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Teach or Treat: How do Teachers and Applied Behaviour Analysis Therapists in Hong Kong Conceptualise Autism?

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Abstract

Relatively scant research has been conducted on linking conceptualisations of autism to practice, especially in non-western contexts. To gain an in-depth understanding of how frontline staff for autistic students conceptualise autism in Hong Kong educational settings, 5 mainstream classroom teachers and 5 Applied Behaviour Analysis (ABA) therapists based in Hong Kong were virtually interviewed. The semi-structured interviews were coded using an abductive thematic analysis. It was found that teachers and ABA therapists in Hong Kong generally demonstrated a medical conceptualisation of autism while teachers showed a weaker understanding of autism and more negative attitudes towards autism. Moreover, therapists and teachers were also consistent in showing an ableist approach in instruction and intervention. These findings are subject to a small sample size. The findings of this study indicate an unchallenging deficit-based model of understanding autism in Hong Kong education and call for proactive interventions from the local government to shift the landscape of conceptualisations of autism to provide an equitable education for autistic students.

Keywords: autism, conceptualisation of autism, Applied Behaviour Analysis, teacher, Hong Kong

Introduction

Conceptualisations of autism have profound implications for intervention strategies for autistic individuals, as well as the reproduction of knowledge on autism (Milton, 2014). Despite their significance, the conceptualisations of autism have not been explicitly mentioned in autism research (Jacobs et al., 2019). Carthaigh (2019) argues that the tension between conceptualisations of autism have been concealed and therefore demonstrated a false consensus on the matter. Moreover, little research has been conducted in non-western contexts, which calls for this study to fill in this significant research gap. This following literature review will explore the key dimensions of conceptualisations of autism and within the context of Hong Kong, and how different conceptualisations of autism are related to the language used to describe autism. This exploration has implications for the development of autism interventions, and subsequently impacts the power dynamics in autism.

Conceptualisations of autism

DSM-5 and autism diagnosis

The latest diagnostic manual, DSM-5 (American Psychiatric Association, 2013) reduces autism into two behavioural domains: difficulties in social communication and having restricted, repetitive behaviours and interests (Lai et al., 2014). With the term 'Autism Spectrum Disorder,' it is evident that DSM-5 medicalises autism (Halfon & Kuo, 2013). Thus, the conceptualisation of autism framed by DSM-5 has profound implications for the language that practitioners use, clinical practices and interpretations of research (Skuse, 2012).

The medical model and neurodiversity

The medical model views autism as pathological and in need of cure (Lewin & Akhtar, 2020). The curative aim underpins a fundamental understanding of one standard normal human brain (Walker, 2013), perceiving autism as abnormal and a form of illness (Aylott & Dunn, 2003). The term 'Neurodiversity,' coined by Singer (1998), adopts the framework of the social model of disability to celebrate autism as 'a positive identity that need no cure' (Kapp et al., 2013, p.2). The social model of disability proposes that autism is perceived to be disabling because society discriminates against autistic individuals and fails to accommodate them (Oliver, 1996). The central idea of the social model is that all humans have different limitations and autism only becomes a disorder when social norms and structures stop them from functioning (Chapman, 2019). However, unlike the social model, neurodiversity recognises biological factors as the origins of autism (Arnold, 2017). Neurodiversity proposes autism as a 'natural human variation', thus should not be prevented and cured (Ortega, 2009).

Language of autism

The models of autism conceptualisation have mirrored the language used to describe autism (Monk et al., 2022). The medical model uses deficit language to describe autism (Bottema-Beutel et al., 2021). Medicalised terms, such as 'disorder,' suggest that the medical model adopts a deficit-based approach to conceptualising autism (Dinishak, 2016). 2010). Through the medical lens, autism is then labelled as 'abnormal' as it deviates from the constructed normalcy.

In contrast, neurodiversity replaces deficit language with neutral terms (Bottema-Beutel, 2021), describing autism as a 'condition.' It interprets autism as neurological 'differences or a 'disability' under unaccommodating environments (Mulvany, 2000). Neurodiversity also recognises the strengths of autism through describing the overall cognitive profiles of autistic individuals (Monk et al., 2022). This suggests that autism is conceptualised as a natural biological variation.

Moreover, the medical model also adopts a simplistic binary system to categorise autistic individuals according to their functioning level (Kenny et al., 2015). The term 'high functioning' is often specifically used to describe autism without moderate or severe intellectual disability as a co-occurring condition (Baron-Cohen, 2000). Over time, the term 'functioning level' has come to mean more than perceived intellectual ability: it is associated with a set of cognitive domains encompassing language skills and the severity of the autistic traits, (Alvares et al., 2019), with the assumption that perceived intellectual ability entails a better individual

functioning (Bottema-Beutel et al., 2021). The 'functioning level', however, has been shown to improve with age (Waizbard-Bartov et al., 2021), which suggests that the rigid and static label of one's 'functioning level' may not accurately reflect the potential of autistic individuals.

Given the differences in the language used, the interventions for autism also vary. For example, the term 'condition' encourages interventions that enhance the overall wellbeing of autistic students instead of treating autistic traits (Leadbitter et al., 2021). The emphasis on individual cognitive profile also recommends teachers to adopt strength-based learning, which allows teachers to link autistic students' strengths and interests to teaching various parts of the curriculum (Armstrong, 2012). Classroom accommodations such as creating a quiet and calming learning environment also helps autistic students to concentrate in class (Block, 2018).

Applied Behaviour Analysis as an intervention for autism

The term 'disorder,' suggests interventions with a corrective nature, such as Applied Behaviour Analysis (ABA). ABA is an example of treating autism, which attempts to reinforce 'good' behaviours and extinguish 'bad' behaviours through rewards and punishments. ABA is based on behaviourist theories such as conditioning and reinforcement (Kirkham, 2017). ABA also uses an A-B-C analysis to understand how behaviours are shaped: there is an antecedent (A) that precedes a behaviour (B), and a consequence (C) that follows the behaviour (Dyer, 2013).

Relationships with autism

Furthermore, the interventions for autism also have implications for the power dynamics within the autistic community. Treating and correcting autistic behaviour can be seen as disabling autism in a hegemonic neurotypical society by Chapman (2017). In this context, hegemony refers to a type of domination by the neurotypical people without exerting coercion or force (Houssay-Holzschuch, 2020). The social dynamics of power between neurotypical individuals and autistic people are unequal (Walter, 2013). As shown above, different conceptualisations of autism have far-reaching implications: language of autism used in diagnostic criteria impacts the way autism is conceptualised within different models and this, in turn, relates to the development of various autism interventions and therefore the differences in power dynamics in autism.

Autism in Hong Kong

However, the conceptualisations of typical behaviours vary across cultures and contexts (Akhtar & Jaswal, 2013). The majority of the autism research is conducted in western settings (de Leuuw et al., 2020), which limits our understanding of how autism is contextualised across cultures. Therefore, this paper is motivated to uncover the conceptualisation of autism under one specific culture – Hong Kong.

Autism in mainstream classrooms

In Hong Kong, autistic students with intellectual disability will be referred to special schools whereas autistic students with average or above intelligence will attend mainstream schools (EDB, 2015). A 3-Tier Intervention Model designed specifically for accommodating autistic students in mainstream classrooms has been implemented by the Education Bureau (EDB, 2015) (see Table 1). Teaching strategies include structuring a routine learning environment, providing visual cues and peer support, are recommended to deploy by teachers for autistic students (EDB, 2015).

Table 1

The 3-Tier Intervention Model designed by the Education Bureau (2015)

Tier	Interventions
1	In-class support with strategies and adjustments
2	Supplementary group training if autistic students are faced with persistent learning/adjustment difficulties
3	Intensive individual training

However, teachers in Hong Kong do not need to obtain special education training prior to teaching autistic students. The concern over teachers' lack of knowledge about autism is exemplified in the Chinese study by Liu et al. (2016), where 83% of the teachers incorrectly answered questions assessing knowledge of autism while they answered correctly of questions related to typical child development. Teachers are not necessarily equipped with the relevant experience and knowledge to adhere to the stipulated guidelines and accommodate autistic children with heterogenous conditions and learning needs.

Furthermore, teachers' attitudes towards autism are crucial to inclusion in mainstream classrooms (Park & Chitiyo, 2010). Teachers of autistic children in Hong Kong expressed a general negative view towards autistic children, and around one-third (32%) of the teachers and headmasters did not prefer teaching autistic students in mainstream classrooms (SESHK & HKPERA, 2006).

ABA in Hong Kong

The amount of contextualised research on ABA is minimal while ABA remains as a popular intervention in Hong Kong or China (Chang & Zaroff, 2017). The existing literature on ABA in Hong Kong is primary concerned with the efficacy of the treatment (e.g., Chang & Zaroff, 2017; Greenberg & Chung, 2019). The desirability of treating autistic individuals may be strong in Hong Kong, given that Hong Kong's collectivist culture Kong predicts a greater tendency to conform to social norms (Oh, 2013).

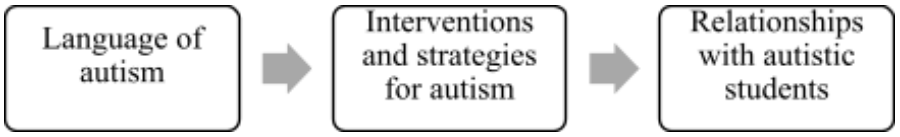
Aim of the current study

This study aims to understand the conceptualisations of autism by two groups of frontline workers for autism – ABA therapists and teachers from mainstream schools. These two groups represent two ends of the spectrum: mainstream teachers encounter more neurotypical students while therapists are more specialised in autism. To diversify the cultural voices in autism research, this research would collect primary data through conducting interviews in Hong Kong.

Given the research gap in directly addressing autism conceptualisations, there is currently a paucity of established framework that is relevant to the aim of our study. Therefore, this study devises a framework of dimensions in relation to the conceptualisations of autism, based on existing relevant research presented in the literature review. The interviews would be coded according to this framework.

Figure 1

A framework of dimensions related to conceptualisations of autism



Method

To understand the subjective perspectives and experiences of the participants in a specific cultural context, this study adopts an interpretivist approach to investigating different groups of conceptualisations of autism.

Participants

Using purposive sampling, ABA therapists and teachers from mainstream classrooms (n=10) (see Table 2) were recruited through Hong Kong ABA practitioner networks and online forums for teachers.

Table 2

Details of the participants and their students

Participant	Gender	Age of the autistic student(s)	Gender of the autistic students(s)
Teacher 1	F	7 - 9	Male
Teacher 2	F	9	Male
Teacher 3	M	10	Male
Teacher 4	F	8	Male
Teacher 5	F	12 - 16	Male
Therapist 1	M	3 - 7	Mostly Male
Therapist 2	F	3 - 9	Mostly Male
Therapist 3	F	10 - 11	Mostly Male
Therapist 4	F	2 - 10	Mostly Male
Therapist 5	F	2 - 9	Mostly Male

Procedure

Due to COVID-19, all interviews were conducted virtually, and lasted no more than 10 minutes to ensure the success of the recruitment process. All interviews were audio-recorded for the later stage of transcription before analysis. Prior to the interviews, all participants expressed that they were comfortable with speaking English, therefore all interviews were conducted in English in order to simplify the process of transcription.

Semi-structured interviews were employed to allow discussions around specific areas regarding conceptualisations of autism, as well as in-depth inquiries to contextualise the responses (Adams, 2015). The interviews consisted of 10 open-ended and non-leading questions as a guide. They started with general questions, then narrowed down to questions with more specific areas. Participants were first asked about their general understanding of autism to understand what language participants used in describing autism, then moved on to the interventions and strategies to help their autistic, then finally the relationship between the participants and their autistic students.

Data analysis

As literature has suggested relevant themes regarding the conceptualisations of autism, certain major themes emerged prior to conducting the interviews. On the other hand, unanticipated subthemes might emerge from the transcript. As a result, to balance between existing literature and data, an abductive thematic analysis, which combines induction and deduction, was adopted instead to draw on existing knowledge while also exploring new ideas. Moreover, abductive thematic analysis allows more flexibility to contextualise the empirical data, given the need to highlight the demographic of the participants in this study.

The six-phase guide to doing thematic analysis by Braun and Clarke (2006) was adapted to analyse the data step by step. The original guide proposed by Braun and Clarke (2006) is tailored for an inductive analysis, therefore it was altered to fit the model of analysis of this study (see Table 3).

Table 3

An adapted six-phase guide to thematic analysis by Braun and Clarke (2006)

Phase	Procedures
1	Reviewed the transcripts several times to familiarise with the data
2	Identified relevant areas of the data with the existing themes
3	Further identified interesting areas under each theme
4	Collated similar interesting areas into different codes
5	Identified potential subthemes among different codes
6	Specified and refine each theme and subtheme

Moreover, the themes were identified at a latent level, which attempted to examine the underlying assumptions and conceptualisations (Braun & Clarke, 2006). In contrast to a semantic approach, a latent approach explored ideas beyond the surface meanings, involving interpretations and not just description of the data. For latent themes, broader conceptualisations of autism were theorised based on what individuals responded. Therefore, another significance of analysing data at a latent level is that it is in line with a social constructionist approach to the research questions (Burr, 1995), given this study does not seek to focus on individual perspectives of autism but the socially reproduced conceptualisations of autism.

Ethics

An ethical approval was obtained from the Education Faculty, University of Cambridge. All participants were required to read an electronic version of the research information sheet and sign the informed consent form prior to the study.

Results

3 major themes were identified prior to the interviews: 'Language of autism,' 'Strategies and Interventions' and 'Relationships with autistic students.' Several subthemes that emerged from the transcription, are shown in Table 4.

Table 4

Major themes and subthemes identified from the interviews with the participants

Major themes	Subthemes
Language of autism	Medical model of autism
	Neurodiversity
	Characteristics of autism
Interventions and strategies for autism	Strategies for teaching autistic children
	Instructing autistic children
Relationships with autistic students	As a mediator
	As a parent
	As a friend

Language of autism

This section includes the language that the participants used in describing autism, which reflects their conceptualisations of autism. Within this central theme, it was found that there were 3 subthemes: 'Medical Model', 'Neurodiversity', and 'Characteristics of autism'.

Medical model of autism

All ABA therapists referred to DSM-5 to explain what autism is. However, they used different terms when suggesting the nature of autism. Two therapists stated that autism is a 'developmental disorder' (Therapist 4 & Therapist 5). One therapist described autism as a 'disability' (Therapist 1). A therapist claimed that autism is a 'mental illness' (Therapist 3). Some therapists shared the belief that autism is treatable, and implied that their responsibility was to 'treat' autism (Therapist 3). Furthermore, the therapists believed biological and genetic factors are the origins of autism, although the aetiology of autism is not entirely known (Therapist 5).

Furthermore, all therapists classified autistic children into 'high-functioning' and 'low-functioning' (Therapist 4). According to the therapists, autistic children have different levels of learning abilities, language abilities and play skills. They reported that autistic children who are 'high-functioning' are good at academic learning, especially mathematics (Therapist 3 & Therapist 4). High-functioning autistic students are relatively verbal (Participant 7). However, 'low-functioning' autistic children were described as having a 'lower ability for learning' compared with 'children in normal development' (Therapist 1).

Neurodiversity

One therapist rejected the medical model and stated that autism is a 'condition' (Therapist 2). The participant also emphasised that autism is not a disease: 'It's not like a heart disease like I'm having a diabetes…which means a part of my body goes wrong…' (Therapist 2). Some of the therapists believed that they 'teach' instead of 'treat' autistic children (Therapist 1, Therapist 2 & Therapist 3).

Therapists also highlighted the individual differences among autistic children. 'Some of them may be good at visual stuff, or some of them may be good at recognising different labels…' (Therapist 1). Moreover, one therapist suggested 'high-functioning' and 'low-functioning' children have their relative strengths and weaknesses:

> *'...so I got a high-functioning child, he is like 9 years old going to mainstream school…But he cannot even finish a 10-piece puzzle. But at the same time, I got a low-functioning child, he's 8 years old…he cannot even tell me what he did, what he ate for his breakfast. But he could finish 100-piece of puzzle on his own, quickly…everyone has different strengths'* (Therapist 2).

Characteristics of autism

Table 5

Comparisons of characteristics of autism described by the participants

Characteristics	ABA Therapists	Teachers
Social communications	'Deficits in social communication or interaction' (Therapist 1)	'…they are not very good at socialising with other people…' (Teacher 1)
	'Lack of eye contact' (Therapist 3)	'…they don't understand the facial expression…' (Teacher 4)
	'Scared of physical touch' (Therapist 3)	'…you find them pretty weird because they are socially awkward.' (Teacher 1)
	'Delay of language development' (Therapist 3)	'…if I forgot something, he would remind me but somehow in an impolite way.' (Teacher 4)

Behaviours	‘Self-stimulation’ (Therapist 4)	‘…they ask a lot of questions in a repeated way…’ (Teacher 4)
	‘Restricted or repetitive patterns of behaviour’ (Therapist 1)	‘…every time when I have my math lesson, he would come out and ask whether I need help…So this routine would repeat lessons by lessons…’ (Teacher 5)
	‘Flip their hands’ (Therapist 4)	‘Stubborn’ (Teacher 5)
	‘Shake their heads’ (Therapist 4)	
Hypersensitivity	‘Scared of physical touch’ (Therapist 3)	‘If a classmate puts like some stationery on the kid’s table, they would be very sensitive about that because I guess it would be about an invasion of the private space…’ (Teacher 3)
	‘Sensory issues’ (Therapist 1)	‘…who screamed in my lesson like to a point that I couldn’t speak…there wasn’t much noise but then he found it really noisy, and he wanted to cover the noise by his screams…’ (Teacher 1)
Attentiveness		‘…he could have fewer distraction, or he can have a good focus in class.’ (Teacher 5)
		‘…they would get distracted very easily…’ (Teacher 3)
Emotional regulation	‘…a slight change of their schedule will affect a lot of their emotion…’ (Therapist 4)	‘He lost temper easily…’ (Teacher 4)
Academic Learning	‘…for the relatively high-functioning kids of mine…they are good at math…’ (Therapist 4)	‘…high chance they have higher IQ than other people…’ (Teacher 1)
		‘he’s really clever. He’s good at math, he’s good at English, calculating or spelling.’ (Teacher 2)
Following rules		‘…they will disturb classroom randomly and you will never know and the reason why…they have their own principles…they don’t follow rules…’ (Teacher 1)
		‘…when I assign some work or some exercise to them, they could follow them quite well.’ (Teacher 5)

As shown in Table 5, ABA therapists and teachers identified similar major characteristics of autism. They both associated autism with having difficulties in social communications and restricted and repetitive behaviours. However, the therapists quoted DSM-5 while teachers used more descriptive language and less technical terms to express their understanding of autism. For example, therapists stated that autistic individuals have ‘restricted and repetitive patterns of behaviour’ (Therapist 1) while teachers shared that the students ‘ask a lot of questions in a repeated way’ (Teacher 4) and are ‘stubborn’ (Teacher 5). While teachers found most of the autistic students to be intellectually capable, ABA therapists emphasised that only high-functioning students were academically gifted. Moreover, teachers used more judgmental language than therapists, such as ‘weird’,

'impolite' and 'socially awkward' to describe autistic students, even if the autistic child tried to be helpful: '…if I forgot something, he would remind me but somehow in an impolite way…' (Teacher 4). On the other hand, both therapists and teachers called neurotypical students as 'normal' (Therapist 1, Teacher 1 & Teacher 3).

Teachers reported more inconsistent observations of autistic children than ABA therapists. Regarding following rules, one teacher described autistic children as disruptive: '…they will disturb classroom randomly and you will never know and the reason why…they have their own principles…they don't follow rules…' (Teacher 1). However, other teachers suggested that autistic children are good at following patterns and rules related to classrooms and assignments (Teacher 2, Teacher 3 & Teacher 5). Teachers also had different opinions towards autistic children's level of attentiveness during classes. Some teachers expressed that autistic children could be distracted easily and did not follow the tasks given by teachers. However, another teacher explained that autistic children could be more attentive in class, if they could accommodate them.

Interventions and strategies for autism

In addition to the language of autism, the strategies and interventions that ABA therapists and teachers adopt implicate how they conceptualise autism.

Strategies for teaching autistic children

Table 6

Differences in strategies for autistic students between ABA therapists and teachers

ABA	Peer support	Classroom management
Requires autistic students to 'stay calm and quiet' and 'control themselves'. Requires autistic students to be compliant to the therapists.	Creates a friendship group for autistic students to 'help them to try to express themselves'	Creates a 'calming and familiar' learning environment for autistic students.

While ABA therapists attempted to correct autistic behaviours, teachers would use peer support and some classroom management to accommodate the needs of autistic students (see Table 6). Therapists adopted reinforcements to encourage 'good' behaviours and extinguish 'bad behaviours' (Therapist 2). 'Good' behaviours include making requests appropriately, staying calm and quiet, and controlling themselves (Therapist 1 & Therapist 2). 'Bad' behaviours include not sitting upright, being disruptive and non-compliant (Therapist 1 & Therapist 2). Furthermore, therapists suggested that they would punish autistic students to reduce the number of undesirable behaviours. Teachers, on the other hand, not only allowed autistic students to express themselves, but they also accommodated the learning needs of the students. Through forming a cell group with other students, teachers encouraged autistic students to voice out rather than asking them to stay quiet. Moreover, teachers would arrange autistic students to sit in the first row so that the students would be less distracted and more attentive in class.

Instructing autistic students

Table 7

Comparisons of instructions between ABA therapists and teachers

Instructions	ABA therapists	Teachers

Verbal explanations	'… [For 'high-functioning' students only] I can try to use language to describe or explain more rationales to them. I mostly use rationales to make them understand why they have to do that or teach them that they have to do that…' (Therapist 3)	'…we still need to explain to him how to express himself with the considerations of others.' (Teacher 5)
Tone	'…hold my tone to be very firm.' (Therapist 1)	'…I would be extra sensitive and caring and thoughtful…I also tried to talk to them from their perspective…' (Teacher 3)
		'I will show my students that I am very patient to him…' (Teacher 5)
Length	'…give them instruction only once.' (Therapist 1)	'…keep it as short as possible…' (Teacher 1)
Eye contact		'…staring at their eyes when I talk to them…' (Teacher 1)
		'…ask them to look at me…' (Teacher 1)
Reductionism		'Mostly I would make clear steps like the first thing they have to do…then second thing…' (Teacher 3)

Both teachers and ABA therapists would try to verbally explain to autistic students when instructing them (see Table 7). However, according to the therapists, they would only explain to the 'high-functioning' students. Therapists suggested that they needed to be more authoritative towards autistic children, Therapists held a 'very firm' tone (Therapist 1) when they gave an instruction. In contrast, teachers expressed that they would be more patient, sensitive and empathetic towards autistic students. Both teachers and therapists would simplify and shorten their instructions in order to allow autistic students to understand them.

Relationships with autistic students

The relationships with autistic children demonstrate the power dynamics between teachers and autistic students.

As a mediator

According to the teachers, autistic children were often the targets of bullying by their fellow classmates. Whenever autistic students had social difficulties with his schoolmates, teachers would try to talk to the students and sort out the problems. However, a teacher also said that she could only form communications with autistic students when 'time is available' (Teacher 2), while teachers usually had a 'tight schedule of teaching in my class…' (Teacher 2 & Teacher 4).

As a parent

Therapists emphasised that they imagined herself being the parent of the autistic students. She expressed that she wanted the best for her students: '…just like how parents teach their child, we want them to become an independent grown up and they can do what they enjoy in their life, and they can achieve the biggest happiness they have…' (Therapist 2).

As a friend

Therapists also reported that they spent time playing with autistic students. Therapists would also like to establish friendly relationships with the students to build trust and make them feel at ease: '…they need to know that we're here to help them instead of really teaching them as a tutor, but to let them know that we are just a friend…' (Therapist 4). However, the therapists also acknowledged that the ultimate intention behind being friendly was to make students to 'comply and try to listen to me…' (Therapist 1)

Discussion

In terms of the language of autism, Hong Kong ABA therapists demonstrated a medicalised understanding of autism, which is in line with the western ABA practice (Kirkham, 2017). They all referred to the DSM-5 but described autism with different terms, such as 'developmental disorder' and 'mental illness,' which suggest a medical model of autism that focuses on deficits rather than autism-related strengths (Anderson-Chavarria, 2021). All therapists classified autistic children by their functionality, showing an ableist discourse embedded in their conceptualisations of autism (Billawalla, 2014).

As opposed to the pathological view held by the majority of the therapists, a minority of them believed that autism is merely a 'condition' or a 'disability.' Although 'disability' is a less neutral term than 'condition', the term 'disability' can be interpreted as autistic individuals being disabled under unaccommodating environments (Mulvany, 2000). Some therapists believed that they treated autism, showing a conventional ABA principle under the medical model (Kirkham, 2017). Other therapists believed that their primary responsibility was to teach rather than treat, which hints a support for the neurodiversity view of advocating anti-cure and treatment (Silverman, 2016). This suggests that the Hong Kong ABA field is dominated by the medical view, with individual interpretations of the nature of autism.

Teachers and ABA therapists demonstrated systematically similar understandings towards characteristics of autism. However, teachers did not use technical terms to describe their conceptualisation of the nature of autism. Both teachers and ABA therapists called neurotypical students as normal, implying that they upheld neurotypical behaviour as an ideal and therefore believed that autistic individuals are dysfunctional and deviated (Armstrong, 2015). However, therapists used technical terms while teachers relied on past experience to recall characteristics related to autism. Therapists listed out the behavioural domains listed on DSM-5 such as 'deficits in social communication' and 'restricted and repetitive behaviours.' Teachers also reported similar behaviours from autistic children but through describing the details of the exhibited behaviours, such as asking whether the teacher needed help in every lesson. Teachers used more judgmental language to describe autistic students than the therapists, showing a negative attitude towards autism. Both teachers and therapists seemed to support a deficit-based approach to understanding autism (Dinishak, 2016), as harmless but unusual behaviours were regarded as undesirable by ABA therapists and teachers. The two groups showed their support of the medical model of autism.

Nevertheless, teachers displayed a smaller degree of agreement on characteristics of autism (e.g., levels of attentiveness and following rules), compared to ABA therapists. The differences of language that the two groups of participants would use and the levels of consistency within a group could be due to the fact that teachers in Hong Kong lack special education training prior to teaching and have a weaker understanding of autism as a result (Liu et al., 2016). Furthermore, therapists repeatedly classified autistic children based on their functioning level, whereas teachers simply assumed that the majority of autistic children are intellectually superior. This is consistent with the fact that autistic students with intellectual disability in Hong Kong are excluded from the mainstream classrooms, therefore teachers in mainstream classrooms encountered a less heterogeneous pool of autistic students than the actual population of autistic students.

Although some therapists claimed that they taught instead of treating autistic students, the curative aim of ABA was still implied. The therapists focused on reinforcing desirable behaviours and eliminating bad behaviours. According to the therapists, good behaviours are those which show compliance to the behaviours, such as staying calm and quiet. However, non-compliant behaviours, such as screaming and crying, should be reduced through the ABA method. One therapist even allowed the use of punishment to inhibit undesirable behaviours. This suggests that 1) therapists' objective was to shape the behaviours of autistic children, 2) the

desirability of the behaviours that autistic children displayed was paramount, 3) the desirability of behaviours was decided by neurotypical individuals.

In contrast, teachers adopted more accommodating strategies. Unlike the ABA therapists, teachers encouraged autistic students to express themselves through forming peer groups with other students. As Bascom (2012) argues, inhibiting screaming and crying, and encouraging autistic children staying quiet is silencing students. Through allowing autistic students to voice out, teachers did not neglect autistic children's lived experience and voices (Milton, 2012). As a result, from the perspective of teaching strategies for autism, the power between autistic individuals and teachers are more balanced than the power between autistic students and ABA therapists. Moreover, ABA therapists eliminated harmless but non-compliant behaviours, such as not sitting upright. Autistic traits are deemed as undesirable by the therapists. This points to the argument that ABA requires autistic people to comply to the neurotypical ideals therefore marginalises the societal status of autistic individuals, who are disabled by a hegemonic neurotypical society (Chapman, 2017). In contrast, teachers attempted to minimise distractions for autistic students in class rather than correcting their behaviours. This shows that, ABA therapists aimed to change autism itself while teachers changed the environment to fit the needs of autistic individuals.

While teachers were more accommodating towards autistic children than therapists, they still showed a week support for the neurodiversity model. They generally held negative attitudes to autistic students, which is in line with previous research conducted in Hong Kong (SESHK, 2012). One possible explanation for the inconsistency presented in our results is that teachers in Hong Kong externalised positive attitudes towards autistic children and internalised their negative attitudes. Teachers externalising positive attitudes was deliberate as teachers expressed that they would want to elicit similar positive attitudes from neurotypical students to autistic students, despite holding implicit bias against autism. Moreover, teachers did not utilise a variety of interventions suggested by the Education Bureau (2015), such as providing visual cues and different levels of support for autistic students. The 3-Tier model was unmentioned by the teachers, which raises a concern over the effectiveness of Hong Kong government's effort for including autism in mainstream classrooms. Besides inadequately accommodating for autistic students' difficulties, teachers did not show attempts at using strength-based approach proposed by western researchers (e.g., Armstrong, 2012). Hong Kong teachers exhibited a low awareness of autism as a valuable difference in class, exemplifying a case against neurodiversity. As a result, not only has the gap between Hong Kong teachers' accommodation and educational policy been demonstrated, but it has also suggested a cultural discrepancy between Hong Kong and western classrooms in conceptualisations of autism.

Nevertheless, both teachers and therapists would adopt a less reductionist and behaviourist approach to instruction, depending on the functioning of the children. Some therapists and teachers used verbal communications to explain things to students without giving straight instructions for them to follow. While the therapists explained that the functioning level of autistic students is the reason why they used different instructional methods, the age of the autistic students could act as a moderator on the choices of intervention methods. The age ranges of autistic students who were taught with a communicative approach, were consistently larger than those who were taught with a reductionist approach, in the contexts of both ABA therapy and mainstream classrooms (10-16 vs 3-9). This phenomenon could be explained by the finding that the severity of autism symptoms can improve with age, from a longitudinal study (Waizbard-Bartov et al., 2021). Therefore, the approach of intervention is shown to be ultimately tied with the severity of conditions that autistic students display, which implies ableism in Hong Kong education.

Teachers and ABA therapists reported to have a friendly relationship with autistic students. To some therapists, an amicable relationship was a strategy to lead autistic children to comply to the therapists. More research is needed on exploring the complex dynamics between them. Moreover, observational studies could be implemented along with interviews to observe the interactions between the ABA therapists and autistic students.

Limitation

Small sample size

The sample size of this study is too small to make generalisations about the conceptualisations of autism in Hong Kong. Also, the data turned out to be more heterogeneous than expected, necessitating a larger sample size to capture the heterogeneity of autism conceptualisations by ABA therapists and teachers (Elo et al.,

2014). In future studies, more demographic characteristics, such as the age of the participants, experience, educational attainment and the types of contexts where they work, could have been recorded to show any variations of conceptualisations of autism. With a larger sample size, more participants with a greater diversity of demographic characteristics can be included to see how different factors moderate their conceptualisations of autism.

Implications for the Hong Kong government

The local government should shrink the educational policy gap in supporting autistic children. For example, regular professional development for mainstream teachers can be implemented to directly address Hong Kong teachers' weak understanding of autism and negative attitudes towards autistic students. To remove barriers in classroom participations, teachers need specialist knowledge to cater more heterogeneous needs of autistic students (Humphrey & Lewis, 2008). Moreover, the government can integrate the current curriculum with a strength-based approach (Armstrong, 2012) to de-pathologise autism in Hong Kong classrooms. Despite teachers' current attempts at accommodation, these limited supports without a strong base of neurodiversity are insufficient to shift Hong Kong education away from a deep-rooted medicalised conceptualisation of autism. Due to the increasing number of diagnosed autism cases in Hong Kong (Wong et al., 2015) but a lack of learning support in classrooms, parents of autistic children may resort to alternative medical interventions, such as ABA therapy. Parents feel compelled to conform to a medical model to treat their children, given an ableist climate in Hong Kong education. As a result, government's provision of resources for equipping Hong Kong teachers with techniques and knowledge to accommodate the needs of autistic students may steer Hong Kong towards a neurodiversity model of understanding autism, achieving an equitable education for autistic students.

Conclusion

In general, ABA therapists and teachers in Hong Kong adopted a medical model to conceptualise autism. Although teachers exemplified a weaker and less explicit support for the medical model compared to the therapists, teachers' negative attitudes towards autism were still apparent. Despite being more accommodating in their strategies, teachers did not fully engage with the EDB's guidelines in accommodation. The participants from the two ends of the spectrum of teaching staff for autism suggested that a deficit-based conceptualisation of autism and an ableist climate are prevalent and unquestioning in Hong Kong, reproduced by a lack of trained teachers with accommodating techniques for autistic students. Through looking into the conceptualisation of autism, this research brings light to the unquestioning medical model of autism in Hong Kong and suggests an alternative model to humanise autism. In formulating future policy, the government should be aware of the dynamic components of such a conceptualisation and employs strategies targeting them from the front line, with training and the equipment of knowledge at its forefront.

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