





Pay Equity Among Behavior-Analytic Practitioners Who Serve Children

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Accepted: 30 November 2022 / Published online: 18 January 2023

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Abstract

Pay disparities have numerous adverse effects upon organizations, employees, and clients, which can affect the organization's ability to deliver services, including culturally responsive services. Evidence is accumulating that pay inequity, particularly among females and males, is present within the field of behavior analysis (Li et al., 2018; Vance & Saini, 2022). The purpose of the present study was to examine the annual income of Board Certified Behavior Analysts (BCBA) and doctoral-level BCBA (BCBA-Ds) who work with children, with a particular focus on the impact that salary practices have on the provision of services to this age group. A survey was distributed to collect information regarding annual income, demographics, and various aspects of service delivery. The sample included 236 (96.7%) BCBA and eight (3.3%) BCBA-Ds who had been in the field an average of 11.3 years ($N=244$). Annual income for female BCBA and male BCBA was \$74,888 and \$79,140, respectively. For those who served children and adolescents, female respondents earn an annual average of \$75,840, while male respondents earn an average of \$74,673. The annual incomes of female BCBA that served urban, rural, and combined rural and urban regions were \$76,931, \$69,198, and \$77,199, respectively. The observed differences between service regions were statistically significant, whereas the difference observed between females and males was not. Considering this, females made less than male counterparts in nearly every comparison, which is alarming. The present study adds to the growing list of observations indicating that a change in salary practices is needed to improve behavior-analytic service delivery to clients.

Keywords Pay disparity · Pay gap · Wage gap · Gender · Disparities

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Within human services, behavior-analytic practitioners serve numerous age groups, races, ethnic groups, gender identities, geographic locations, and more to increase socially significant behavior change. From 2010 to 2021, the demand for Board Certified Assistant Behavior Analysts (BCaBAs), Board Certified Behavior Analysts (BCBAs), and doctoral-level BCBAs (BCBA-Ds) has significantly increased. Specifically, an over 64,300% increase has been observed for BCaBAs and an over 5,800% increase has been observed for BCBAs and BCBA-Ds (Behavior Analyst Certification Board [BACB], 2022). Despite the increased demand, discourses on pay equity within the field have emerged, which can have a detrimental impact on the outreach of behavior analysis to diverse populations, including the provision of culturally responsive services. Globally, pay equity has historically been a socially significant issue, which garnered federal attention in the United States (U.S.) in 1963 with the signing of the Equal Pay Act by former President John F. Kennedy (National Equal Pay Task Force, 2013). This legislation guaranteed equal pay for women and men performing the same work with the same employer.

The Equal Pay Act also set the tone for other federal and state laws to pass, including the Civil Rights Act of 1964, which prohibited discrimination based on one's sex, race, color, national origin, and religion (U.S. Equal Employment Opportunity Commission, n.d.). Considering these landmark efforts, significant changes have been observed in relation to the reduction of gender disparity in the workforce and general educational attainment. For instance, according to Toossi and Morisi (2017), the presence of women in the labor force has increased over the years, reaching a peak of 60% in 1999. Although data have demonstrated a decline in this trend, 56.7% of the labor force consisted of women in 2015, and women are still projected to account for most of the labor force (i.e., 55.8%) by 2024. In addition to increases in female participation in the workforce, women's educational attainment has also increased. Specifically, women in the U.S. aged 25 years and over obtained more bachelor and master's degrees when compared to men in 2019 (U.S. Census Bureau, 2019).

Unfortunately, only a marginal decrease in pay equity has been observed following the passage of these laws. Since the signing of the Equal Pay Act of 1963, the pay gap has not narrowed substantially. Specifically, women earned 60% of men's pay in 1963, compared to women earning 77% of men's pay in 2011 (U.S. Census Bureau, 2012). Much of the current research indicates that pay inequity is still present and primarily impacts women (National Equal Pay Task Force, 2013), despite changes in women's participation in the workforce and increased educational attainment over time.

Generally, research has indicated that several factors influence pay inequity, including, but not limited to, differences in industries or occupations, as well as differences in experience and hours worked. In their analyses, Hegewisch and Hartmann (2014) reviewed occupational segregation and occupational integration from the past several decades and found differences in pay due to differences in industries or held occupations. Within predominantly female workforces (i.e., over 75% female), such as teachers and nurses, wages and benefits were lower when compared to predominantly male workforces, such as lawyers and engineers. Further analyses indicated that females' median hourly earnings were lower when compared to males'

median hourly earnings across all types of occupations (i.e., predominantly female workforces, integrated workforces, and predominantly male workforces). These differences in median hourly earnings were observed across all skill levels (i.e., low, medium, and high; Hegewisch & Hartmann, 2014). The one noted exception from Hegewisch and Hartmann (2014) found higher female median hourly earnings in predominantly female occupations that also required high skills (i.e., required at least a four-year college degree). Specifically, women's median hourly earnings were calculated at \$24.04, and men's median hourly earnings were calculated at \$23.85.

Remuneration Among Helping Professionals who Support Children

Differences in wages between females and males are evident overall, as well as within specific disciplines, including predominantly female professions or those that work to support children (e.g., teaching, school psychology, social work, etc.). According to Hegewisch and Barsi (2020), female elementary and middle school educators earn \$1,042 per week, while male counterparts earn \$1,161 per week, despite women accounting for 79.8% of the profession. Moreover, female teacher assistants earn \$570 per week, while male teacher assistants earn \$707 per week.

Similar differences are seen within the field of school psychology. Specifically, Crothers et al. (2010) examined salaries and promotion negotiation practices of practitioners and university instructors in school psychology. Using a survey, researchers asked respondents about their salary, negotiation practices, and job satisfaction. Even when controlling for years of experience and educational attainment, results suggested that female respondents earned less than male respondents. Considering that school psychology is a predominantly female profession (87% in 2020; Goforth et al., 2021), the findings of lower female pay is in alignment with the findings of Hegewisch and Hartmann (2014), who reported that males earn more than females in predominantly female occupations. One noteworthy finding was that male respondents were more likely to negotiate for promotions within their place of employment. The findings of Crothers et al. raise important considerations for which behaviors are related to wage increases, such as salary negotiation and consulting others to prepare for the negotiation process. Although a two-way contingency analysis revealed that 66% of both female and male respondents reported negotiating their salaries, females were more likely to perceive contacting punishment for engaging in such practices due to their gender.

Social work is another profession that is predominantly female and works with children. According to the U.S. Bureau of Labor Statistics (2022), 86.8% of child, family, and school social workers were female in 2021. Much like other predominately female professions, differences in remuneration are observed among social workers regardless of their area of professional emphasis (e.g., hospitals and medical centers, government agencies, etc.). Specifically for social workers in school settings (K–12th grade), women had the lowest annual salary (\$38,000), while men had the highest annual salary (\$92,700; National Association of Social Workers [NASW], 2011). Lewis (2018), this pattern in pay difference has been observed from 1980–2014, particularly considering that social workers who identified as Black/African American, Latino/a/e/x, or female earned less than their white male counterparts who worked the same number

of hours in the same state and had the same age and educational attainment, which can have detrimental impacts on the field and populations served.

In 2019, Li and colleagues were the first to inform on remuneration in behavior analysis. Through an examination of publicly available salary data for faculty members teaching in programs accredited by the Association for Behavior Analysis International (ABAI), Li et al. (2019) noted that the highest reported salary was earned by males across all academic ranks, even though there were more females with ranks as assistant professors and associate professors. Although data on years in academic rank, primary area of professional emphasis, success in obtaining funding, years to promotion, and other measures related to productivity were not collected, Li and colleagues' findings suggest that there is a gender pay gap for faculty teaching in ABAI accredited programs.

With a focus on behavior-analytic practitioners certified by the BACB, Vance and Saini (2022) evaluated the impact of race (categorized as minority and non-minority) and gender (i.e., male, female, and non-binary) on remuneration for these certificants. Overall, results found that there is a pay gap, particularly for Registered Behavior Technicians (RBTs) and female minorities. Particularly, Vance and Saini found that, on average, male certificants earned more than their female counterparts, except at the doctoral level (i.e., BCBA-D). Additionally, female minorities, on average, earned less than males across all levels of certification and regardless of their race and ethnicity. These findings are noteworthy, since behavior analysis is a predominantly female field (i.e., as of November 10, 2022, 86% of Board Certified Behavior Analysts [BCBAs] and BCBA-Ds are female; Beaulieu et al., 2019; BACB, n.d.a; Conners et al., 2019; Nosik et al., 2019; Vance & Saini, 2022).

Impacts of Pay Inequities

The impact of salary inequity is far-reaching and can have deleterious effects on areas related to culturally responsive pedagogy (CRP) and job performance, to name a few. A conceptual framework proposed by Ladson-Billings (1995), CRP highlights three foundational practices that effective educators can follow when serving students from different racial, ethnic, economic, linguistic, and disability groups: (1) academic success, (2) cultural competence, and (3) critical consciousness. With academic success, environments that are conducive to successfully navigating academic environments and academic careers (e.g., teaching students the essential response classes to succeed in academic settings) can be fostered (Ladson-Billings, 1995). Next, the characteristic of cultural competence highlights the importance of students preserving their own cultures (e.g., languages/dialects, music, food), yet acting in accordance with the majority culture (e.g., white, middle-class, English-speaking, non-disabled groups) when needed, which may differ from their personal cultures. Finally, Ladson-Billings (1995) describes critical consciousness as educators incorporating social issues into their educational curriculum to create opportunities for students to reflect on or challenge their own social viewpoints.

Although Ladson-Billings's (1995) CRP framework was originally based on educators working with Black/African American students, it applies to students from

various racial, ethnic, economic, linguistic, and disability groups and can be utilized by behavior-analytic practitioners (Hugh-Pennie et al., 2021). Furthermore, the application of CRP allows for BACB certificants to remain ethically responsible in expanding their knowledge and repertoires to ensure cultural responsiveness and diversity in their work (BACB, 2020, 2021). According to Croen et al. (2017), children with autism spectrum disorder (ASD) between the ages of 5 to 12, those with private health insurance, and individuals receiving 10 or more hours a week of behavioral health treatment, such as ABA, are more likely to engage in such treatment. Yet, children with ASD who have public insurance or whose mothers have a bachelor's degree, respectively, receive less than 15 h of individual behavioral health services or classroom-based behavioral health services (Nguyen et al., 2016).

In 2021, Black/African American children (42.7%) and Hispanic/Latino/a/e/x children (37.0%) were the two largest racial/ethnic groups with public health insurance (Keisler-Starkey & Bunch, 2022). Moreover, individuals from racial or ethnic minority groups experience increased barriers in accessing ASD services (Angell et al., 2016; Castro-Hostetler et al., 2021; Liptak et al., 2008; Magaña et al., 2016; Thomas et al., 2007). As professionals who serve children, including those who come from historically underrepresented backgrounds, BACB certificants must consider the unique needs of those they serve to cultivate culturally responsive, inclusive, and empowering environments. However, to work toward such a goal, equal compensation should be provided to allow for fair living wages, which can meet the demands of BACB certificants and prolong the sustainability of the field.

In addition to the application of CRP within ABA, pay inequity may also impact job performance. In an experimental analysis of pay inequality on job performance of individuals employed at a manufacturing facility that assembled a variety of products, participants were randomly assigned to either homogenous compressed wages or heterogenous wages (Breza et al., 2018). Participants in the heterogenous pay group that earned lower amounts than peers for the same work (a) reduced their output by 52%, and (b) were 13.5% less likely to attend work. This can suggest that pay inequality may make escape from work more probable. Escape could take many forms, including not completing assigned work, calling in sick, looking for other forms of employment, or even leaving the workforce altogether. Escape can have meaningful impacts on the ability of an organization to deliver services, which can impact learning outcomes, in the case of ABA. It almost goes without saying that high rates of employee turnover also negatively impact organizations.

Considering the data and aforementioned factors that can influence pay disparity, it is evident that numerous variables are involved. As a discipline, behavior analysis can analyze and minimize variables that promote and maintain practices such as pay disparity. Although Li et al. (2019) provided data on faculty salaries in behavior analysis according to gender, and Vance and Saini (2022) provided data on salaries of practitioners that are certified by the BACB according to gender and race/ethnicity, data on differences in remuneration of certificants by gender, geographic locations served, and age groups served (particularly children) are not available. An emphasis on geographic locations served by BCBA and BCBA-Ds is necessary, as some research has shown that children with ASD who receive ABA-based services and reside in metropolitan (i.e., urban) areas have greater access to BCBA (Yingling et al., 2021a, b, 2022),

while other research has shown that white families living in geographic areas with higher median household incomes have increased availability of behavior-analytic services and that access to ABA-based services is affected by structural racism (Broder-Fingert et al., 2020; Čolić et al., 2021). As a result of the discrepancies in these results, further research on pay disparities is needed, especially for maintaining culturally responsive services for children living in impoverished/disenfranchised communities.

According to the results of Li et al. (2019) and Vance and Saini (2022), it is apparent that a pay disparity does exist, which requires that it be quantified and tracked over time if solutions are to be found. Therefore, the purpose of the current study is to utilize a more homogeneous sample and identify if there are pay disparities between BCBA-Cs and BCBA-Ds who work with children (ages 0–21)¹. Additionally, the current study expands on Vance and Saini (2022) by accounting for gender (i.e., male, female, and nonbinary) and practice location (i.e., urban, rural, combined), and informing on the impact a pay gap can have on culturally responsive, behavior-analytic services provided to children.

Method

Participants and Recruitment

Recruitment methods for the current study included posting a recruitment flyer on behavior-analytic social media groups, use of the BACB's mass email service, and verbal communication with practitioners. Emails with an invitation to complete the survey were sent to 22,576 BCBA-Cs and BCBA-Ds via the BACB's mass email service. Of those 22,576 emails, 5,465 were opened (42%) and 309 individuals clicked the survey link (5%). After a follow-up email was sent by the BACB, an additional 212 individuals (4% of the follow-up sample) clicked the survey link. The number of respondents recruited via social media postings and verbal communication is unknown. Study procedures were declared exempt by the university's Institutional Review Board (protocol #19,141). Inclusion criteria included having provided consent, being certified as a BCBA or BCBA-D, having completed over 98% of the survey, residing in the U.S., and primarily working in a clinical setting providing or supervising behavior-analytic services. BCBA-Cs were not included in the current analysis because the primary dependent variable of interest was salary and such certificants are not paid similarly to BCBA-Cs; the inclusion of these data would cause quite a bit of variability.

From July 2019 to December 2019, a total of 595 respondents completed a 45–71-item survey (see Table 3 in Appendix A) requesting information about their gender identity, race/ethnicity, BACB certification, clients' age groups, geographic location served, employment, income, and various other factors related to salary and service delivery. The survey covered a broad range of professional activities and information, and only relevant items are presented in

¹ According to the U.S. Department of Health and Human Services (2017), many states provide child-based Medicaid services to individuals aged 0–21. Therefore, the current paper will categorize anyone 0–21 years old as “children.”

the current data set. Three respondents' data were not included in the current analysis because consent was not provided. An additional 105 respondents' data were also not included because they completed less than 98% of the survey. Data of respondents who reported living outside of the U.S. (59 in total) were not included, as their income could not be compared to respondents residing in the U.S. In total, 426 respondents reported identifying as female, male, or non-binary. Of those respondents, 244 indicated they were BCBA or BCBA-Ds and worked in a primarily clinical setting with children and therefore were included in the final data set. See Table 1 for the demographic characteristics of the sample.

Survey

The survey, which was hosted on Qualtrics (Provo, UT) and required an internet-capable device to complete (e.g., laptop, smartphone, tablet, etc.), inquired about gender, (i.e., female, male, transgender female, transgender male, gender variant/non-conforming, open option) age, educational attainment, BACB certificate status, area of professional practice (i.e., private practice, non-profit, school district, residential, private pay, government, for-profit), and finances (e.g., annual salary, optimal salary, primary source of income). Participants were also asked "What is your primary geographic work location?" and selected among rural, urban, or mixed service areas. Items were presented via single answer, multiple answer (i.e., check all that apply), fill-in, 5-point scale, and 7-point scale dimensions. The final item of the survey was reserved for respondents to provide optional feedback or comments. Respondents were allotted one month to complete the survey and could complete it across multiple attempts. Upon completion of the survey, respondents were presented with the option to enter for a chance to win one of three \$20 Walmart gift cards.

Data Analyses

All analyses were completed using the Statistical Package for the Social Sciences, version 28 (IBM SPSS; Armonk, NY) with a significance level of $p=0.05$. Annual income was the primary dependent variable, which was calculated by multiplying each respondent's calculated hourly rate by 2,080 h (i.e., 52 weeks of 40 h worked per week). The annual salaries for respondents were not normally distributed; however, the data were not transformed, as variable transformation does not necessarily need to occur in linear regression (Kim, 2015).

Independent Sample *t*-tests

Independent sample *t*-tests were conducted to determine if statistically significant differences existed in annual income between females and males and between BCBA and BCBA-Ds that serve rural, urban, and combined (i.e., rural and urban) areas. One sided *t*-tests were conducted in cases for which a clear hypothesis was generated. In this case, it was hypothesized that males would make more than

Table 1 Respondent demographic breakdown

	Female (%)	Male (%)	Rural areas (%)	Urban areas (%)	Combined areas (%)
Age					
18–25 years	83%	0 (0%)	2 (1%)	4 (2%)	2 (1%)
26–30 years	46 (19%)	5 (2%)	8 (3%)	28 (12%)	16 (7%)
31–35 years	60 (25%)	2 (1%)	8 (3%)	32 (13%)	22 (9%)
36–40 years	43 (18%)	7 (3%)	8 (3%)	27 (11%)	15 (6%)
41–45 years	28 (12%)	8 (3%)	7 (3%)	15 (6%)	14 (6%)
46–50 years	11 (5%)	2 (1%)	3 (1%)	4 (2%)	6 (2%)
51–55 years	6 (2%)	2 (1%)	1 (<0%)	2 (1%)	5 (2%)
56–60 years	6 (2%)	1 (<0%)	3 (1%)	2 (1%)	2 (1%)
61–65 years	1 (<0%)	3 (1%)	0 (0%)	1 (<0%)	3 (1%)
66+ years	2 (1%)	1 (<0%)	1 (<0%)	1 (<0%)	1 (<0%)
Race/Ethnicity					
White	175 (72%)	27 (11%)	38 (16%)	91 (37%)	74 (30%)
Hispanic or Latino/a/e/x	16 (7%)	1 (<0%)	0 (0%)	11 (5%)	6 (2%)
Black or African American	1 (<0%)	0 (0%)	0 (0%)	1 (<0%)	0 (0%)
Asian	4 (2%)	2 (1%)	1 (<0%)	5 (2%)	0 (0%)
Middle Eastern	1 (<0%)	0 (0%)	0 (0%)	0 (0%)	1 (<0%)
American Indian or Alaska Native	1 (<0%)	0 (0%)	1 (<0%)	0 (0%)	0 (0%)
Two or more ethnicities/races	12 (5%)	0 (0%)	1 (<0%)	8 (3%)	3 (1%)
Not listed	1 (<0%)	1 (<0%)	0 (0%)	0 (0%)	2 (1%)
Certification status					
Board Certified Behavior Analyst	207 (86%)	27 (11%)	40 (16%)	111 (46%)	84 (35%)
Board Certified Behavior Analyst- Doctoral	4 (2%)	4 (2%)	1 (<0%)	5 (2%)	2 (1%)
Length of time certified					
0–2 years	90 (37%)	9 (4%)	12 (5%)	55 (23%)	33 (14%)
3–5 years	50 (21%)	8 (3%)	13 (5%)	24 (10%)	21 (9%)

Table 1 (continued)

	Female (%)	Male (%)	Rural areas (%)	Urban areas (%)	Combined areas (%)
6–9 years	41 (17%)	4 (2%)	7 (3%)	22 (9%)	16 (7%)
10–14 years	23 (10%)	7 (3%)	6 (2%)	11 (5%)	13 (5%)
15–19 years	6 (2%)	3 (1%)	3 (1%)	3 (1%)	3 (1%)
20+ years	1 (<0%)	0 (0%)	0 (0%)	1 (<0%)	0 (0%)
Time in field					
0–5 years	45 (19%)	4 (2%)	6 (2%)	29 (12%)	14 (6%)
6–10 years	79 (33%)	10 (4%)	15 (6%)	40 (16%)	36 (15%)
11–15 years	46 (19%)	4 (2%)	9 (4%)	26 (11%)	14 (6%)
16–20 years	23 (10%)	5 (2%)	4 (2%)	12 (5%)	12 (5%)
21+ years	18 (7%)	8 (3%)	7 (3%)	9 (4%)	10 (4%)
Marital status					
Separated	1 (<0%)	0 (0%)	1 (<0%)	0 (0%)	0 (0%)
Married or domestic partnership	146 (60%)	26 (11%)	32 (32%)	79 (33%)	60 (25%)
Divorced	10 (4%)	2 (1%)	2 (1%)	5 (2%)	6 (2%)
Single, never married	45 (19%)	3 (1%)	5 (2%)	29 (12%)	15 (6%)
Long term	9 (4%)	0 (0%)	1 (<0%)	3 (1%)	5 (2%)
Location					
West	75 (31%)	8 (3%)	1 (<0%)	61 (25%)	20 (8%)
Midwest	48 (20%)	9 (4%)	17 (7%)	16 (7%)	25 (10%)
South	56 (23%)	10 (4%)	17 (7%)	23 (9%)	27 (11%)
Northeast	32 (13%)	4 (2%)	6 (2%)	16 (7%)	14 (6%)
Practice location					
Urban areas	102 (42%)	13 (5%)			
Rural areas	36 (15%)	5 (2%)			
Combined	72 (20%)	13 (5%)			

Table 1 (continued)

Client age range	Female (%)	Male (%)	Rural areas (%)	Urban areas (%)	Combined areas (%)
Children (0–12 years)	61 (25%)	4 (2%)	8 (3%)	40 (16%)	18 (7%)
Adolescents (13–21 years)	4 (2%)	1 (<0%)	1 (<0%)	3 (1%)	1 (<0%)
Children + Adolescents	90 (37%)	7 (3%)	14 (6%)	46 (19%)	37 (15%)
Combined (including adults; all age ranges)	56 (23%)	19 (8%)	18 (7%)	27 (11%)	30 (12%)

Two participants selected “nonbinary” under the gender category, contributing data in the above table only in the rural areas, urban areas, and combined areas columns, for a total combined *N* of 242 in columns labeled “Female” and “Male.” One (female) participant did not indicate a practice location (e.g., rural areas), leading to a total combined *N* of 243 in columns labeled “Rural areas,” “Urban areas,” and “Combined areas.” (total sample *N* of 244 with two participants indicating nonbinary [*N*=242] and one participant not indicating a practice location [*N*=243])

females (i.e., Li et al., 2019; Vance & Saini, 2022), and rural serving BCBA-Cs and BCBA-Ds would make less than those serve urban only or combined regions. Otherwise, two-sided *t*-tests were conducted. Confidence intervals for estimates of mean differences are also included to specify the range of likely possibilities.

Linear Regression

An adjusted linear regression was conducted to test for differences in annual income between females and males and rural/urban locations. Total years in the field of behavior analysis were included in the regression because annual income increased based upon this variable. Adjusted analyses are important because they account for differences among the samples of males, females, and non-binary individuals (e.g., males had more years of experience in the field in our sample). According to guidelines of linear regressions, at least 20 participants per independent variable were included in the analysis (Austin & Steyerberg, 2015).

Results

Sample Characteristics

Demographic information for the sample is presented in Table 1. There were 211 females (86.4%), 31 males (12.7%), and two non-binary individuals (0.8%) included in the analysis ($N=244$). Most respondents identify as white (i.e., non-minority; 83.6%), with the second highest race/ethnicity being Hispanic or Latino/a/e/x (7.0%). The average age of respondents was 37.2 years, and many respondents were married or in a domestic partnership (70.5%).

The sample comprised 236 (96.7%) BCBA-Cs and eight (3.3%) BCBA-Ds, with the average length of time in the field of behavior analysis being 11.3 years. Most respondents served clients in urban areas (47.5%), followed by clients in both rural and urban areas (i.e., combined; 35.2%). Fewer respondents served clients in rural-only areas (16.8%). Regarding region of the U.S., respondents were largely from the west.

Compared to females, male certificants were older (40.3 years for males, 36.4 years for females) and had more years of experience in the field of behavior analysis (15.5 years for males, 10.7 years for females). However, female certificants were more likely to work exclusively with children (28.9% for females, 12.9% for males). Certificants who served rural and combined areas were older than those who served urban areas (38.6 vs. 35.6 years). Additionally, rural certificants had been in the field slightly longer than those who served urban and combined areas. Compared to urban (21.6%) and rural/urban certificants (13.4%), rural certificants were much less racially/ethnically diverse (7.3%). Rural certificants, compared to urban certificants, were less likely to serve only children (19.5 vs. 34.5) and more likely to serve a wider age range of clients (78.0% vs. 62.9%).

Annual Income

Annual income by sample characteristics is shown in Table 2. Mean annual income (\pm Standard Deviation) was \$76,094 (\pm \$25,899), overall. Annual income for females,

Table 2 Average salary based on demographic characteristics

	Female average annual salary	Male average annual salary	Rural average annual wage	Urban average annual wage	Combined average annual wage
Race/Ethnicity					
Non-Minority	\$74,089	\$78,741	\$67,875	\$76,261	\$76,095
Minority	\$82,941	\$93,976	\$89,629	\$79,965	\$91,145
Certification status					
Board Certified Behavior Analyst	\$74,888	\$79,140	\$69,204	\$75,548	\$77,895
Board Certified Behavior Analyst- Doctoral	\$112,400	\$91,285	\$80,000	\$110,628	\$90,800
Time in field					
0–5 years	\$64,824	\$73,500	\$66,068	\$63,793	\$68,904
6–10 years	\$72,406	\$79,652	\$62,946	\$77,443	\$71,895
11–15 years	\$80,289	\$62,861	\$75,088	\$82,621	\$76,130
16–20 years	\$84,527	\$115,512	\$69,150	\$80,748	\$106,343
21 + years	\$93,156	\$72,800	\$79,307	\$97,119	\$82,999
Location					
West	\$79,718	\$79,416	\$80,000	\$79,077	\$82,773
Midwest	\$67,614	\$85,755	\$65,978	\$72,477	\$72,001
South	\$75,554	\$74,414	\$69,892	\$75,164	\$79,015
Northeast	\$78,001	\$87,663	\$76,392	\$78,278	\$81,135
Practice location					
Urban areas	\$76,931	\$80,188			
Rural areas	\$69,198	\$71,400			
Combined	\$77,199	\$84,806			
Client age range					
Children (0–12 years)	\$76,764	\$90,095	\$77,099	\$78,455	\$74,806
Adolescents (13–21 years)	\$58,500	\$80,000	\$40,000	\$78,000	\$40,000
Children + Adolescents (0–21 years)	\$75,840	\$74,673	\$67,440	\$75,380	\$79,369
Combined (including adults; all age ranges)	\$75,166	\$80,991	\$69,288	\$77,751	\$80,055

males, and non-binary individuals was \$75,599 (\pm \$25,668), \$80,707 (\pm \$27,734), and \$56,761 (\pm \$10,236) respectively (see Fig. 1). The annual income of certificants that served urban, rural, and combined regions was \$77,060 (\pm \$21,921), \$69,467 (\pm \$19,876), and \$78,195 (\pm \$32,395), respectively (see Fig. 2). Mean annual income for BCBAs and BCBA-Ds was \$75,221 (\pm \$24,948) and \$101,842 (\pm \$40,100), respectively.

Independent Sample t-Tests

The observed difference in annual income between males and females was not statistically significant (one-tailed $t[240]=1.024$, $p=0.153$, $M=\$5,108$, 95% CI [$-\$4,719$, $\$14,934$]). Annual income for certificants that served rural (vs. urban) locations was significantly lower (one-tailed $t[155]=1.952$, $p=0.026$, $M=\$7,593$, 95% CI [$-\92, $\$15,277$]), which was similar for rural vs combined (one-tailed $t[117.093]=1.868$, $p=0.032$, $M=\$8,728$, 95% CI [$-\527, $\$17,983$]). Differences were not observed between certificants that serve urban only vs. combined ($t[140.537]=0.281$, $p=0.779$, $M=\$1,135$, 95% CI [$-\$6,857$, $\$9,128$]). These relations remain when comparing the annual income of BCBAs only (data are not included but available upon request).

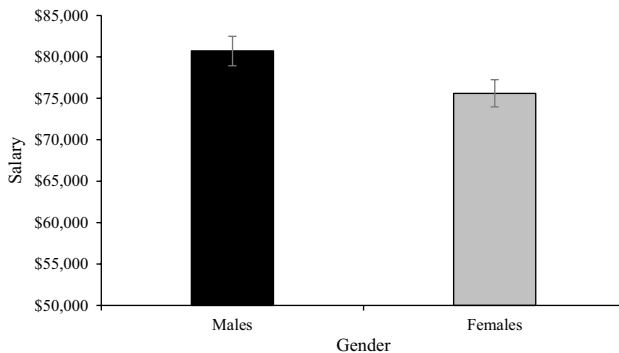


Fig. 1 Annual salary for males and female BCBAs. *Note.* Error bars represent standard errors. The difference in salaries was not statistically significant ($p > .05$)

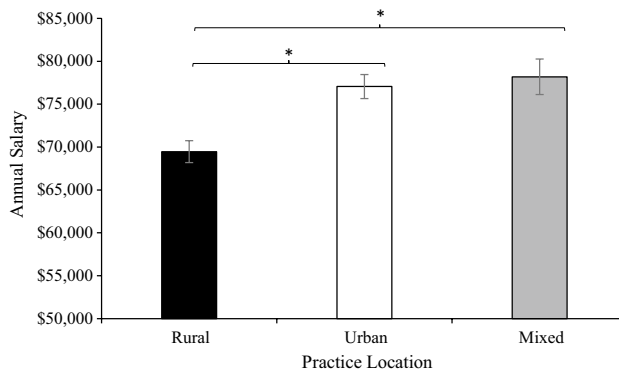


Fig. 2 Annual salary for BCBAs that provide services to rural, urban, and mixed locations. *Note.* Error bars represent standard errors. * indicates $p < .05$ (one-tailed)

Linear Regression

Data from the adjusted linear regression indicated that total years in the field predicted annual income ($b=0.280$, $t(242)=4.426$, $p<0.001$), but gender ($b=0.002$, $t(242)=0.353$, $p=0.724$) and combined (i.e., rural and urban) service location did not ($b=0.146$, $t(242)=0.146$, $p=0.884$). The model indicated that annual salaries increase \$971 each year in the field. The R^2 for the model was 0.08, which is very low, which means that when years in the field, gender, and service location predict income, the predictive utility is low. Other variables, including organization- and job-specific characteristics, are likely more relevant to annual income.

Discussion

The main purpose of the current study was to examine whether a pay disparity exists among female and male BCBA and BCBA-Ds who serve children. Results indicate that female BCBA annually earned \$4,252 less than male BCBA. It is recommended that caution is advised when interpreting this number, as males in this dataset worked in the field approximately 4.7 years more than females, and this difference was not statistically significant. Moreover, results suggested that male respondents earn a higher salary when serving urban areas, rural methods, and combined geographical locations. Finally, female respondents who primarily serve children and adolescents (i.e., 0–21 years old) make \$1,167 more than their male counterparts who serve the same age group.

With the prevalence of ASD (Center for Disease Control & Prevention, 2022) and developmental disabilities in children of various backgrounds (Zablotsky et al., 2019) increasing over time in the U.S., the necessity for services to support children with these diagnoses is likely to increase, especially in relation to CRP. Although the number of BCBA and BCBA-Ds has grown exponentially on a global scale (from 28 in 1999 to 54,223 in 2021; BACB, n.d.b), region-specific certificant data indicate that there are more BCBA and BCBA-Ds in the U.S. and certain regions of the U.S. Particularly, California (8,346), Florida (5,556), Massachusetts (3,326), Texas (3,290), and New Jersey (2,709) are among the states that have the most BCBA and BCBA-Ds as of October 2, 2022. Although these states are in the west, south, and northeast parts of the U.S., disproportionate access to such professionals is highlighted for states in the Midwest and other areas.

According to Frey (2021), Hispanic/Latino/a/e/x youth have grown from 12.2% of the population in 1990 to 25.7% in 2020, making up the largest ethnic group in the U.S. Furthermore, Black/African American children account for the largest racial demographic in southern states such as Louisiana and Virginia, while Hispanic/Latino/a/e/x youth are highly represented in California, Arizona, New Mexico, Nevada, Texas, and Florida (Frey, 2021). Considering that California, Florida, and Texas are among the states that have the most BCBA and BCBA-Ds, children in these states are likely to have access to various clinicians, which affords the option of switching providers if clinical needs are not being met. This can be helpful for children receiving ABA-based services, particularly if cultural variables are not being considered in the provision of services. At the same time, clinicians residing

in these states may have the option to switch employers if they are unsatisfied with remuneration, work environments, etc. This can also be helpful for BCBA-Cs and BCBA-Ds when aiming to ensure fair wages and/or work environments; however, it can increase turnover, which is problematic for families being served.

Per the BACB (2022), a 5,852% demand increase for BCBA-Cs and BCBA-Ds has been observed from 2010 to 2021. These data, which were collected by analyzing web-based employment postings, also informed on the demand of BCBA-Cs and BCBA-Ds by state from 2020 to 2021. Among the top five states were Minnesota (106%), Ohio (97%), Tennessee (95%), New Jersey (81%), and Indiana (80%), which are states in the Midwest (Minnesota, Ohio, and Indiana), mid-south (Tennessee), and northeast (New Jersey). Results from the current study found that female respondents residing in the Midwest, and respondents residing in the Midwest and serving rural, urban, or combined areas earn less than their counterparts. Specifically, the current study found a \$7,592 difference in annual income between rural and urban practitioners, which was statistically significant. Despite the demand for BCBA-Cs and BCBA-Ds increasing for states in the Midwest, it will be difficult to attract BCBA-Cs and BCBA-Ds if salaries are lower, which would magnify inequities for such certificants, and children served by these certificants in rural areas, including decreased access to behavior-analytic clinicians for children living in impoverished/disenfranchised areas. Additionally, the current study found that rural certificants were less likely to only serve children and more likely to serve a wider age range of clients. This difference likely reflects the trends in rural areas that fewer people have more responsibilities simply due to having a smaller population. Under the assumption that there are also fewer resources in these geographical locations, certificants may be faced with the challenge of ineffectively individualizing services due to the high demand of services across a wide age range of clients. From a CRP perspective, this is detrimental, as opportunities to enhance academic success, cultural competence, and critical consciousness are minimized (Ladson-Billings, 1995).

Overall, data obtained from the current study are heartening, considering the results were not statistically significant. Disparities in pay in the U.S. workforce are particularly important to the field of behavior analysis because it is a predominantly female workforce (87.2% of the present sample was female; Beaulieu et al., 2019; BACB, 2022; Conners et al., 2019; Nosik et al., 2019; Vance & Saini, 2022). Specifically, the overall sample was determined to be representative of BACB certificants, based on data for gender and race/ethnicity obtained from sources such as the BACB (n.d.a), Beaulieu et al. (2019), Conners et al. (2019), Nosik et al. (2019), and Vance and Saini (2022), which indicate that the majority of certificants through the BACB are white and female. Compared to other predominantly female workforces, such as teaching, school psychology, and social work, where it is reported that males earn statistically significantly more than females (e.g., Crothers et al., 2010; Hegewisch & Barsi, 2020; NASW, 2011), results of the current study do not suggest a gender pay gap for females. Though continued monitoring of salary differences will be important (regardless of the absence of statistically significant differences in the current study), organizations and hiring managers within the field of ABA should be commended for their equitable pay arrangements.

Limitations and Areas For Future Research

Although overall results from the current study suggest the absence of a gender pay gap among BCBA-Ds and BCBA-Ds who serve children, there are some noteworthy limitations and areas for future research that should be noted. First, although the literature suggests that the current study included a sufficient number of participants and that standards were met to conduct a power analysis (Austin & Steyerberg, 2015), the sample size is small ($N=244$), compared to the over 187,880 BACB certificants as of October 3, 2022 (BACB, n.d.a). Including a larger sample and additional analyses (with particular attention to certificant type, region served, and remuneration) may highlight disparities of compensation. Second, to ensure consistency in data analysis, the inclusion criteria of the present analysis excluded participants who may have contributed meaningful data. Specifically, responses from 105 participants were removed because they completed less than 98% of the overall survey and responses from 59 participants were removed because they resided outside of the U.S. Third, although the current study inquired about the number of languages respondents spoke, the survey was only available in English, which poses constraints on data collection and analyses of BCBA-Ds and BCBA-Ds who are bi- or multi-lingual and provide services to children. Such data could begin to provide insight into whether cultural competence within the CRP framework is being enhanced for bi- or multi-lingual children, if BCBA-Ds and BCBA-Ds are integrating languages outside of English into clinical services. Fourth, data of respondents residing outside of the U.S. were not included, as an adequate comparison of incomes between U.S. and international respondents was not possible. Again, access to these data may begin to inform on the integration of non-Western cultural values into ABA-based services.

The amount of time to complete the survey could have also served as a limitation. Data collected by Qualtrics (n.d.), the platform used in the current study, indicated that surveys exceeding 12 min on a computer and 9 min on mobile devices begin to see lower completion rates. Throughout recruitment and within the consent form, respondents were informed that the survey would take 15–20 min to complete. It is possible that given the longer completion time, the numbers of respondents to fully complete the survey was impacted and subsequently decreased the sample size. In other words, the length of the survey likely increased the rate of attrition.

An additional limitation of the current study relates to practitioners in the field of behavior analysis who do not hold BACB certification but deliver services to children. Although four individuals without an active BACB certification responded to the survey, they were excluded due to the inclusion criteria. In general, individuals without BACB certification but who practice behavior analysis are a difficult demographic to reach if they are not connected to professional organizations (e.g., the BACB, ABAI). Consequently, the data collected from uncertified individuals is limited, but warrants continued inclusion within future related studies.

A final limitation is related to the meaningfulness of salary across individuals and their geographic location. Per the U.S. Bureau of Labor Statistics (2013), rural households in 2011 earned approximately \$16,000 less per year than urban households, spending more money on items such as prescription drugs and transportation.

The costs of items such as housing and food also vary by region (e.g., the west coast versus the Midwest versus the east coast). A difficulty in analyzing salary disparities relates to the differences in costs across the U.S., as salaries may be increased in some regions due specifically to cost of living and decreased in other regions where costs are lower. Furthermore, data may need to be analyzed on a more granular level to determine disparities within regions, including within rural and urban locations.

There are several areas for future research given the results obtained from the current study. For instance, future research should assess for pay disparity across BCBA-Cs and BCBA-Ds who identify as cisgender, transgender, and gender non-conforming and provide services to children. There was a < 1% response rate from individuals who identified outside the female and male gender binary, which did not allow for inclusion of such data in most analyses of the current study, except for practice location. Research indicates that transgender and gender diverse individuals are four times more likely to report having an income below poverty lines, even if they have higher educational attainment (Movement Advancement Project & Center for American Progress, 2015). Therefore, it is necessary to examine any pay disparities with such populations. Though the field of behavior analysis has increased its awareness and responsiveness related to gender identity (e.g., Capriotti & Donaldson, 2022; Leland & Stockwell, 2019; Petronelli & Ferguson, 2022), it may be challenging to collect data from individuals who identify as transgender or gender non-conforming due to low prevalence. However, this does not diminish the significance of reaching this population, especially with the population's lived experiences to inform on a framework of CRP within behavior-analytic services.

In bridging intersectional feminism and behavior analysis, DeFelice and Diller (2019) posit that more than one variable (e.g., gender, race/ethnicity, and disability collectively) should be simultaneously considered when attempting to understand the experiences of individuals, especially given these combined variables have been largely disregarded in the past. As the U.S. and community of BACB certificants continue to diversify across various demographics, a movement toward intersectional analyses will be needed to inform on the experiences and contingencies that shape the participation and remuneration of such certificants in the field. The current study is among the few to do this, which speaks to the urgency of future researchers to follow suit. In a time when topics of racism and racial prejudice in behavior analysis have also increased in awareness and responsiveness (e.g., Hilton et al., 2021; Mizaël et al., 2021; Saini & Vance, 2020, etc.), the results of the current study indicate that respondents who identify as minorities have higher annual salaries than non-minority respondents across gender (i.e., male and female) and geographic location served (i.e., rural, urban, and combined), which again suggests the presence of pay equity within the clinical practice of behavior analysis. Should such future analyses indicate a pay disparity between minority and non-minority respondents, an examination of maintaining contingencies would be necessary to modify such environments not only for the purpose of maintaining pay equity and retaining minority BACB certificants, but also for meeting the cultural needs of minority individuals receiving behavior-analytic services.

Future research should also attempt to identify any differences among the experiences (including compensation) of behavior analysts beyond gender (e.g., the current study and Vance & Saini, 2022) and race/ethnicity (e.g., Vance & Saini, 2022), such as sexual orientation, socioeconomic status, and other characteristics that may impact experiences and opportunities within the field. Although the majority of BACB certificants reside in the U.S. (BACB, n.d.b; Deochand & Fuqua, 2016), it is important to account for the experiences and potential pay disparities of BACB certificants and behavior-analytic practitioners outside of the U.S. Through adopting an intersectional and behavior-analytic lens (DeFelice & Diller, 2019), country-specific contingencies/variables that contribute to pay disparity can be considered, particularly if those contingencies/variables are not present within the U.S. If pay disparities in and out of the U.S. are identified by regular and rigorous data collection, a scientific approach can be utilized to ameliorate such disparities.

Future researchers may also consider examining the remuneration of BCBAs and BCBA-Ds during the COVID-19 pandemic, as research suggests lapses in pay for women during the pandemic due to childbirth, childcare, or elderly care may exist (Zamaroo & Prados, 2021). Data for the current study were collected between July 2019 and December 2019, which was prior to COVID-19 being declared a pandemic on March 11, 2020 (World Health Organization, 2020). It may be that BCBAs and BCBA-Ds took unpaid leave during the pandemic, even with the possibility of working remotely. For women specifically, this may be in addition to increased expectations and/or responsibilities to care for children or elderly loved ones. As there are various contingencies involved, this is an area that future researchers are encouraged to explore to continue investigating potential pay disparities. Furthermore, differences in remuneration and their impact on behavior-analytic services for children during the pandemic can be addressed. Although it can be suggested that more children were/are receiving ABA-based services during the pandemic given the effective use of telehealth for children with ASD (Nohelty et al., 2021), the question remains whether the salaries of BCBAs and BCBA-Ds were impacted.

A final area of future research relates to identifying whether any pay inequities exist among other BACB certificants, namely RBTs and BCaBAs, who provide direct services to children. As of October 3, 2022, there are 123,960 RBTs and over 5,570 BCaBAs (BACB, n.d.a). Combined, RBTs and BCaBAs outnumber BCBAs and BCBA-Ds. Although Vance and Saini (2022) found that non-minority male RBTs earn more than non-binary RBTs and minority female RBTs, data were not collected on the age groups with which the respondents work. Informing on whether pay gaps are present among RBTs and BCaBAs who serve children can have significant implications for remuneration practices, given behavior technicians' level of satisfaction with training, supervision, financial compensation, and different aspects of the job predicted their intent to leave their position of employment, which can in turn impact the provision of services (Kazemi et al., 2015), including those that work from a CRP framework.

In light of these limitations and areas for future research, the intersection of CRP and ABA-based services cannot be possible if BCBAs and BCBA-Ds are not being fairly compensated regardless of their gender, the age groups they serve, the locations in which they practice, etc. As a profession that identifies functional

relationships, behavior analysis must continuously examine such relationships to maintain pay equity. In conjunction with this, the field is also encouraged to examine environmental variables that are hindering and/or promoting the use of a CRP framework within clinical services. In a survey conducted by Beaulieu et al. (2019), most BCBA and BCBA-D respondents reported moderate to high levels of comfort and moderate to high skill levels in working with culturally and linguistically diverse clients, despite their report of little to no training in this area, which suggests a paucity of coursework and training across graduate training programs, employers, and continuing education that is focused on providing culturally responsive care.

Thankfully since then, numerous resources have become available for behavior analysts to consult, such as how each characteristic of CRP can overlap with ABA, particularly for behavior analysts working in educational settings (Hugh-Pennie et al., 2021), ways that the field can move toward becoming anti-racist (Levy et al., 2021), a conceptualization of power and privilege (Louisiana Contextual Science Research Group, 2022), how the field can move away from disciplinary centrism and toward humble behaviorism (Kirby et al., 2022), ways that behavior analysts can engage in self-assessment of awareness, knowledge, and skills in the context of culturally responsive services (Beaulieu & Jimenez-Gomez, 2022), how cultural responsiveness can be used in behavior-analytic research and practice (Jimenez-Gomez & Beaulieu, 2022), and much more, which all can maintain the provision of ABA-based services informed by a framework of CRP. Despite the field's continued journey toward creating culturally aligned, sustainable, and inclusive environments, particularly for historically underrepresented communities, some of the work can be ameliorated by maintaining pay equity and continuously educating oneself on best practices to support children/individuals of various racial, ethnic, economic, linguistic, and disability groups.

To the knowledge of the authors, the current study is among the first empirical studies on the wages of BCBA-Ds, particularly for those who serve children. It is heartening to see that within a predominantly female field, such BACB certificants are being compensated fairly and equitably. Although statistically significant differences were not found in pay between males and females (e.g., the current study and Vance & Saini, 2022), differences in pay among gender were seen, which is alarming. Moreover, a statistically significant difference was detected for BCBA-Ds who served rural areas in the current study. These findings highlight the necessity for additional and more comprehensive research to ensure that the profession of behavior analysis continues to work toward and maintain fair and equitable practices. By offering fair and compelling wages, the field of behavior analysis can attract a wide range of talented individuals from varied backgrounds, which can continue the field's efforts in considering culture within services. Moreover, as the demographics and needs of the field evolve, it may be that remuneration of behavior analysts shifts as well. In considering the various biological, psychological, and emotional changes that children experience, behavior analysts have the tools to support children during these challenging times. Therefore, the utilization of our science can apply not only to traditional populations (e.g., individuals with developmental disabilities, individuals with health issues, etc.), but to our own population, where we can shape an equitable and sustainable field.

Appendix

Table 3 Qualtrics survey items

Category	Survey item	Qualtrics logic (if applicable)
Consent	Full informed consent	
Demographics	Gender identity	End survey if "no" response
	Age	
	Ethnicity/race	
	Marital status	
	Highest degree	
	Preference for professional address (e.g., Professor, Dr., Mr./Ms.)	
	Years of experience	
	Certification level (e.g., BCBA)	
	Length of time certified	
	Country of residence	
	Area of the country for current residence	Display is United States selected in previous question
	Current professional activities	
	Main emphasis of current professional activities	
	Areas of professional practice	
	Age range of clients for clinical work	
	Type of clinical practice	
	Number of languages spoken	
Membership level for Association of Behavior Analysis International (ABAI)		
Student status		
Preference for pursuing an academic career		
Previous pursuit of an academic career		

Table 3 (continued)

Category	Survey item	Qualtrics logic (if applicable)
Trigger Question Academia	Current academic and research activities	If yes, present the academia questions
	ABAI academic program	
	Type of university	
	Type of program (e.g., on campus)	
	Academic rank	
	Tenure status	
	Time spent on paid research	
	Funding for research	
	Funding sources	
	Current research participation in publications, symposiums, etc	
Trigger Question Publications	Number of peer reviewed articles	If yes, present the publication questions
	Indicate authorship positions	
	Revise and resubmit requests	
	Publications in the main ABA journals	
	Participation in presentations (for research-related activities)	
Trigger Question Presentation Employment	Number of presentations across types (e.g., invited speaker, posters)	If yes, present the presentation question
	Primary geographic work location	
	How current pay is determined	
	Months worked per year	
	Hours worked per week	
	Number of days off taken	
	Number of children under 18 years of age	
	Primary caregiver in the household	
	Who would take off work in the household if a child was sick	
	Who would take off work in the household if a child had an appointment	
Family Practices	Would extended time be taken off by the respondent to care for their child	
	Would extended time be taken off by the respondent's significant other to care for their child	
	Gender identity of partner	

Table 3 (continued)

Category	Survey item	Qualtrics logic (if applicable)
Finances	If the household is single income	
	If the respondent's income is the primary income	
	Annual salary for primary job	
	Area of work for primary job	
	Annual salary for secondary income	
	Value of money	
	Value of compensation for primary job	
	Optimal amount of money	
	Salary negotiation when starting a job	
	Raise negotiation	
	Number of times salary increase has been negotiated	
	Promotion negotiation	
	Number of times promotions have been negotiated	
	Benefit of coursework or continuing education for professional presentations	
Benefit of coursework or continuing education for writing manuscripts		
Benefit of coursework or continuing education for process of becoming an editor for a peer-reviewed journal		
Benefit of coursework or continuing education for process of becoming an associate editor for a peer-reviewed journal		
Benefit of coursework or continuing education for process of becoming a reviewer for a peer-reviewed journal		
Previous editor status		
Previous reviewer status		
Open ended feedback		
Follow Up Questions		Only display if has question was "yes"
		Only display if has question was "yes"
Feedback		

Data Availability The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Conflict of Interest All authors declare that they have no conflict of interest.

Ethical Approval Upon review from the Institutional Review Board, the current study was deemed exempt.

Informed Consent Informed consent was obtained from all individual participants included in the study.

References

- United States Equal Employment Opportunity Commission (n.d.). *Title VII of the Civil Rights Act of 1964*. Retrieved May 2, 2022 from, <https://www.eeoc.gov/statutes/title-vii-civil-rights-act-1964>
- Angell, A. M., Frank, G., & Solomon, O. (2016). Latino families' experiences with autism services: Disparities, capabilities, and occupational justice. *OTJR: Occupation, Participation and Health*, 36(4), 195–203. <https://doi.org/10.1177/1539449216666062>
- Austin, P. C., & Steyerberg, E. W. (2015). The number of subjects per variable required in linear regression analyses. *Journal of Clinical Epidemiology*, 68(6), 627–636. <https://doi.org/10.1016/j.jclinepi.2014.12.014>
- Behavior Analyst Certification Board. (n.d.a). *BACB certificant data*. Retrieved December 26, 2022 from, <https://www.bacb.com/BACB-certificant-data>
- Behavior Analyst Certification Board. (n.d.b). *Region-specific certificant data*. Retrieved October 2, 2022 from, <https://www.bacb.com/services/o.php?page=101134>
- Behavior Analyst Certification Board. (2020). Ethics code for behavior analysts. Retrieved October 5, 2022 from, <https://bacb.com/wp-content/ethics-code-for-behavior-analysts/>
- Behavior Analyst Certification Board. (2021). *RBT ethics code (2.0)*. Retrieved October 5, 2022 from, <https://www.bacb.com/wp-content/rbt-ethics-code>
- Behavior Analyst Certification Board. (2022). *US employment demand for behavior analysts: 2010–2021*. Author.
- Beaulieu, L., Addington, J., & Almeida, D. (2019). Behavior analysts' training and practices regarding cultural diversity: The case for culturally competent care. *Behavior Analysis in Practice*, 12(3), 557–575. <https://doi.org/10.1007/s40617-018-00313-6>
- Beaulieu, L., & Jimenez-Gomez, C. (2022). Cultural responsiveness in applied behavior analysis: Self-assessment. *Journal of Applied Behavior Analysis*, 55(2), 337–356. <https://doi.org/10.1002/jaba.907>
- Breza, E., Kaur, S., & Shamdassani, Y. (2018). The morale effects of pay inequality. *The Quarterly Journal of Economics*, 133(2), 611–663. <https://doi.org/10.1093/qje/qjx041>
- Capriotti, M. R., & Donaldson, J. M. (2022). “Why don't behavior analysts do something?” Behavior analysts' historical, present, and potential future actions on sexual and gender minority issues. *Journal of Applied Behavior Analysis*, 55, 19–39. <https://doi.org/10.1002/jaba.884>
- Castro-Hostetler, M., Greenwald, A. E., & Lewon, M. (2021). Increasing access and quality of behavior-analytic services for the Latinx population. *Behavior and Social Issues*, 30(1), 13–38. <https://doi.org/10.1007/s42822-021-00064-0>
- Center for Disease Control and Prevention (2022). *Autism spectrum disorder (ASD): Data and statistics*. Retrieved May 9, 2022 from, <https://www.cdc.gov/ncbddd/autism/data.html>
- Čolić, M., Araiba, S., Lovelace, T. S., & Dababnah, S. (2021). Black caregivers' perspectives on racism in ASD services: Toward culturally responsive ABA practice. *Behavior Analysis in Practice*, 1–10. <https://doi.org/10.1007/s40617-021-00577-5>
- Connors, B., Johnson, A., Duarte, J., Murriry, R., & Marks, K. (2019). Future directions of training in diversity issues in applied behavior analysis. *Behavior Analysis in Practice*, 12, 767–776. <https://doi.org/10.1007/s40617-019-00349-2>
- Croen, L. A., Shankute, N., Davignon, M., Massolo, M. L., & Yoshida, C. (2017). Demographic and clinical characteristics associated with engagement in behavioral health treatment among children

- with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 47, 3347–3357. <https://doi.org/10.1007/s10803-017-3247-5>
- Crothers, L. M., Schmitt, A. L., Hughes, T. L., Lipinski, J., Theodore, L. A., Radliff, K., & Ward, S. (2010). Gender differences in salary in a female-dominated profession. *Gender in Management*, 25(7), 605–626. <https://doi.org/10.1108/17542411011081392>
- DeFelice, K. A., & Diller, J. W. (2019). Intersectional feminism and behavior analysis. *Behavior Analysis in Practice*, 12(4), 831–838. <https://doi.org/10.1007/s40617-019-00341-w>
- Deochand, N., & Fuqua, R. W. (2016). BACB certification trends: State of the states (1999 to 2014). *Behavior Analysis in Practice*, 9(3), 243–252. <https://doi.org/10.1007/s40617-016-0118-z>
- Frey, W. H. (2021). *New 2020 census results show increased diversity countering decade-long declines in America's white and youth populations*. Retrieved October 5, 2022 from, <https://www.brookings.edu/research/new-2020-census-results-show-increased-diversity-countering-decade-long-declines-in-americas-white-and-youth-populations/>
- Goforth, A. N., Farmer, R. L., Kim, S. Y., Naser, S. C., Lockwood, A. B., & Affrunti, N. W. (2021). *Status of School Psychology in 2020: Part 1, Demographics of the NASP Membership Survey* [Data set]. National Association of School Psychologists. https://www.nasponline.org/Documents/Research%20and%20Policy/Research%20Center/NRR_2020-Membership-Survey-P1.pdf
- Hegewisch, A., & Hartmann, H. (2014). *Occupational segregation and the gender wage gap: A job half done*. Institute for Women's Policy Research. Retrieved May 2, 2022 from, <https://iwpr.org/wp-content/uploads/2020/08/C419.pdf>
- Hilton, J., Syed, N., Weiss, M. J., Tereshko, L., Marya, V., Marshall, K., Gatzunis, K., Russell, C., & Driscoll, N. (2021). Initiatives to address diversity, equity, and inclusion within a higher education ABA department. *Behavior and Social Issues*, 30, 58–81. <https://doi.org/10.1007/s42822-021-00082-y>
- Hugh-Pennie, A. K., Hernandez, M., Uwayo, M., Johnson, G., & Ross, D. (2021). Culturally relevant pedagogy and applied behavior analysis: Addressing educational disparities in PK-12 schools. *Behavior Analysis in Practice*. Advance online publication. <https://doi.org/10.1007/s40617-021-00655-8>
- Hegewisch A., & Barsi, Z. (2020). *The gender wage gap by occupation 2019 and by race and ethnicity* [Fact sheet]. Institute for Women's Policy Research. <https://iwpr.org/wp-content/uploads/2020/07/2020-Occupational-wage-gap-FINAL.pdf>
- Jimenez-Gomez, C., & Beaulieu, L. (2022). Cultural responsiveness in applied behavior analysis: Research and practice. *Journal of Applied Behavior Analysis*, 55(3), 650–673. <https://doi.org/10.1002/jaba.920>
- Kazemi, E., Shapiro, M., & Kavner, A. (2015). Predictors of intention to turnover in behavior technicians working with individuals with autism spectrum disorder. *Research in Autism Spectrum Disorders*, 17, 106–115. <https://doi.org/10.1016/j.rasd.2015.06.012>
- Keisler-Starkey, K., & Bunch, L. N. (2022). *Health Insurance Coverage in the United States: 2021* (Report No. P60–278). Retrieved October 5, 2022 from, <https://www.census.gov/content/dam/Census/library/publications/2022/demo/p60-278.pdf>
- Kim, B. (2015). *Should I always transform my variables to make them normal?* University of Virginia Library Research Data Services + Sciences. Retrieved May 2, 2022 from, <https://data.library.virginia.edu/normality-assumption/>
- Kirby, M. S., Spencer, T. D., & Spiker, S. T. (2022). Humble behaviorism redux. *Behavior and Social Issues*. Advance online publication. <https://doi.org/10.1007/s42822-022-00092-4>
- Ladson-Billings, G. (1995). But that's just good teaching! The case for culturally relevant pedagogy. *Theory into Practice*, 34(3), 159–165. <https://doi.org/10.1080/00405849509543675>
- Li, A., Gravina, N., Pritchard, J. K., & Poling, A. (2019). The gender pay gap for behavior analysis faculty. *Behavior Analysis in Practice*, 12(4), 743–746. <https://doi.org/10.1007/s40617-019-00347-4>
- Leland, W., & Stockwell, A. (2019). A self-assessment tool for cultivating affirming practices with transgender and gender-nonconforming (TGNC) clients, supervisees, students, and colleagues. *Behavior Analysis in Practice*, 12, 816–825. <https://doi.org/10.1007/s40617-019-00375-0>
- Levy, S., Siebold, A., Vaidya, J., Truchon, M., Dettmering, J., & Mittelman, C. (2021). A look in the mirror: How the field of behavior analysis can become anti-racist. *Behavior Analysis in Practice*. Advance online publication. <https://doi.org/10.1007/s40617-021-00630-3>
- Lewis, G. B. (2018). Diversity, pay equity, and pay in social work and other professions. *Affilia*, 33(3), 286–299. <https://doi.org/10.1177/0886109917747615>
- Liptak, G. S., Benzoni, L. B., Mruzek, D. W., Nolan, K. W., Thingvoll, M. A., Wade, C. M., & Fryer, G. E. (2008). Disparities in diagnosis and access to health services for children with autism: Data from the National Survey of Children's Health. *Journal of Developmental and Behavioral Pediatrics*, 29(3), 152–160. <https://doi.org/10.1097/dbp.0b013e318165c7a0>

- Louisiana Contextual Science Research Group (2022). Beyond checking: A behavior-analytic conceptualization of privilege as a manipulable aspect of context. *Behavior and Social Issues*. Advance online publication. <https://doi.org/10.1007/s42822-022-00091-5>
- Magaña, S., Parish, S., Morales, M. A., Li, H., & Fujiura, G. (2016). Racial and ethnic health disparities among people with intellectual and developmental disabilities. *Intellectual and Developmental Disabilities, 54*(3), 161–172. <https://doi.org/10.1352/1934-9556-54.3.161>
- Mizael, T. M., Coelho, C. L., Rodrigues, W. C., & de Almeida, J. H. (2021). Racial issues and behavior analysis: Experiences and contributions from Brazil. *Behavior and Social Issues, 30*, 495–513. <https://doi.org/10.1007/s42822-021-00071-1>
- Movement Advancement Project and Center for American Progress (2015). *Paying an unfair price: The financial penalty for being transgender in America*. Retrieved May 2, 2022 from, <https://www.lgbtmovement.org/unfair-price-transgender>
- National Association of Social Workers (2011). *Social Work Salaries by Gender*. Retrieved May 2, 2022 from, https://www.socialworkers.org/LinkClick.aspx?fileticket=5_8UM6PD82Y%3D&portalid=0
- National Equal Pay Task Force (2013). *Fifty years after the Equal Pay Act: Assessing the past, taking stock of the future*. Retrieved May 2, 2022 from, https://obamawhitehouse.archives.gov/sites/default/files/equalpay/equal_pay_task_force_progress_report_june_2013_new.pdf
- Nguyen, C. T., Krakowiak, P., Hansen, R., Hertz-Picciotto, I., & Angkustsiri, K. (2016). Sociodemographic disparities in intervention service utilization in families of children with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 46*(12), 3729–3738. <https://doi.org/10.1007/s10803-016-2913-3>
- Nohelty, K., Bradford, C. B., Hirschfeld, L., Miyake, C., & Novack, M. N. (2021). Effectiveness of telehealth direct therapy for individuals with autism spectrum disorder. *Behavior Analysis in Practice, 12*, 1–16. <https://doi.org/10.1007/s40617-021-00603-6>
- Nosik, M. R., Luke, M. M., & Carr, J. E. (2019). Representation of women in behavior analysis: An empirical analysis. *Behavior Analysis: Research and Practice, 19*(2), 213–221. <https://doi.org/10.1037/bar0000118>
- Petronelli, A., & Ferguson, R. (2022). Into inclusion: Increasing trans-inclusive practices with behavior analysis. *Behavior Analysis in Practice*. Advance online publication. <https://doi.org/10.1007/s40617-021-00669-2>
- Qualtrics (n.d.). *Predicted duration*. Retrieved May 2, 2022 from, <https://www.qualtrics.com/support/survey-platform/survey-module/survey-checker/survey-methodology-compliance-best-practices/>
- Saini, V., & Vance, H. (2020). Systemic racism and cultural selection: A preliminary analysis of metacontingencies. *Behavior and Social Issues, 29*, 52–63. <https://doi.org/10.1007/s42822-020-00040-0>
- Thomas, K. C., Ellis, A. R., McLaurin, C., Daniels, J., & Morrissey, J. P. (2007). Access to care for autism-related services. *Journal of Autism and Developmental Disorders, 37*, 1902–1912. <https://doi.org/10.1007/s10803-006-0323-7>
- Toossi, M. & Morisi, T. L. (2017). Women in the workforce before, during, and after the Great Recession. *U.S. Bureau of Labor Statistics*. Retrieved May 2, 2022 from, <https://www.bls.gov/spotlight/2017/women-in-the-workforce-before-during-and-after-the-great-recession/home.htm>
- United States Bureau of Labor Statistics. (2022). *Household Data, Annual Averages, Employed Persons by Detailed Occupation, Sex, Race, and Hispanic or Latino Ethnicity*. Labor Force Statistics for the Current Population Survey. Retrieved May 2, 2022 from, <https://www.bls.gov/cps/cpsaat11.htm>
- United States Bureau of Labor Statistics (2013). Expenditures of urban and rural households in 2011. Consumer Expenditure Program. Retrieved October 5, 2022 from, <https://www.bls.gov/pub/btn/volume-2/expenditures-of-urban-and-rural-households-in-2011.htm>
- United States Census Bureau (2019). *Detailed years of school completed by people 25 years and over by sex, age groups, race and Hispanic origin: 2019* [Data file]. Retrieved May 2, 2022 from, <https://www2.census.gov/programs-surveys/demo/tables/educational-attainment/2019/cps-detailed-tables/table-3.xlsx>
- United States Census Bureau (2012). *Income, poverty, and health insurance coverage in the United States: 2011* [Data file]. Retrieved May 2, 2022 from, <http://www.census.gov/prod/2012pubs/p60W243.pdf>
- Vance, H., & Saini, V. (2022). Pay equity in applied behavior analysis. *Behavior Analysis in Practice*. Advance online publication. <https://doi.org/10.1007/s40617-022-00708-6>
- World Health Organization. (2020). *WHO director-general's opening remarks at the media briefing on COVID-19 – 11 March 2020*. Author.
- Yingling, M. E., Ruther, M. H., & Dubuque, E. M. (2022). Trends in geographic access to Board Certified Behavior Analysts among children with autism spectrum disorder, 2018–2021. *Journal of Autism and Developmental Disorders*. Advance online publication. <https://doi.org/10.1007/s10803-021-05402-0>

- Yingling, M. E., Ruther, M. H., Dubuque, E. M., & Bell, B. A. (2021a). Impact of county sociodemographic factors and state policy on geographic access to behavior analysts among children with autism spectrum disorder. *Administration and Policy in Mental Health and Mental Health Services Research*, *48*, 1105–1114. <https://doi.org/10.1007/s10488-021-01120-y>
- Yingling, M. E., Ruther, M. H., Dubuque, E. M., & Mandell, D. S. (2021b). County-level variation in geographic access to Board Certified Behavior Analysts among children with autism spectrum disorder in the United States. *Autism*, *25*(6), 1734–1745. <https://doi.org/10.1177/13623613211002051>
- Zablotsky, B., Blavk, L. I., Maenner, M. J., Schieve, L. A., Danielson, M. L., Bitsko, R. H., Blumberg, S. J., Kogan, M. D., & Boyle, C. A. (2019). Prevalence and trends of developmental disabilities among children in the United States: 2009–2017. *Pediatrics*, *144*(4), e20190811. <https://doi.org/10.1542/peds.2019-0811>
- Zamaroo, G., & Prados, M. J. (2021). Gender differences in couples' division of childcare, work and mental health during COVID-19. *Review of Economics of the Household*, *19*(1), 11–40. <https://doi.org/10.1007/s11150-020-09534-7>