ADHD a risk factor for high school dropout? A controlled study. *Journal of*

*Attention Disorders*, 20(5), 383–389. <https://doi.org/10.1177/1087054712473180>

Galéra, C., Bouvard, M.-P., Lagarde, E., Michel, G., Touchette, E., Fombonne, E., &

Melchior, M. (2012). Childhood attention problems and socioeconomic status in adulthood: 18-year follow-up. *British Journal of Psychiatry*, 201(1), 20–25.

<https://doi.org/10.1192/bjp.bp.111.102491>

- Ghanizadeh, A., Bahredar, M. J., & Moeini, S. R. (2006). Knowledge and attitudes towards attention deficit hyperactivity disorder among elementary school teachers. *Patient Education and Counseling*, 63(1–2), 84–88.  
<https://doi.org/10.1016/j.pec.2005.09.002>
- Glissant, E., & Wing, B. (2021). *Poetics of relation*. University of Michigan Press.
- Gonzalez, R. A., Gudjonsson, G., Wolff, K., Xenitidis, K., Mutch, L., Mallet-Lambert, I., Levin, F. R., & Young, S. (2017). The pathway to substance misuse for young people with ADHD and conduct disorder. *Drug and Alcohol Dependence*, 171.  
<https://doi.org/10.1016/j.drugalcdep.2016.08.215>
- Government of Canada. (2007, August 15). *Guide for Assessing Persons with Disabilities - How to determine and implement assessment accommodations - Determining and implementing assessment accommodations*. Guide for Assessing Persons with Disabilities. <https://www.canada.ca/en/public-service-commission/services/public-service-hiring-guides/guide-assessing-persons-disabilities/guide-assessing-persons-disabilities/guide-assessing-persons-disabilities-determine-implement-assessment-accommodations-determining-implementing-assessment-accommodations.html>
- Government of the Republic of Trinidad and Tobago. (2016, February). *Food and Drugs Act*. Ministry of Trade and Industry. <https://tradeind.gov.tt/wp-content/uploads/2016/02/Food-and-Drugs-Act-30.01.pdf>
- Government of the Republic of Trinidad and Tobago. (2019, August). *The Food and Drugs Act, Chapter 30:01 Notification: Approval in Respect of New Drugs*.

Trinidad and Tobago Government News. [https://news.gov.tt/sites/default/files/E-Gazette/Gazette 2019/Legal Notices](https://news.gov.tt/sites/default/files/E-Gazette/Gazette%202019/Legal%20Notices)

Greenhalgh, S., Lock, M., & Kaufert, P. A. (1998). Pragmatic women and body politics. *Population and Development Review*, 24(2), 404.  
<https://doi.org/10.2307/2807990>

Halfmann, D. (2011). Recognizing medicalization and demedicalization: Discourses, practices, and identities. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, 16(2), 186–207.  
<https://doi.org/10.1177/1363459311403947>

Hickling, F. W., Gibson, R. C., & Hutchinson, G. (2013). Current research on transcultural psychiatry in the anglophone Caribbean: Epistemological, public policy, and epidemiological challenges. *Transcultural Psychiatry*, 50(6), 858–875.  
<https://doi.org/10.1177/1363461513508806>

Hoogman, M., Bralten, J., Hibar, D. P., Mennes, M., Zwiers, M. P., Schweren, L. S., van Hulzen, K. J., Medland, S. E., Shumskaya, E., Jahanshad, N., Zeeuw, P. de, Szekely, E., Sudre, G., Wolfers, T., Onnink, A. M., Dammers, J. T., Mostert, J. C., Vives-Gilabert, Y., Kohls, G., ... Franke, B. (2017). Subcortical brain volume differences in participants with attention deficit hyperactivity disorder in children and adults: A cross-sectional mega-analysis. *The Lancet Psychiatry*, 4(4), 310–319.  
[https://doi.org/10.1016/s2215-0366\(17\)30049-4](https://doi.org/10.1016/s2215-0366(17)30049-4)

- Hoogman, M., Muetzel, R., Guimaraes, J. P., Shumskaya, E., Mennes, M., Zwiers, M. P., Jahanshad, N., Sudre, G., Wolfers, T., Earl, E. A., Soliva Vila, J. C., Vives-Gilabert, Y., Khadka, S., Novotny, S. E., Hartman, C. A., Heslenfeld, D. J., Schweren, L. J. S., Ambrosino, S., Oranje, B., ... Franke, B. (2019). Brain imaging of the cortex in ADHD: A coordinated analysis of large-scale clinical and population-based samples. *American Journal of Psychiatry*, *176*(7), 531–542. <https://doi.org/10.1176/appi.ajp.2019.18091033>
- Hutchinson, G., Neehall, J. E., Simeon, D. T., & Littlewood, R. (1999). Perceptions about mental illness among pre-clinical medical students in Trinidad & Tobago. *The West Indian medical journal*, *48*(2), 81–84.
- Jangmo, A., Stålhandske, A., Chang, Z., Chen, Q., Almqvist, C., Feldman, I., Bulik, C. M., Lichtenstein, P., D’Onofrio, B., Kuja-Halkola, R., & Larsson, H. (2019). Attention-deficit/hyperactivity disorder, school performance, and effect of medication. *Journal of the American Academy of Child & Adolescent Psychiatry*, *58*(4), 423–432. <https://doi.org/10.1016/j.jaac.2018.11.014>
- Jarque S., Tárraga R., & Miranda A. (2007). Conocimientos, concepciones erróneas y lagunas de los maestros sobre el trastorno por déficit de atención con hiperactividad [Teachers’ knowledge, misconceptions, and lacks concerning attention deficit hyperactivity disorder]. *Psicothema*, *19*, 585–590.
- Jones, H. A., & Chronis-Tuscano, A. (2008). Efficacy of teacher in-service training for attention-deficit/hyperactivity disorder. *Psychology in the Schools*, *45*(10), 918–929. <https://doi.org/10.1002/pits.20342>

Kang, J., Lin, H., & Chung, S. (2013). Attention-deficit/hyperactivity disorder increased the risk of injury: A population-based follow-up study. *Acta Paediatrica*, *102*(6), 640–643. <https://doi.org/10.1111/apa.12213>

Kaye, S., Darke, S., & Torok, M. (2013). Attention deficit hyperactivity disorder (ADHD) among illicit psychostimulant users: A hidden disorder? *Addiction*, *108*(5), 923–931. <https://doi.org/10.1111/add.12086>

Kirmayer, L. J. (2006). Culture and psychotherapy in a creolizing world. *Transcultural Psychiatry*, *43*(2), 163–168. <https://doi.org/10.1177/1363461506064846>

Kos, J. M., Richdale, A. L., & Jackson, M. S. (2004). Knowledge about attention-deficit/hyperactivity disorder: A comparison of in-service and Preservice Teachers. *Psychology in the Schools*, *41*(5), 517–526. <https://doi.org/10.1002/pits.10178>

Küpper, T., Haavik, J., Drexler, H., Ramos-Quiroga, J. A., Wermelskirchen, D., Prutz, C., & Schauble, B. (2012). The negative impact of attention-deficit/hyperactivity disorder on occupational health in adults and adolescents. *International Archives of Occupational and Environmental Health*, *85*(8), 837–847. <https://doi.org/10.1007/s00420-012-0794-0>

Lapatin, S., Gonçalves, M., Nillni, A., Chavez, L., Quinn, R. L., Green, A., & Alegría, M. (2011). Lessons from the use of vignettes in the study of Mental Health Service Disparities. *Health Services Research*, *47*(3pt2), 1345–1362. <https://doi.org/10.1111/j.1475-6773.2011.01360.x>

- Larson, K., Russ, S. A., Kahn, R. S., & Halfon, N. (2011). Patterns of comorbidity, functioning, and service use for US children with ADHD, 2007. *Pediatrics*, *127*(3), 462–470. <https://doi.org/10.1542/peds.2010-0165>
- Lichtenstein, P., Halldner, L., Zetterqvist, J., Sjölander, A., Serlachius, E., Fazel, S., Långström, N., & Larsson, H. (2012). Medication for attention deficit-hyperactivity disorder and criminality. *New England Journal of Medicine*, *367*(21), 2006–2014. <https://doi.org/10.1056/NEJMoa1203241>
- Loutoo, J. (2022, May 5). *Judge: Teachers can't use corporal punishment as discipline*. Trinidad and Tobago Newsday. <https://newsday.co.tt/2022/05/03/judge-teachers-cant-use-corporal-punishment-as-discipline/>
- Maia, C. R., Stella, S. F., Mattos, P., Polanczyk, G. V., Polanczyk, C. A., & Rohde, L. A. (2015). The Brazilian policy of withholding treatment for ADHD is probably increasing health and social costs. *Revista Brasileira de Psiquiatria*, *37*(1), 67–70. <https://doi.org/10.1590/1516-4446-2014-1378>
- Malacrida, C., & Semach, T. (2018). In the Elephant's Shadow: The Canadian ADHD Context. In *Global perspectives on ADHD: social dimensions of diagnosis and treatment in 16 countries* (pp. 34–53). essay, Johns Hopkins University Press.
- Mannuzza, S., Klein, R. G., Bessler, A., Malloy, P., & Hynes, M. E. (2001). Educational and occupational outcome of hyperactive boys grown up. *Attention Deficit Hyperactivity Disorders*, 102–107. <https://doi.org/10.4324/9781315054315-8>

- Mannuzza, S., Klein, R. G., Bessler, A., Malloy, P., & LaPadula, M. (1993). Adult outcome of hyperactive boys. Educational achievement, occupational rank, and psychiatric status. *Archives of general psychiatry*, *50*(7), 565–576.  
<https://doi.org/10.1001/archpsyc.1993.01820190067007>
- Meza, J. I., Monroy, M., Ma, R., & Mendoza-Denton, R. (2019). Stigma and attention deficit/hyperactivity disorder: Negative perceptions and anger emotional reactions mediate the link between active symptoms and social distance. *ADHD Attention Deficit and Hyperactivity Disorders*, *11*(4), 373–382. <https://doi.org/10.1007/s12402-019-00302-x>
- Morgan, P. L., Staff, J., Hillemeier, M. M., Farkas, G., & Maczuga, S. (2013). Racial and ethnic disparities in ADHD diagnosis from kindergarten to eighth grade. *Pediatrics*, *132*(1), 85–93. <https://doi.org/10.1542/peds.2012-2390>
- Morris, J.A., & Joseph, A. (2001). Newly qualified teachers in Trinidad and Tobago: Impact on/interaction with the system.
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, *100*(4), 674–701.  
<https://doi.org/10.1037//0033-295x.100.4.674>
- Murguía, A., Ordorika, T., & Lendo, L. F. (2016). El Estudio de los procesos de Medicalización en América Latina. *História, Ciências, Saúde-Manguinhos*, *23*(3), 635–651. <https://doi.org/10.1590/s0104-59702016005000009>
- Faraone, S. V., Banaschewski, T., Coghill, D., Zheng, Y., Biederman, J., Bellgrove, M. A.,

- Newcorn, J. H., Gignac, M., Al Saud, N. M., Manor, I., Rohde, L. A., Yang, L., Cortese, S., Almagor, D., Stein, M. A., Albatti, T. H., Aljouidi, H. F., Alqahtani, M. M. J., Asherson, P., ... Wang, Y. (2021a). The World Federation of ADHD International Consensus Statement: 208 evidence-based conclusions about the disorder. *Neuroscience & Biobehavioral Reviews*, *128*, 789–818.  
<https://doi.org/10.1016/j.neubiorev.2021.01.022>
- Naya, N., Tsuji, T., Nishigaki, N., Sakai, C., Chen, Y., Jung, S., & Kosaka, H. (2021). The burden of undiagnosed adults with attention-deficit/hyperactivity disorder symptoms in Japan: A cross-sectional study. *Cureus*, *13*(11), e19615.  
<https://doi.org/10.7759/cureus.19615>
- Okumura, Y., Yamasaki, S., Ando, S., Usami, M., Endo, K., Hiraiwa-Hasegawa, M., Kasai, K., & Nishida, A. (2021). Psychosocial burden of undiagnosed persistent ADHD symptoms in 12-Year-Old children: A population-based birth cohort study. *Journal of Attention Disorders*, *25*(5), 636–645.  
<https://doi.org/10.1177/1087054719837746>
- Phillips, C. B. (2006). Medicine goes to school: Teachers as sickness brokers for ADHD. *PLoS Medicine*, *3*(4). <https://doi.org/10.1371/journal.pmed.0030182>
- Polanczyk, G., de Lima, M. S., Horta, B. L., Biederman, J., & Rohde, L. A. (2007). The worldwide prevalence of ADHD: A systematic review and meta-regression analysis. *American Journal of Psychiatry*, *164*(6), 942–948.  
<https://doi.org/10.1176/ajp.2007.164.6.942>

- Polanczyk, G., Rohde, L. A., Szobot, C., Schmitz, M., Montiel-Nava, C., & Bauermeister, J. J. (2008). ADHD treatment in Latin America and the Caribbean. *Journal of the American Academy of Child & Adolescent Psychiatry*, 47(6), 721–722.  
<https://doi.org/10.1097/chi.0b013e31816c0008>
- Possibilities Clinic. (2024, April 9). *ADD and ADHD testing and treatment: Across Ontario*. The Possibilities Clinic. <https://possibilitiesclinic.com/add-adhd-assessment-toronto/>
- Pratt, T. C., Cullen, F. T., Blevins, K. R., & Daigle, L. (2002). The relationship of attention deficit hyperactivity disorder to crime and delinquency: meta-analysis. *International Journal of Police Science & Management*, 4(4), 344-360.  
<https://doi.org/10.1350/ijps.4.4.344.10873>
- Ramkissoon, A. K., Donald, C., & Hutchinson, G. (2017). Supernatural versus medical: Responses to mental illness from undergraduate university students in Trinidad. *International Journal of Social Psychiatry*, 63(4), 330–338.  
<https://doi.org/10.1177/0020764017702412>
- Reznik, D. L., Murphy, J. W., & Belgrave, L. L. (2007). Globalisation and Medicine in Trinidad. *Sociology of Health & Illness*, 29(4), 536–550.  
<https://doi.org/10.1111/j.14679566.2007.01000.x>
- Robb, J. A., Sibley, M. H., Pelham, W. E., Michael Foster, E., Molina, B. S., Gnagy, E. M., & Kuriyan, A. B. (2011). The estimated annual cost of ADHD to the US

Education System. *School Mental Health*, 3(3), 169–177.

<https://doi.org/10.1007/s12310-011-9057-6>

Rohde, L. A. (2002). ADHD in Brazil: The DSM-IV criteria in a culturally different population. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41(9), 1131–1133. <https://doi.org/10.1097/00004583-200209000-00014>

Rubia, K., Alegria, A. A., Cubillo, A. I., Smith, A. B., Brammer, M. J., & Radua, J. (2014). Effects of stimulants on brain function in attention-deficit/hyperactivity disorder: A systematic review and meta-analysis. *Biological Psychiatry*, 76(8), 616–628. <https://doi.org/10.1016/j.biopsych.2013.10.016>

Savolainen, J., Hurtig, T. M., Ebeling, H. E., Moilanen, I. K., Hughes, L. A., & Taanila, A. M. (2010). Attention deficit hyperactivity disorder (ADHD) and criminal behaviour: The role of adolescent marginalization. *European Journal of Criminology*, 7(6), 442-459. <https://doi.org/10.1177/1477370810376568>

Sax, L. (2003). Who first suggests the diagnosis of attention-deficit/hyperactivity disorder? *The Annals of Family Medicine*, 1(3), 171–174. <https://doi.org/10.1370/afm.3>

Schnittker, J. (2013). Handbook of the sociology of mental health (C. S. Aneshensel, J. C. Phelan, & A. Bierman, Eds.). Dordrecht, The Netherlands: Springer Netherlands. <https://doi.org/10.1007/978-94-007-4276-5>

- Schnittker, J. (2003). Misgivings of medicine? African Americans' skepticism of psychiatric medication. *Journal of Health and Social Behavior*, 44(4), 506.  
<https://doi.org/10.2307/1519796>
- Scheffler, R. M., Hinshaw, S. P., Modrek, S., & Levine, P. (2007). The global market for ADHD medications. *Health Affairs*, 26(2), 450–457.  
<https://doi.org/10.1377/hlthaff.26.2.450>
- Sciutto, M. J., Terjesen, M. D., & Frank, A. S. (2000). Teachers' knowledge and misperceptions of attention-deficit/hyperactivity disorder. *Psychology in the Schools*, 37(2), 115–122. [https://doi.org/10.1002/\(sici\)1520-6807\(200003\)37:2<115::aid-pits3>3.0.co;2-5](https://doi.org/10.1002/(sici)1520-6807(200003)37:2<115::aid-pits3>3.0.co;2-5)
- Slagboom, M. N., Bröer, C., & Berg, J. (2021). Negotiating ADHD: Pragmatic medicalization and creolization in urban India. *Social Science & Medicine*, 289, 114400. <https://doi.org/10.1016/j.socscimed.2021.114400>
- Soroa, M., Balluerka, N., & Gorostiaga, A. (2012). Evaluation of the level of knowledge of infant and primary school teachers with respect to the attention deficit hyperactivity disorder (ADHD): Content validity of a newly created questionnaire. *Contemporary Trends in ADHD Research*. <https://doi.org/10.5772/29093>
- Soroa, M., Gorostiaga, A., & Balluerka, N. (2013). Review of tools used for assessing teachers' level of knowledge with regards attention deficit hyperactivity disorder (ADHD). *Attention Deficit Hyperactivity Disorder in Children and Adolescents*. <https://doi.org/10.5772/54277>

- Soroa, M., Balluerka, N., & Gorostiaga, A. (2014). Measuring teachers' knowledge of attention deficit hyperactivity disorder: The MAE-TDAH questionnaire. *The Spanish Journal of Psychology, 17*. <https://doi.org/10.1017/sjp.2014.75>
- The Jamovi Project (2022). *Jamovi*. (Version 2.3) [Computer Software]. Retrieved from <https://www.jamovi.org>.
- Tsuji, N., Okada, T., Usami, M., Kuwabara, H., Fujita, J., Negoro, H., Kawamura, M., Iida, J., & Saito, T. (2020). Effect of continuing and discontinuing medications on quality of life after symptomatic remission in attention-deficit/hyperactivity disorder. *The Journal of Clinical Psychiatry, 81*(3). <https://doi.org/10.4088/jcp.19r13015>
- Williams, E. E. (2010). *From Columbus to Castro the history of the Caribbean, 1492-1969*. A. Deutsch.
- Willcutt, E. G., Betjemann, R. S., McGrath, L. M., Chhabildas, N. A., Olson, R. K., DeFries, J. C., & Pennington, B. F. (2010). Etiology and neuropsychology of comorbidity between RD and ADHD: The case for multiple-deficit models. *Cortex, 46*(10), 1345–1361. <https://doi.org/10.1016/j.cortex.2010.06.009>
- Wolraich, M. L., Hagan, J. F., Allan, C., Chan, E., Davison, D., Earls, M., Evans, S. W., Flinn, S. K., Froehlich, T., Frost, J., Holbrook, J. R., Lehmann, C. U., Lessin, H. R., Okechukwu, K., Pierce, K. L., Winner, J. D., & Zurhellen, W. (2019). Clinical practice guideline for the diagnosis, evaluation, and treatment of attention

deficit/hyperactivity disorder in children and adolescents. *Pediatrics*, *144*(4).

<https://doi.org/10.1542/peds.2019-2528>

Wood, W. L. M., Lewandowski, L. J., & Lovett, B. J. (2021). Profiles of diagnosed and undiagnosed college students meeting ADHD symptom criteria. *Journal of Attention Disorders*, *25*(5), 646–656. <https://doi.org/10.1177/1087054718824991>

Worrell, F., Watkins, M., & Hall, T. (2006). Primary School Teachers in Trinidad and Tobago. In *Crosscurrents and Crosscutting Themes* (pp. 129–146). essay, Information Age Publishing.

Yaser, A., Slewa-Younan, S., Smith, C. A., Olson, R. E., Guajardo, M. G., & Mond, J. (2016). Beliefs and knowledge about post-traumatic stress disorder amongst resettled Afghan refugees in Australia. *International Journal of Mental Health Systems*, *10*(1). <https://doi.org/10.1186/s13033-016-0065-7>

Yoshimasu, K., Barbaresi, W. J., Colligan, R. C., Voigt, R. G., Killian, J. M., Weaver, A. L., & Katusic, S. K. (2012). Childhood ADHD is strongly associated with a broad range of psychiatric disorders during adolescence: a population-based birth cohort study. *Journal of child psychology and psychiatry, and allied disciplines*, *53*(10), 1036–1043. <https://doi.org/10.1111/j.1469-7610.2012.02567.x>

Young, S. J., Adamou, M., Bolea, B., Gudjonsson, G., Müller, U., Pitts, M., . . . Asherson, P. (2011). The identification and management of ADHD offenders within the criminal justice system: A consensus statement from the UK Adult ADHD network and criminal justice agencies. *BMC Psychiatry*, *11*(1). <https://doi.org/10.1186/1471-244X-11-32>

- Young, S., González, R. A., Fridman, M., Hodgkins, P., Kim, K., & Gudjonsson, G. H. (2018). The economic consequences of attention-deficit hyperactivity disorder in the Scottish prison system. *BMC psychiatry*, *18*(1), 210.  
<https://doi.org/10.1186/s12888-018-1792-x>
- Youssef, M. K., Hutchinson, G., & Youssef, F. F. (2015). Knowledge of and attitudes toward ADHD among teachers. *SAGE Open*, *5*(1), 215824401456676.  
<https://doi.org/10.1177/2158244014566761>

## Appendices

### Appendix A: Letter of Information and Consent (Canada)



## Cross-Cultural Child Wellness

### Welcome to the Study!

Thank you for your interest in our study on perceptions of children's behaviour and well-being. To participate, you must be living in Canada and be a parent or educator of school-aged children (ages 4 to 17). The study will be completed online and take approximately **30 minutes** to complete.

To begin, please read the Letter of Information on the following page.



## Letter of Information

**Title of Research:** A Cross-Cultural Investigation of Child Well-Being

### **Principal Investigator:**

Dr. J. Bruce Morton  
Brain and Mind Institute  
Department of Psychology, Western University  
Cognitive Development and Neuroimaging Lab

### **1. Purpose of the Study**

Dr. J. Bruce Morton and his research team invite you to participate in a study investigating how perceptions of children's behaviour may differ across cultures. We hope to develop a better understanding of how cultural factors impact perspectives on children's wellness in Canada and other multicultural nations around the world. You are being asked to participate because you are a parent or educator to children between the ages of 4 and 17. To participate, you must live in Canada, be fluent in English, and have access to a device with an internet connection. This study is completely voluntary and all information you provide will be kept confidential.

### **2. Study Procedure**

The study will be completed online using your personal computer. You will be asked to complete a brief questionnaire about yourself and your family, and two questionnaires about your thoughts and attitudes regarding children's behaviour and well-being. You will also be presented with four brief stories describing a child's behaviour and some questions about your thoughts on each story. **The study will take approximately 30 minutes to complete** and you can enter to **win 1 of 3 \$50 gift cards** to Amazon.ca.

### **3. Voluntary Participation**

Your participation in the study is voluntary. Even if you consent to participate, you have the right to skip any question you do not wish to answer and to withdraw from the study at any time without penalty. You do not waive any legal rights by consenting to participate.



#### **4. Possible Risks and Benefits**

You will not directly benefit from participating in the study. However, your participation will provide insight for researchers who study children's wellness and may advance society's knowledge in the future. There are no direct risks to participating in this study. Some questionnaire items ask about personal information and may be sensitive in nature. You have the right to skip any items you do not wish to answer. All information collected in the study will be associated with a unique ID code and not with your name or any information that could identify you.

#### **5. Withdrawal from the Study**

If you no longer want to participate in this research, you may terminate the study at any time. If you complete the study and decide later that you do not want your data to be used in this research, you can contact Samantha Goldsmith or Dr. J. Bruce Morton and ask that your data be removed. Your data cannot be removed from group analyses that have already been published, but your data will not be used in any future analyses.

#### **6. Inclusion/Exclusion Criteria**

Adults who have a school-aged child or who work as an educator of school-aged children are eligible to participate in the study. You must be living in Canada, fluent in English, and have access to a device with an internet connection.

#### **7. Compensation**

Your participation in this study is voluntary and you will not be directly compensated. At the end of the study, you may provide your email address to be entered into a draw for a chance to win 1 of 3 \$50 Amazon gift cards.



## **8. Confidentiality**

Your results will be kept confidential and will only be used for research purposes. All of the information you provide will be paired with a unique participant code which you will create at the beginning of the study. This code is necessary for removing your data from the dataset if requested in the future. No identifying information, such as your name or date of birth, will be collected in this study. If you choose to provide your email address to enter the draw, it will be stored separately from your study data and destroyed immediately after the draw is completed. We will not publish any of your individual data; we will only publish group data and trends. Group-level trends from this study will be compared with similar data collected in other countries to explore cross-cultural differences. You can request a copy of the results from this study by contacting the researchers at any time.

It is important to note that nothing collected over the internet is 100% secure. However, steps will be taken to protect your information as much as possible. Information will be collected and stored via Qualtrics - a secure online server which uses encryption technology and restricted access authorizations to protect all data. Western's Qualtrics server is located in Ireland, where privacy standards are maintained appropriately (see <https://www.qualtrics.com/privacy-statement/>). Your data will be downloaded from Qualtrics by the researchers and stored on secure, password- and firewall-protected servers at Western University, after which it will be permanently deleted from the Qualtrics platform. All data will be retained for a minimum of 7 years. Your data will be anonymized by replacing your participant code with an alternative code. The anonymized data may be used in future publications, presentations, and collaborations with other researchers. The study may also be uploaded to the Open Science Framework, which will allow other researchers to inspect and analyze the anonymized data. As such, your data may be retained indefinitely and could be used to answer new research questions in the future. Any data shared to the Open Science Framework or in future publications will not contain any information that can identify you.

Please note: Representatives of the Western University Non-Medical Research Ethics Board may require access to your study-related records to monitor the conduct of our research.



### **9. Contacts for Further Information**

Thank you for taking the time to read this letter of information. If you have any further questions concerning this study or would like a copy of this letter, please contact Samantha Goldsmith or Dr. J. Bruce Morton. You may also contact our research lab.

If you have any questions about the conduct of this study or your rights as a research participant, you may contact the Office of Human Research Ethics at Western University.



**Consent Statement:**

I have read the Letter of Information and had all questions answered to my satisfaction. I understand the nature of the study and am aware that I can leave the study at any time. Clicking "**I Agree**" means that I consent to participate in this study.

I Agree

I Do Not Agree

---

## Appendix B: Letter of Information and Consent (Trinidad & Tobago)



### Welcome to the Study!

Thank you for your interest in our study on perceptions of children's behaviour and well-being. To participate, you must be living in Trinidad & Tobago and be a parent or educator of school-aged children (ages 4- to 17- years-old). The study will take approximately **30 minutes** to complete.

To begin, please read the Letter of Information on the following page.



## Letter of Information

**Title of Research:** A Cross-Cultural Investigation of Child Well-Being

**Principal Investigator:**

Dr. J. Bruce Morton  
Brain and Mind Institute  
Department of Psychology, Western University  
Cognitive Development and Neuroimaging Lab

### 1. Purpose of the Study

Dr. J. Bruce Morton and his research team invite you to participate in a study investigating how perceptions of children's behaviour may differ across cultures. We hope to develop a better understanding of how cultural factors impact perspectives on children's wellness in Trinidad & Tobago and other multicultural nations around the world. You are being asked to participate because you are a parent or educator to children between the ages of 4 and 17. To participate, you must live in Trinidad & Tobago, be fluent in English, and have access to a device with an internet connection. This study is completely voluntary and all information you provide will be kept confidential.

### 2. Study Procedure

The study will be completed online using your personal computer. You will be asked to complete a brief questionnaire about yourself and your family, and two questionnaires about your thoughts and attitudes regarding children's behaviour and well-being. You will also be presented with four brief stories describing a child's behaviour and some questions about your thoughts on each story. **The study will take approximately 30 minutes to complete** and you can enter to **win 1 of 3 \$50 gift cards** for Amazon.com.

### 3. Voluntary Participation

Your participation in the study is voluntary. Even if you consent to participate, you have the right to skip any question you do not wish to answer and to withdraw from the study at any time without penalty. You do not waive any legal rights by consenting to participate.



#### **4. Possible Risks and Benefits**

You will not directly benefit from participating in the study. However, your participation will provide insight for researchers who study children's wellness and may advance society's knowledge in the future. There are no direct risks to participating in this study. Some questionnaire items ask about personal information and may be sensitive in nature. You have the right to skip any items you do not wish to answer. All information collected in the study will be associated with a unique ID code and not with your name or any information that could identify you.

#### **5. Withdrawal from the Study**

If you no longer want to participate in this research, you may terminate the study at any time. If you complete the study and decide later that you do not want your data to be used in this research, you can contact Ronald Auguste or Dr. J. Bruce Morton and ask that your data be removed. Your data cannot be removed from group analyses that have already been published, but your data will not be used in any future analyses.

#### **6. Inclusion/Exclusion Criteria**

Adults who have a school-aged child or who work as an educator of school-aged children are eligible to participate in the study. You must be living in Trinidad & Tobago, fluent in English, and have access to a device with an internet connection.

#### **7. Compensation**

Your participation in this study is voluntary and you will not be directly compensated. At the end of the study, you may provide your email address to be entered into a draw for a chance to win 1 of 3 \$50 Amazon gift cards.

#### **8. Confidentiality**

Your results will be kept confidential and will only be used for research purposes. All of the information you provide will be paired with a unique participant code which you will create at the beginning of the study. This code is necessary for removing your data from the dataset if requested in the future. No identifying information, such as your name or date of birth, will be collected in this study. If you choose to provide your email address to enter the draw, it will be stored separately from your study data and destroyed immediately after the draw is completed. We will not publish any of your individual data; we will only publish group data and trends. Group-level trends from this study will be compared with similar data collected in other countries to explore cross-cultural differences. You can request a copy of the results from this study by contacting the researchers at any time.



It is important to note that nothing collected over the internet is 100% secure. However, steps will be taken to protect your information as much as possible. Information will be collected and stored via Qualtrics - a secure online server which uses encryption technology and restricted access authorizations to protect all data. Western's Qualtrics server is located in Ireland, where privacy standards are maintained appropriately (see <https://www.qualtrics.com/privacy-statement/>). Your data will be downloaded from Qualtrics by the researchers and stored on secure, password- and firewall-protected servers at Western University, after which it will be permanently deleted from the Qualtrics platform. All data will be retained for a minimum of 7 years. Your data will be anonymized by replacing your participant code with an alternative code. The anonymized data may be used in future publications, presentations, and collaborations with other researchers. The study may also be uploaded to the Open Science Framework, which will allow other researchers to inspect and analyze the anonymized data. As such, your data may be retained indefinitely and could be used to answer new research questions in the future. Any data shared to the Open Science Framework or in future publications will not contain any information that can identify you.

Please note: Representatives of the Western University Non-Medical Research Ethics Board may require access to your study-related records to monitor the conduct of our research.

#### **9. Contacts for Further Information**

Thank you for taking the time to read this letter of information. If you have any further questions concerning this study or would like a copy of this letter, please contact Ronald Auguste or Dr. J. Bruce Morton. You may also contact our research lab.

If you have any questions about the conduct of this study or your rights as a research participant, you may contact the Office of Human Research Ethics at Western University.

**Consent Statement:**

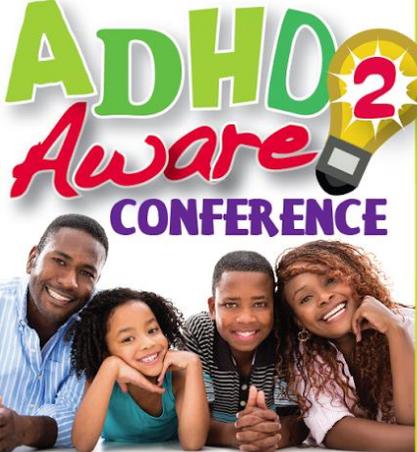
I have read the Letter of Information and had all questions answered to my satisfaction. I understand the nature of the study and am aware that I can leave the study at any time. Clicking "**I Agree**" means that I consent to participate in this study.

I Agree

I Do Not Agree

---

## Appendix C: Flyers for the ADHD Foundation of Trinidad & Tobago Conferences



**ADHD  
Aware  
CONFERENCE**

**SATURDAY 18TH OCTOBER, 2014**  
8:30 AM – 2:30 PM  
**ARTHUR LOK JACK  
GRADUATE SCHOOL OF BUSINESS**  
Max Richards Drive, Uriah Butler Highway North West, Mt. Hope

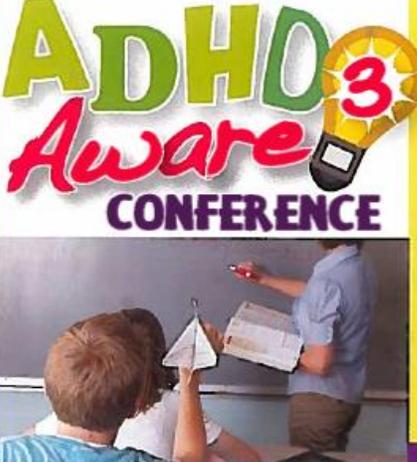
This event will foster ADHD/ADD Sensitization and Awareness for **teachers/educators, parents, adults identified with ADHD** and other significant stakeholders.

Presenting, will be a panel of local and international experts in the area of ADHD/ADD, including Ben Glenn author of "Simply Special: Learning to Love Your ADHD" and "Understanding the Peaks and Pitfalls of ADHD in the Classroom". Ben has been a full-time speaker since 1995, presenting all over the world. His story of growing up with Learning Disabilities and ADHD, as well as his amazing live art demonstration that he performs as part of his presentation, combine into a powerful as well as entertaining program.

**TICKETS**  
**\$285**  
INCLUDES LUNCH



**ADHD  
FOUNDATION  
OF TRINIDAD & TOBAGO**  
[www.adhdt.org](http://www.adhdt.org)



**ADHD  
Aware  
CONFERENCE**

**Saturday 13th May, 2017**  
8:30 am - 2:30 pm  
**Arthur Lok Jack Graduate School of Business**  
Max Richards Drive, Uriah Butler Highway North West, Mt. Hope

This event will foster a deeper appreciation and awareness for ADHD/ADD by **policy makers, educators, parents, adults identified with ADHD** and other significant stakeholders.

**BE DELIVERED FROM DISTRACTION!**

Our feature speaker, Dr. Edward Ned Hallowell is considered to be one of the foremost experts on ADHD. He co-authored, with Dr. Ratey, the book Driven to Distraction which has sold more than a million copies. Dr. Hallowell's most recent book, "Driven to Distraction at Work" identifies the underlying reasons why people lose their ability to focus. He explains that solutions like time management or to-do lists don't work because they ignore the true causes of mental distraction.

Dr. Hallowell will share practical solutions on how to negotiate your world more successfully with ADHD. Come Rediscover, Reconnect and Be More Productive!

**Tickets**  
**\$750**  
includes lunch



**ADHD  
FOUNDATION  
OF TRINIDAD & TOBAGO**

## Appendix D: Western University Initial REB Approval



**Date:** 10 February 2022

**To:** Prof. J Bruce Morton

**Project ID:** 120300

**Study Title:** Cross-Cultural Investigation of ADHD Knowledge and Attitudes

**Short Title:** Cross-Cultural Investigation of ADHD

**Application Type:** NMREB Initial Application

**Review Type:** Delegated

**Full Board Reporting Date:** 04/Mar/2022

**Date Approval Issued:** 10/Feb/2022 16:33

**REB Approval Expiry Date:** 10/Feb/2023

Dear Prof. J Bruce Morton,

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the above mentioned study, as of the date noted above. NMREB approval for this study remains valid until the expiry date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

This research study is to be conducted by the investigator noted above. **All other required institutional approvals and mandated training must also be obtained prior to the conduct of the study.**

**Documents Approved:**

Document Name	Document Type	Document Date	Document Version
CulturalStudyADHD_DemographicQuestionnaire	Online Survey	30/Nov/2021	1
CulturalStudyADHD_AttitudesQuestionnaire	Online Survey	30/Nov/2021	1
CulturalStudyADHD_KnowledgeQuestionnaire	Online Survey	30/Nov/2021	1
CulturalStudyADHD_ParentVignettes	Other Data Collection Instruments	30/Nov/2021	1
CulturalStudyADHD_FacebookPoster	Recruitment Materials	01/Dec/2021	1
CulturalStudyADHD_TeacherVignettes	Other Data Collection Instruments	30/Nov/2021	1
CulturalStudyADHD_DebriefMessage	Debriefing Letter	30/Nov/2021	1
CulturalStudyADHD_LOIConsent	Implied Consent/Assent	02/Feb/2022	2

No deviations from, or changes to the protocol should be initiated without prior written approval from the NMREB, except when necessary to eliminate immediate hazard(s) to study participants or when the change(s) involves only administrative or logistical aspects of the trial.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Ms. Katelyn Harris, Ms. Zoë Levi, Research Ethics Officer on behalf of Dr. Randal Graham, NMREB Chair

**Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).**

## Appendix E: University of the West Indies Initial CREC Approval



THE UNIVERSITY OF THE WEST INDIES  
ST. AUGUSTINE, TRINIDAD AND TOBAGO, WEST INDIES  
CAMPUS RESEARCH ETHICS COMMITTEE

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February, 23 2022

**Dr. J Bruce Morton, Gerard Hutchinson, Bea Goffin, Samantha Goldsmith, Hannah Ferrara,**  
Psychiatry Unit, Faculty of Medical Sciences,

Dear Dr. J Bruce Morton,

**Ref: CREC-SA.1228/11/2021**

**Title: Perceptions of Paediatric ADHD Among Parents and teachers**

I am pleased to advise that your application for research on the above captioned topic has been approved on behalf of Campus Research Ethics Committee, St. Augustine.

Approval is valid for one (1) year.

Sincerely,

Professor Jerome De Lisle  
Chair  
Campus Research Ethics Committee

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## Curriculum Vitae

Ronald Auguste

### Education

- 2022 – Present      **MSc. Candidate, Psychology (Cognitive, Developmental, and Brain Sciences)**
- University of Western Ontario, London, ON.
- Thesis: Perceptions of ADHD-Related Behaviours in Trinidad & Tobago and Canada: A Cross-Cultural Study
- Supervisor: Dr. J. Bruce Morton
- 2009 – 2012      **MSc., Counselling Psychology**
- University of the Southern Caribbean, Trinidad & Tobago
- Thesis: Work-Related Stress in the 21<sup>st</sup> Century Model of Policing in Trinidad and Tobago
- Supervisor: Dr. Rose Osuji
- 2004 – 2007      **BSc., Psychology and Economics**
- University of the West Indies, Trinidad & Tobago

### Conferences and Publications

Auguste, R. (2011, November). *The Effects of Low Detection Rates and Suppression-Oriented Policing on Criminal Behaviour*. The International Conference on Gangs, Violence and Governance. St. Augustine, Trinidad & Tobago

Auguste, R. & Hutchinson, G. (2021). *Reviewing the potential socio-economic impact of Attention Deficit Hyperactivity Disorder on crime and society: The Intersection of Individual Development and Public Wellness*. Caribbean Journal of Psychology

**Research Experience**

- 2022 – Present      **Graduate Student**  
University of Western Ontario  
Cognitive Development and Neuroimaging Lab  
Supervisor: Dr. J. Bruce Morton
- 2019 – 2021      **Research Assistant (Volunteer)**  
University of the West Indies  
Department of Psychiatry  
Supervisor: Dr G. Hutchinson
- 2007 – 2008      **Undergraduate Research Assistant**  
University of the West Indies  
Department of Economics  
Supervisors: Dr. R. Hosein and Mr. M. Franklin

**Awards**

- 2023      SSHRC Exchange Grant (\$5000)

**Teaching Experience**

- 2022 – Present      **Graduate Teaching Assistant**  
University of Western Ontario
- 2014 – 2018      **Adjunct Lecturer (Psychology and Social Work)**  
College of Science Technology and Applied Arts of Trinidad & Tobago

2010 – 2017            **Tutor (Psychology and Social Work)**  
University of the West Indies, Open Campus

**Professional Memberships and Certifications**

2023 – Present            **Registered Psychotherapist**  
College of Registered Psychotherapists of Ontario

2022 – Present            **Member**  
Ontario Association of Mental Health Professionals