An Analysis of the Statewide Shortage of ABA Professionals in New York

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Abstract

Support services for many Autistic students in schools is critical. Behavior analysts are one type of service provider who offer support services in and outside of school settings to Autistic students. As behavioral support services are increasing in educational settings, it is important to ensure there are a sufficient number of professionals trained to provide high quality and compassionate support. However, there may not be enough state licensed providers to meet the growing need of students across the state of New York (NY). The supply of state licensed behavior analysts (LBAs) was calculated for the state of NY, its six regions, and its 62 individual counties to assess the shortage of providers. County level public data were used to compare the per capita supply of LBAs using caseload guidelines. The supply of LBAs did not meet the supply benchmark at the aggregate level or in any of the state's six regions. Only four of the state's 62 counties met the LBA supply benchmark. Shortages of service providers limit accessibility to support services and high caseloads can impact service quality. Suggestions for changes that may increase accessibility to behavior analytic supports and services in NY to those seeking services are discussed.

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Author Note

This manuscript utilizes identity first language for the Autistic community. The use of identify first language is reflective of findings that a large portion of Autistic adults prefer the use of identity-first language (Bury et al., 2023; Keating et al., 2022; Taboas, 2023) and calls to use identity first language in published research regarding the Autistic Community (Botha et al., 2021; Bottema-Beutel et al., 2021; Keating et al., 2022).

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The rate of autism prevalence in U.S. schools has increased considerably over the last 20 years (Cardinal et al., 2020). Autism is one of the 13 disability categories in the Individuals with Disabilities Education Act (IDEA, 2004) and students with an autism classification are eligible for special education services. IDEA regulations define autism as a "developmental disability… that adversely affects a child's educational performance" (Assistance to the States, 2006, §300[8] [c][1][i]). As the prevalence of students with autism classifications increases, so does the need for support services that some Autistic students may need to receive a free and appropriate public education (FAPE). The federal government outlines a free appropriate public education as educational services that meet the needs of the student and that may include related aids and services such as speech therapy, occupational and physical therapy, psychological counseling, and medical services, among others (20 U.S.C. 1401§602[26][A]). For students whose behavior impedes their learning or others' learning, FAPE may be provided through the use of positive behavioral interventions and supports along with other strategies to address the behavior (20 U.S.C. 1414§614 [d][3][B][i]). When these behaviors are a manifestation of the student's disability, a functional behavioral assessment should be completed, and a behavioral intervention plan should be implemented (20 U.S.C. 1415§615[k][1][F]).

Research has generally supported the effectiveness of behavioral interventions for goals related to communication and behavioral skills with Autistic and non-Autistic populations (Foxx, 2008; Matson et al., 2012; Vietze & Lax, 2018). Applied Behavior Analysis (ABA) is one evidenced-based intervention that can be implemented to support socially significant behavior change (i.e., meaningful and important to the learner). It is critical that environmental supports are targeted and that any strategies implemented are preferred and approved by the learner (e.g., assent is given at all times) (Breaux & Smith, 2023). Applications of ABA to support learning and performance are found in a large variety of contexts (Heward et al., 2022). Pedagogical approaches based in ABA strategies have utility for both academic and behavioral goals (Barnett et al., 2021; Heward et al., 2022; Pennington, 2022). Behavior interventions are considered evidence-based for increasing academic, communication, and prerequisite learning skills as well as decreasing contextually inappropriate behavior that could keep students from accessing their least restrictive learning environment (LRE) (National Autism Center, 2015).

ABA is increasingly being implemented in school settings (Stevenson & Correa, 2019) and BCBAs are being recruited by school districts to serve as behavioral consultants (McMahon et al., 2021). The Positive Behavior Intervention Support (PBIS) framework is based on the principles of ABA and is widely used in schools (Horner & Sugai, 2015; Kittleman et al., 2019). The PBIS framework provides evidence-based behavior support at varying tiers that have had positive impacts on students as well as educators. The tiered PBIS approach provides varying levels of positive behavior support based on each student's needs and can support some learners in accessing education in their LRE (Simonsen & Sugai, 2013; Watkins et al., 2023). Behavior analysts can help with the design and implementation of the PBIS framework at varying levels (i.e., tiers) of intensity (Horner & Sugai, 2015). Behavior analysts are also frequently involved in the completion of functional behavioral assessments (FBAs) and corresponding behavioral intervention plans (BIPs). These documents often serve several functions, including use as an assessment tool, legal paperwork, and data to support placement of students within

the school setting between more or less restrictive settings. BIPs provide guidance to teachers, paraprofessionals, related service providers, and administrators regarding proactive supports and response strategies ideally designed to support positive behavioral outcomes in the school setting. High quality FBAs and BIPs are an important part of receiving a FAPE for students whose behavior difficulties are a manifestation of their disability (Zirkel, 2009; Zirkel, 2011; IDEA, 2004b, IDEA, 2004c; New York Code of Rules and Regulations, 2009) and credentialed behavior analysts have specialized training in conducting FBAs and developing corresponding BIPs. Many schools provide ABA services through hiring credentialed behavior analysts, fund ABA services through district programs, or reimburse families for ABA services received elsewhere (Stevenson & Correa, 2019).

IDEA specifies that related services include a wide variety of support services that allow a learner with an IDEA classified disability to benefit from special education. These support services are often included in an Individualized Education Plan (IEP) based on the identified needs of the student. In line with this, families of Autistic students have increasingly advocated for the use of ABA services as part of their child's Individualized Education Plan (IEP) to support their child's individualized needs (Stevenson & Correa, 2019) in addition to other related services. Identifying needs and providing remedial services to address discrepancies between a student and non-disabled or neurotypical peers is referred to as a deficit framework. This deficit framework, reflective of the medical model of disability, has been critiqued for using non-disabled and neurotypical, or non-Autistic, behavior as the standard of comparison that guides goals and corresponding services. Using neurotypical behavior as a standard of comparison to guide instructions and support services, while ignoring the address the disabling role of societal barriers places the onus for change on the individual rather than on society and reflects ableism. Concerns of ableism and the unintentional harm caused by support services have been raised from both inside and outside of many support professions including special education (Stringer Keefe, 2022; Timerblake, 2020; Manalili 2021), speech and language pathology (DeThorne & Gerlach-Houck2023; Gerlach-Houck & Constantino, 2022), occupational therapy (Hammell, 2022; Sterman et al., 2023; Yao et al., 2022), and ABA (Cernius, 2022; Johnson, 2022; Miller, 2021; Ne'Eman, 2021; Ram, 2020; Sanvodal-Norton & Shkedy, 2019; Shyman, 2016; Veneziano & Shea, 2022; Wilkenfeld & McCarthy, 2020).

Collectively, these concerns often call for reform of these services so that providers make distinctions between the biases and barriers present in an environment and behaviors that genuinely disrupt the student from accessing their education and their environment. For example, focusing services on teaching an Autistic student to sit at their desk for 90% of a work period focuses on the barrier of a common classroom expectation without considering the reasonable accommodation of a flexible seating arrangement. When these distinctions are not made, services may focus on teaching students to reduce, or "mask," characteristics that are a part of their Autistic identity in favor of communication and other behaviors characteristic of non-Autistic individuals. Concerns have been raised regarding the potential harmful long-term mental-health impacts of the use of characteristically non-Autistic behaviors to mask Autistic characteristics (i.e., social camouflaging) (Beck et al., 2020; Cage et al., 2018; Cassidy et al., 2023; Hull et al., 2021) and there have been calls to move away from these approaches in services toward approaches that can help a person thrive while affirming their Autistic identity. ABA has received a large portion of these criticisms and there have been increasing numbers of calls from within the behavior analytic community for behavior analytic support providers to listen to concerns, especially from the Autistic and Disabled communities, genuinely reflect on those concerns, and reexamine ablest practices in a way that informs provision of services (Graber & Graber, 2023; Kirby et al., 2022). Additional calls to action from within the behavior analytic community

include centering the learner; emphasizing social validity; prioritizing compassion, humility, safety, wellbeing, trauma-informed pedagogy, autonomy, choice, and assent (Gover et al., 2023; Johnson, 2022; Miller, 2021; Rajaraman et al., 2022a; Rajaraman et al., 2022b; Rajaraman et al., 2023; Schuck et al., 2022a; Schuck et al., 2022b; Staubitz et al., 2022; Veneziano & Shea; Wang et al., 2022).

Despite the recognized impact of ABA services, research has shown that equitable access to providers remains an issue (McBain et al., 2020; McBain et al., 2021; Yingling et al., 2022; Yingling et al., 2021a, 2021b). Lack of access to services has direct and indirect negative effects on individuals who would benefit from earlier supports and interventions as well as on family quality of life (Jones et al., 2017). Many individuals and families who may benefit from and wish to utilize behavior analytic services are unable to access them (Smith-Young et al., 2020); improving provider availability was one of the most frequent suggestions in a large survey of parents of Autistic children (Yingling et al., 2018). Barriers to accessing these services are exacerbated for Black, Indigenous, People of Color (Levy et al., 2021; Nelson, 2002). Additionally, shortages of ABA providers could put schools in a position where agreed upon ABA services are not delivered (Stevenson & Correa, 2019) which would be a violation of FAPE (Sumter County School District 17 v. Heffernan, 2011). This strain on resources may result in school administrators asking BCBAs to take on cases outside of their scope of competence or to exceed their caseload capacity (Slowiak & DeLongchamp, 2022). The ABA Ethics Hotline cited an example of a report made to the hotline involving a BCBA being asked to assume a school-based caseload of 40-50 students (Syed, n.d.). When the necessary number of BCBAs are not available within schools, the quality of the ABA services provided is impacted. Large caseloads and the resulting negative impact on BCBA resources may result in poor fidelity of implementation of ABA interventions by consultees (e.g., teachers, other school personnel) (Max & Lambright, 2022), less or less effective collaboration with others, and limited time available to engage in professional learning in order to further professional competence. Together, these variables may negatively contribute to the capacity of the BCBA to deliver high quality, ethical, and affirming services to Autistic students. Therefore, determining the supply of credentialed behavior analysts within a geographic area has meaningful implications.

Research has shown that there are a large number of U.S. counties where there are very few or no Board Certified Behavior Analysts (BCBAs) (Yingling et al., 2021a, 2021b), despite rapid growth of the profession (BACB, 2022). County level analyses on the number of BCBAs in U.S. counties show that there are generally more BCBAs in counties that are urban, highly affluent, have higher numbers of insured residents, and have higher rates of non-Hispanic White residents while rural counties have very little access to BCBAs (Yingling et al., 2022; Yingling et al., 2021a, 2021b). However, the existing county-level analyses only look at county access to BCBAs by analyzing the numbers of BCBAs residing within that county. Analyses of access to providers without taking caseload capacity into account may overestimate access to services especially in counties with a large population of Autistic students.

Xue Zhang and Cummings (2020) conducted an analysis of the per capita supply of BCBAs based on caseload recommendations for an estimated number of Autistic children in each U.S. State and found that only Massachusetts met the supply benchmark. These findings also showed that 42 states and the District of Columbia would still not have enough BCBAs if each provider served double the recommended caseload. This analysis also noted that states in the Northeast and with higher public education spending had significantly higher numbers of BCBAs. However, New York (NY) had the lowest per capita supply in the Northeast despite having highest per pupil spending in the 2020 fiscal year of all states (US Census Bureau, 2020).

NY is the fourth largest state in the country by population, and a 2015 analysis showed that NY had

the third largest number of students receiving special education services (Cardinal et al., 2020). NY has more than 20 million residents (US Census Bureau, 2021), of which more than 40% reside within New York City (NYC) itself and more than 60% reside in the NYC metropolitan area. With its nearly 8.5 million individuals, NYC has the largest population of a city in the U.S. (New York State Department of Health, 2020). Population density, which reflects the concentration of the population in a specific area, highlights the discrepancies across NY with more than 71,000 people living in one square mile in NYC as compared to 237 people, on average, per square mile across the rest of the counties in the state (New York State Department of Health, 2020). Therefore, it is necessary to consider the variability of population density across NY when evaluating the need for ABA providers as aggregate level data alone could be misleading and regional and county-level data could provide additional helpful information.

In addition to considering the size of the geographic unit, the type of credential is an important component of analyzing the supply of ABA practitioners in a state. To date, no analyses have utilized state licenses to look at the supply of providers, despite 36 states requiring a state specific ABA professional license to practice ABA in most settings. NY's Licensed Behavior Analyst (LBA) credential has been a requirement since 2014. Since 2016, applicants for the LBA must provide documentation of completing a program registered by the New York State Education Department or a "substantially equivalent" course of study to obtain an LBA. At the time of writing this paper, NY does not offer reciprocity with the BCBA credential but the remaining pathway to licensure requires that applicants have taken and passed the BCBA exam since the state specific exam is no longer offered. Currently, there are 19 NYSED approved programs (NYSED, 2022a) and 14 of those programs meet the requirements for the BCBA exam (Association for Behavior Analysis International, 2022). As of January 1, 2022, there were 16.4% fewer LBAs in NY than master's and doctoral-level BCBAs and there has been little-to-no growth in the number of new LBA licenses issued in NY over the last few years, likely a result of the unique NY licensure requirements and few available training programs. There were only 208, 163, and 205 new LBA licenses issued in 2019, 2020, and 2021 respectively (NYSED, 2022b). This lack of growth is deeply concerning given the large increase in job posting for behavior analysts, with an increase of 61% from 2020 to 2021 (BACB, 2022). Additionally, NYS has very few Certified Behavior Analysis Assistants (CBAAs) who can assist LBAs in implementing support services (NYSED, 2022b).

It is vitally important for there to be an index of where high levels of state licensed ABA providers are located, in order to plan for increasing the supply and therefore access to these crucial support services. However, there have been no regional or county-level analyses of the per capita supply of behavior analysts based on caseload recommendations for any state in the US. These analyses are urgently needed for NY given the large number of Autistic individuals in NY (Dietz et al., 2020; NYSED, 2022b) who qualify for services and may seek out services, unique state licensure requirements, and the variability in population density across state counties and regions. Additionally, no research has calculated the number of providers needed in order to meet supply benchmarks. The purpose of this paper is to analyze the per capita supply of licensed behavior analysts in NY and the number of providers needed to meet supply benchmarks at (1) the aggregate level, (2) the regional level, and (3) at the county level to assess the shortage of licensed ABA providers in NY state. We will conclude by discussing the importance of ensuring sufficient behavior analysts who are trained in autism affirming support services.

Method

The number of LBAs and Certified Behavior Analyst Assistants (CBAAs) in each of NY's 62 counties as of January 1, 2022, was obtained from the NY Office of the Professions website (NYSED, 2022c). The Office of the Professions reports the number of LBAs and CBAAs in each NY county as well as the number of LBAs residing outside of the US and residing outside of NY. LBAs and CBAAs residing outside of the US and outside of NY were excluded from the calculations used in this study. Each county was categorized into one of six regions to calculate regional supply (Central, Eastern, Hudson Valley, New York City/Long Island, North Country, Western; see Table 1). The number of Autistic students per county was obtained from the New York State Education Department (NYSED) special education data collection and reporting unit (2022b). These data report the numbers of students aged 4-21 with classifications of autism based on the Individuals with Disabilities Education Act (IDEA, 2004a) for each public school district in each NY county as of October 6, 2021.

The benchmark for per capita supply of LBAs was based on the Center for Autism Service Provider's (CASP) guidelines for behavior analyst caseloads (2020) focused model of service delivery. Focused services typically range from 10-25 hours per week and are designed to teach functional skills and address behaviors that acutely disrupt daily functioning in a wide variety of settings. The CASP caseload per behavior analyst providing focused services ranges from 10-15, but the caseload can increase by 60% to a caseload of 16-24 with the help of a credentialed assistant. Therefore, the number CBAAs was multiplied by .6 and then added to the total number LBAs at the aggregate, regional, and county level. This caseload guidance reflects best practice guidance in the field and addresses the recommended ratio of supervision to direct service (i.e., two hours supervision for every 10 hours of direct service provided) (CASP, 2020; Dixon et al., 2016).

The per capita supply of LBAs per 100 Autistic students was calculated by multiplying the supply of LBAs at the aggregate, region, and county level by 100 and then dividing by the total number of Autistic students. The per capita supply was compared to a benchmark for adequate numbers of LBAs based on the CASP recommended caseloads. The benchmark was determined by dividing 100 by the maximum recommended caseload without an assistant (15). The per capita benchmarks were 6.67 LBAs per 100 Autistic students. The number of additional LBAs needed in each county or region to meet the supply benchmarks was calculated by dividing the number of Autistic students by the maximum caseload, subtracting the number of existing LBAs, and then rounding to the nearest tenth.

Results

Results in this section present the analyses of LBA provider supply in NY and needs for providers at the aggregate, regional, and county level. The aggregate per capita supply of LBAs per 100 Autistic students in NY in 2022 was 3.2, far below the supply benchmark. This supply of LBAs is less than half of the providers needed to meet the supply benchmark. The aggregate number of LBAs needed in NY to meet the supply benchmark was 3,657, which is substantially more than the current total of LBAs in NY. None of the six regions in NY met the per capita supply benchmark of LBAs (see Figure 1). The number of additional LBAs needed for regions below the provider benchmark supply ranged from 53.3 to 1194.6 with the NYC/Long Island region having the highest need (Table 2).
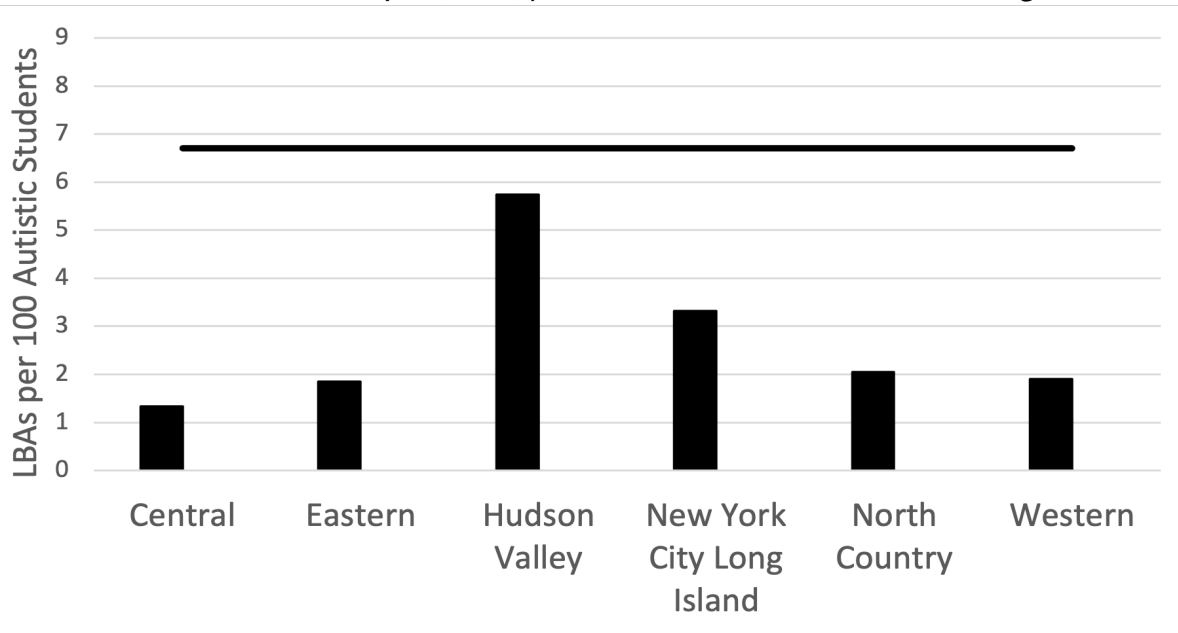
Table 1

Counties in Each of the Six New York Regions

Region	Counties Within the Region	
Central Region Counties	Broome	Schuyler
	Cayuga	Seneca
	Chemung	Tioga
	Chenango	Tompkins
	Cortland	Wayne
	Madison	
	Onondaga	
Eastern Region Counties	Albany	Rensselaer
	Columbia	Saratoga
	Delaware	Schenectady
	Fulton	Schoharie
	Greene	Warren
	Montgomery	Washington
	Ostego	
Hudson Valley Region Counties	Dutchess	
	Orange	
	Putnam	
	Rockland	
	Sullivan	
	Westchester	
New York City/ Long Island Region Counties	Bronx Kings (Brooklyn)	
	Nassau	
	New York (Manhattan)	
	Queens	
	Richmond (Staten Island)	
	Suffolk	
North Country Region Counties	Clinton	Oneida
	Essex	Oswego
	Franklin	St Lawrence
	Hamilton	
	Herkimer	
	Jefferson	
	Lewis	
Western Region Counties	Allegany	Niagara
	Cattaraugus	Ontario
	Chautauqua	Orleans
	Eerie	Steuben
	Genesee	Wyoming
	Livingston	Yates
	Monroe	

Note. These regions were selected based on the regional map created by the NYSED (n.d.).

Figure 1

Number of Licensed Behavior Analysts (LBAs) per 100 Autistic Students in Each NY Region

Note. The solid horizontal lines represent the supply benchmark for LBAs as determined by the practice guidelines set by the Center for Autism Service Providers (CASP).

Table 2

Numbers of Additional LBAs Needed in Each Region to Meet Supply Benchmarks per 100 Autistic Students

Region	LBAs Needed for Focused Services
Central	157.5
Eastern	159
Hudson Valley	42.5
New York City/Long Island	1258.4
North Country	86.8
Western	265.1

Note. The number of LBAs needed was rounded to the nearest tenth.

The supply of LBAs per 100 Autistic students met the benchmark for focused services in four counties (6% of NY counties) (Figure 2). The number of additional LBAs needed for counties below the provider benchmark ranged from 0.3 to 488.5 for focused services, with Kings County in the NYC/Long Island region needing the most providers (see Table 3). With 58 counties not meeting the supply benchmark, 94% of counties in the state of NY do not have enough supply of LBAs to meet the need for ABA services. The county level supply of LBAs was so low that even if each LBA took on caseloads that doubled the CASP guideline, the majority of counties would still not meet the demand for services.

Table 3

Numbers of Additional LBAs Needed in Each County to Meet Supply Benchmarks per 100 Autistic Students

County	LBAs Needed for Focused Services
Albany	39.7
Allegany	3.5
Bronx	490.5
Broome	28.9
Cattaraugus	7.3
Cayuga	6.7
Chautauqua	10.8
Chemung	9.6
Chenango	8.3
Clinton	4.2
Columbia	3.4
Cortland	5.3
Delaware	6.3
Dutchess	8.3
Erie	91.9
Essex	1.7
Franklin	7.8
Fulton	6.9
Genesee	6.1
Greene	5.9
Hamilton	0.4
Herkimer	7.4
Jefferson	16.0
Kings	280.1
Lewis	3.3

Livingston	5.1
Madison	7.7
Monroe	83.5
Montgomery	5.1
Nassau	0.0
New York	102.3
Niagara	26.3
Oneida	25.0
Onondaga	65.5
Ontario	12.7
Orange	37.9
Orleans	4.1
Oswego	15.4
Otsego	4.2
Putnam	1.3
Queens	291.7
Rensselaer	27.5
Richmond	114.4
Rockland	0.0
Saint Lawrence	5.5
Saratoga	20.7
Schenectady	20.1
Schoharie	3.3
Schuyler	1.7
Seneca	4.1
Steuben	10.5
Suffolk	3.1
Sullivan	0.0
Tioga	4.1

Tompkins	8.5
Ulster	16.7
Warren	6.3
Washington	9.4
Wayne	7.1
Westchester	62.7
Wyoming	3.1
Yates	0.3

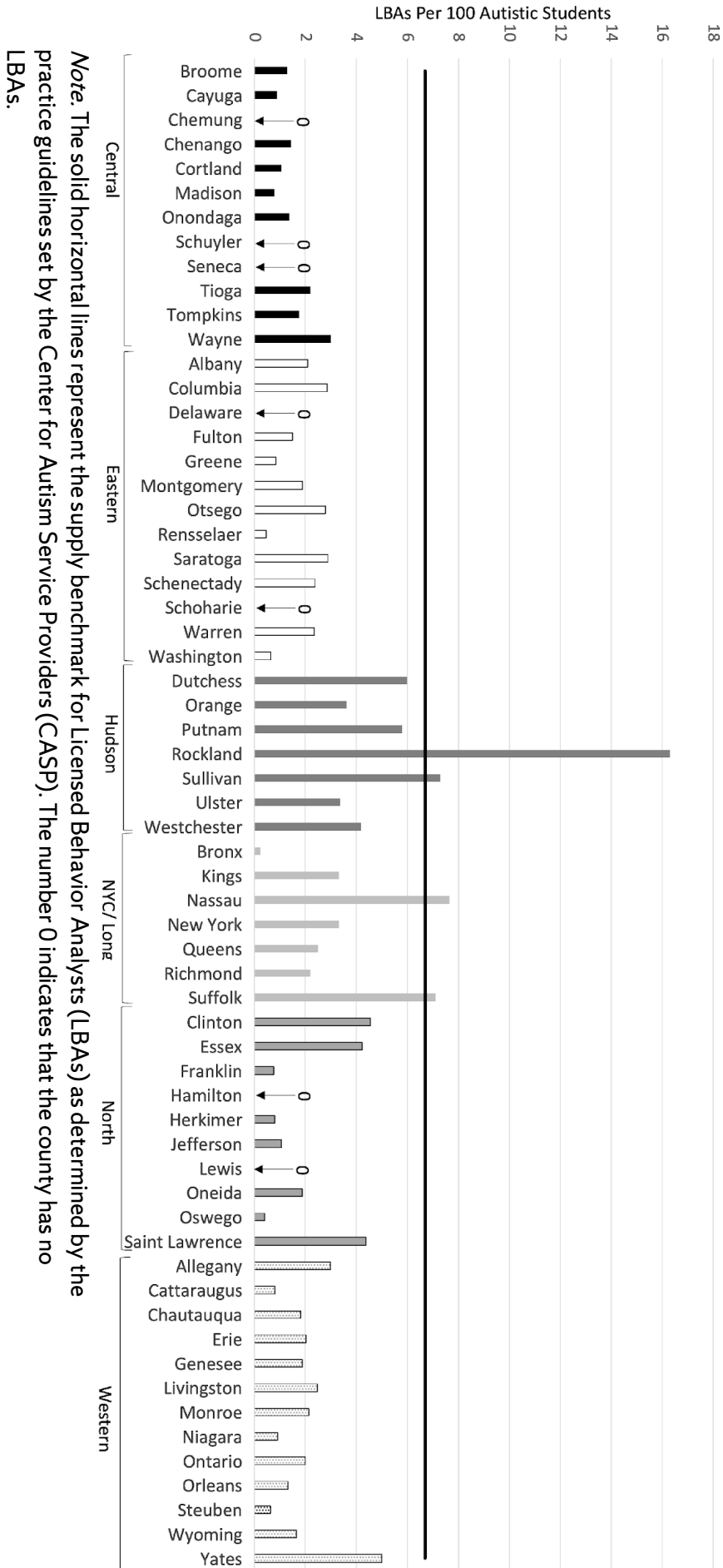*Note.* The number of LBAs needed was rounded to the nearest tenth.

Discussion

These results highlight the substantial shortage of LBAs across NY and align with other literature showing widespread shortages and lack of access to behavior analytic professionals nationally. Results also emphasize the importance of analyzing access to services by caseload capacity since counties with comparatively large numbers of LBAs still remained far below benchmark supply levels based on the number of Autistic students in the county. Results also highlighted the variability of need between the counties and regions of NY. For example, some counties needed hundreds more additional LBAs (e.g., Bronx County needing 488.5) while others only needed an additional few (e.g., Wyoming County needing 3.1). Insufficient numbers of LBAs in a geographic unit (e.g., region or county) limits the accessibility of support services in that geographic area. It is important to note that the shortage of practitioners is indicative of a shortage of supervisors. Aspiring LBAs must complete 1,500 total experience hours while receiving 1-2 hours of weekly individualized supervision by a licensed practitioner. Shortages of providers can also lead to the encouragement of serving larger caseloads, which can lead to staff burnout, turnover, leaving the field (Slowiak & DeLongchamp, 2021) and, ultimately, poorer quality services for students or clients served.

One of the reasons for the shortage of providers may be that people are not aware of the field or of behavior analysis as a career choice. A 2019 report by the Autism Spectrum Disorders Advisory Board to then Governor Cuomo recommended that communication campaigns be developed and sent to institutions of higher education to educate prospective professionals about ABA as a career path (Office for People with Developmental Disabilities, 2019). Raising the awareness of the field could inspire more people to pursue behavior analysis as a career and could encourage more institutions of higher education to create licensure qualifying programs, especially in regions that have very few providers.

Another possible reason for the shortage is the lack of reciprocity between the NY license and the national BCBA credential that many other state licensing boards recognize as meeting state licensure requirements. Licensure policies that are more aligned with the BCBA certification offer the flexibility to transfer a license between states. There are behavior analytic practitioners who were trained in NY before the 2014 licensure law established who would need to retake large numbers of graduate courses and repeat their field experience hours in order to qualify for a NY license under the regulations in the 2014 law. This has resulted in BCBAs residing in NY practicing in neighboring states since they do not

Figure 2

Number of Licensed Behavior Analysts (LBAs) per 100 Autistic Students in Each NY County

Note. The solid horizontal lines represent the supply benchmark for Licensed Behavior Analysts (LBAs) as determined by the practice guidelines set by the Center for Autism Service Providers (CASP). The number 0 indicates that the county has no LBAs.

currently qualify for the LBA based on the restrictive licensure laws (Office for People with Developmental Disabilities, 2021). The recent New York State Assembly Bill A10454 will provide a pathway for the State to recognize the BCBA certification as meeting the requirement for the NY LBA license, but as of writing this only temporary proposed regulations have been released by the State. Changes in public policies that align licensure requirements to the requirements by national credentialing bodies could increase the number of licensed behavior analysts in NY by providing a pathway to licensure to practitioners already residing in the state while also attracting practitioners from outside of NY.

One limitation of this study was that the NYSED data only include Autistic students with IEPs between the ages of 4-21. It is difficult to find a reliable measure of Autistic students in a younger age group because reliable diagnosis of autism generally only occurs beginning at age 2 (Lord et al., 2006) and young students receiving special education services may be receiving services under another special education category, such as developmental delay. Additionally, the 4-21 age group serves as the primary recipient of ABA services given regulations with special education and insurance coverage. Another limitation is the exclusion of LBAs who live in neighboring states and commute to NY for work. Conversely, not all LBAs residing within NY work directly with students or clients (e.g., clinical coordinators or academia).

It is worth noting that while the CASP caseload guidance is regarded as current best practice, its caseload recommendations serve as a general guideline. There are inherent challenges in estimating supply of LBAs as "not all [behavior analysts] work with ASD ... not all [behavior analysts] utilize comprehensive or focused treatment models, and...caseload size is not a straightforward metric because different patients require different dosages of treatment hours and caseload management" (Yingling, 2022, p. 5487). These guidelines were designed to ensure the necessary case supervision to ensure quality services for clients, with considerations for case complexity, total service hours, competence of the LBA, location and modality of services and supervision, and availability of support staff (e.g., CBAAs) (CASP, 2020). However, the size of an LBAs caseload should be based on the preferences and needs of the learner and their families, the LBA, and other contextual variables.

Despite the study's limitations, the shortage characterized by these data may be even worse. Individuals receiving wraparound ABA services receive services in multiple settings (e.g., school, home or residence, vocational, community) and therefore work with multiple providers. Individuals with higher levels of support needs also receive more hours of service-delivery which would reduce the number of individuals a practitioner could sustain on their caseload (CASP, 2020). The provider shortage in NY is likely to increase in 2023 when the restriction to only working with individuals with a medical diagnosis of autism spectrum disorder is lifted and individuals with any diagnosis within the American Psychiatric Association's (2013) *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.: *DSM-5)* can access ABA services. At the time of writing this paper, temporary regulations have been put in place to create a pathway for providers with BCBA certification to apply for and receive their LBA. Future research should be conducted at a later point-in-time to evaluate if these legislative efforts have had a significant impact on the shortage.

Concerns from fields such as nursing have posited that shortages of providers may be related to quality of services as well as ethical service delivery (Erlen, 2001). The behavior analyst supply shortages characterized by this paper and other research may suggest that the current shortage and strain on supervisor resources could be a factor in the quality of available services; however, additional research is needed in this area. In addition to a need for more service providers, concerns about the unintentional harm and ableism in service delivery suggest a need for more ethical and humble

practitioners that center the learner's preferences and autonomy are needed. As regulators and institutions of higher education examine their roles in addressing their shortage, so too must they consider their role in training ethical practitioners that listen to concerns, reflect, and reconsider practices in a meaningful manner.

The findings of this study demonstrate that there is a major shortage of LBAs across NY and the current rate of new licensees will not meet the rising demand. Access to behavior support can be an important factor in helping students who engage in behaviors that compromise their learning and safety and that of others to access learning environments. A shortage of licensed behavior analytic providers may limit the accessibility of certain evidence-based support services and support services are central to a student's entitlement of receiving a FAPE in their least restrictive learning environment. Addressing the shortage has the potential to impact students and their families in a number of ways: (a) increased access to services and reduced wait times for services, (b) increased time for behavior analysts to engage in critically important interprofessional collaboration, (c) improved outcomes for students that not only improve behaviors that interfere with their quality of life but also access to services that affirm their identities. Public policies that align with national credentialing requirements and allow for increased flexibility in obtaining an LBA, the accessibility of more training programs, and increased awareness of ABA as a career choice are critical for increasing supply of LBAs and increasing retention of LBAs in the field.

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