Self-Determination Skills of Students with Autism in Postsecondary Settings

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ABSTRACT:

Using Chao's (2016) *Self-Determination Scale for College Students*, the study examined the views of college students with autism on their level of self-determination skills. The data from 56 respondents were analyzed using descriptive statistics, *z*-scores, and multivariate analysis of variance (MANOVA). Findings showed that, on average, respondents reported mid-level self-determination, with the majority stating average levels and one-fifth stating below-to-significantly below-average skills. Based on sex/gender, race/ethnicity, college level, disclosure status, and disability, results showed varying levels within individual subscales of self-determination skills. Hispanics/Latinos had the lowest levels of self-determination skills than all other ethnic/racial groups, with below-average levels of Self-Realization, Self-Regulation, and Psychological Empowerment. First-and second-year (sophomores) students reported higher levels of self-determination skills than those in more advanced stages of their college life. Participants who self-disclosed their disability reported significantly higher levels of Self-Realization skills than those who had not. Recommendations and implications for practice and research are discussed.

INTRODUCTION

Self-determination skills and capacities have been highlighted as an essential indicator of academic success in postsecondary institutions (Accardo, 2017; Chao, 2018; Gurbuz et al., 2019; White et al., 2016). Self-determination refers to an individual's ability to make their own choices and manage their own life, which includes setting goals, advocating for self, working independently, and solving problems (Chao, 2018; Hillier et al., 2018; Oswald et al., 2018; Sayman, 2015; White et al., 2016). Little research has investigated the self-determination skills of students with autism spectrum disorder (ASD) in postsecondary settings (Cai & Richdale, 2016; Chao, 2018; Gelbar et al., 2015; Hillier et al., 2021). The limited research available has shown that, generally, students with ASD tend to lack the skills needed to meet the demands of college life (Chao, 2018; Hillier et al., 2021; Sayman, 2015; White et al., 2016). The result has been significant dropout rates among students with ASD, where data shows that more than fifty percent fail to successfully complete their postsecondary education (Chao, 2018; Gelbar et al., 2015; Gurbuz et al., 2019). Although not the only variable that impacts dropout rates, the literature suggests that the higher the levels of self-determination, the greater the connection to college life and the higher levels of retention and completion among students with disabilities (Madaus et al., 2020; Petcu et al., 2017).

Several self-determination theories have been postulated over the years, with many sharing standard components such as goal setting, problem-solving, choice-making, performance evaluation, independent living, and self-advocacy (Gelbar et al., 2020; Shogren et al., 2019; Shogren et al., 2018; Wehmeyer & Field, 2007). One commonly used theory has been the Functional Model of Self-Determination by Wehmeyer (1999). The Functional Model of Self-Determination highlights four essential characteristics of self-determined behavior. These characteristics include behavioral autonomy, psychological empowerment, self-regulated behavior, and self-realization. Behavioral autonomy includes actions in which individuals act independently and according to their preferences, interests, and/or abilities. Self-regulated behavior involves using self-management and learning strategies and goal-setting, problem-solving, and decision-making behaviors. Psychological empowerment entails learning and using problem-solving skills to achieve perceived or actual control in one's life. Control may be in three areas: self-efficacy, locus of control, and motivation. Self-real-

ization encompasses using accurate self-knowledge and self-understanding of strengths and limitations to take action (Wehmeyer, 1999). Each of the four essential characteristics is predictive of self-determination status. Wehmeyer (1999) explained that age, opportunity, capacity, and circumstance may impact the degree to which these characteristics are present.

All students, including autistic students, must possess these self-determination characteristics to succeed at universities (Accardo, 2017; Chao, 2018; Gurbuz et al., 2019; Hillier et al., 2021; White et al., 2016). Autism is a developmental disorder that impacts an individual's self-determination skills in several areas, such as the ability to self-advocate (psychological empowerment), act autonomously (autonomy), and utilize executive functioning skills (self-regulation, self-realization) (Cai & Richdale, 2016; Elias et al., 2019; Lei, 2021). For college students with ASD, the transition from high school to postsecondary can be particularly challenging as this occurs during the developmental period of adolescence to adulthood, where the use of self-determination skills remains critical to success (White et al., 2016). Researchers have highlighted the characteristics of successful college students to include having self-awareness (self-realization), being interdependent (autonomy, self-regulation), having emotional intelligence (psychological empowerment), being self-motivated (psychological empowerment), and being disciplined (self-realization, self-regulation) (Cao et al., 2024; Horton, 2015). Autistic students may face challenges in some of these areas. College students with autism may have difficulty with reciprocal conversation, accurately reading nonverbal social cues (self-regulation, self-realization), theory of mind (psychological empowerment, self-regulation), collaborative work (self-regulation, self-realization), engaging in discussions (self-regulation, self-realization), cognitive flexibility (psychological empowerment, self-regulation), planning (self-regulation, autonomy), organization (self-regulation, autonomy), self-monitoring (self-realization, self-regulation, autonomy), self-control (self-realization, self-regulation, autonomy), setting goals (self-regulation), and managing time (Burgstahler & Russo-Gleicher, 2015; Francis et al., 2017; Hillier et al., 2021; Lubin, 2018). Although college life may be stressful for most students, college students with ASD face an additional burden that may be associated with specific challenges inherent to autism (Hillier et al., 2021). White et al. (2016) explained that social challenges, such as advocating (psychological empowerment) for needed services, may be germane to the developmental

phase. These areas of difficulty may hinder college success as these are skills required to navigate life on campus (Horton, 2015). Van Hees et al. (2015) explained that autistic college students want to effectively use self-determination skills to be successful, but many simply do not know how.

While the needs of students with ASD may not change as they transition from the K-12 (i.e., primary to secondary) system to higher education, the services that they receive change. This is because the services received under the Individuals with Disabilities Improvement Education Act (IDEA) of 2004 (PL 108-446) do not automatically follow students into higher education. Legally, students can receive services as part of the Americans with Disabilities Act (1990), but to receive those services, students must self-disclose their disability. The problem lies that many students with autism choose not to self-disclose for a variety of reasons, including fear of discrimination and/or the belief that they no longer have a disability (Cai & Richdale, 2016 Van Hees et al., 2015). Those who do not self-disclose are less likely to receive appropriate support services, which may inadvertently impact their self-determination skills. Support services may provide accommodations that help students become more resilient, independent (autonomy), and confident, with 80% of students who used support services achieving their college goals (Petcu et al., 2021).

Although students with autism comprise a more significant part of the college population than in previous years, very little research has studied the level of self-determination skills of this population (Gelbar et al., 2020; Petcu et al., 2017). With the increase in the prevalence of students with ASD in higher education institutions, the level of self-determination skills needs to be known to understand better and serve students. The knowledge of self-determination may help instructors modify instruction to incorporate activities that help foster self-determination characteristics. Over the past decades, research has delved into understanding the self-determination skills of students with ASD in primary and secondary settings (Hong et al., 2011; Newman & Madaus, 2015). However, little has been done to understand the level of self-determination skills at the postsecondary level (Elias et al., 2019; Gelbar et al., 2020; Getzel, 2014). The dearth in literature combined with the increasing number of students with ASD attending college makes it imperative that additional research be undertaken (Accardo, 2017; Gurbuz et al., 2019; White et al., 2016). Therefore, the purpose of this study was to investigate the perceptions of college students with autism regarding their self-deter-

mination skills and to find out the differences in the level of self-determination skills based on sex/gender, race/ethnicity, college level, disclosure status, and disability. The following research questions guided this study:

- What is the level of self-determination skills of college students with autism?
- What are the differences in self-determination among college students with autism based on sex/gender, race/ethnicity, disability type, college level, and disclosure status?

METHOD

The researcher used a survey to gather the perceptions of college students with ASD on their self-determination skills. The participants were recruited using convenience sampling. The inclusion criteria included college students with autism, over the age of 17, and enrolled at a four-year higher education institution.

Participants

Fifty-six students from 4-year universities in the USA (in the Northeast, Southeast, Southwest, and Midwest) responded to the survey. The participants self-identified with autism. The respondents included most men (66%), with more than one-quarter of women (27%), and 7% identified as non-binary. Most participants identified as White (71%), with 14% Hispanic/Latino, 9% Black/African American, and 5% Asian. More than one-third were first-year students (38%), with 14% sophomores (second-year), 13% juniors (third-year), 21% seniors (fourth-year), and 14% graduates (masters). This is not representative of the emerging racial demographics of autistic individuals in the US, where ASD is higher among Black, Hispanic, and Asian or Pacific Islander (A/PI) children compared with White children (Centers for Disease Control and Prevention, 2023). Over half of the respondents (57%) stated they had been diagnosed with conditions comorbid with ASD, while 43% reported a diagnosis of ASD only. Comorbid disabilities included attention deficit hyperactivity disorder, hearing impairment, multiple disabilities, auditory processing disorder, visual impairment, irritable bowel movement, and emotional and behavioral disorders. Almost all participants (88%) said they had disclosed their disability to their university.

Instrument

Unlike much other research which utilized surveys designed for the K-12 setting, this study utilized an instrument designed for college students (Gelbar et al., 2020).

With permission, the survey instrument used to collect data was the *Self-Determination Scale for College Students (SDSCS)* developed by Chao (2016). This survey contained subscales grounded in the Functional Model of Self-Determination. The survey included 48 five-point-Likert-scale items (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree) measuring four self-determination subscales (characteristics), including:

- Self-Realization (SR): The Self-Realization subscale examines an individual's ability to accurately understand their strengths and limitations through self-awareness, self-perception, and self-understanding. It entailed 12 questions, including the fact that *I am aware of what help I need as a university student.*

- Psychological Empowerment (PE): The Psychological Empowerment subscale explores one's self-efficacy, self-advocacy, internal locus of control, and attributions to success. It included 12 questions, with an example being that *I believe I am able to complete tasks assigned by my university professors.*

- Self-Regulation (SG): The Self-Regulation subscale delves into one's ability to set goals, formulate plans to achieve goals, make decisions, solve problems, reflect, and make revisions to plan/behavior to meet goals. It encompassed 12 questions, such as how *I set my life goals according to my needs.*

- Autonomy (AT): The Autonomy subscale explores an individual's ability to engage in independent activity based on interests/preferences, to live independently, and to take care of responsibilities and self. It contained 12 questions such as *I can take notes and find information on my own as a university student.*

The total score of each subscale was 60, with higher scores representing higher degrees of self-determination. A score of 36 represents the midpoint level per subscale. The Total Self-Determination scores (as used in Chao et al.'s study) were generated by adding the scores in the four subscales with a possible maximum total of 240 (midpoint= 144). The psychometric properties of the SDSCS have shown good validity and reliability in other studies with students with disabilities, including autistic college students (Chao, 2016; Chao, 2018). In this study, results of Cronbach's alpha (Cronbach, 1951) showed there was moderate internal consistency within domains (all $\alpha > 0.63$).

Procedures
Before conducting the study, approval was sought from the Institutional Review Board (IRB), which evaluated whether appropriate steps would be taken to protect the rights and welfare of the human participants in the research. IRB considered ethical principles of voluntary participation, informed consent, anonymity, confidentiality, potential for harm, and results communication. Approval was obtained, and a recruitment e-mail (with study description, consent form link, and survey access) was sent to a group of educators (known to the researcher) at 4-year institutions in the US requesting a distribution to the student population. Periodic follow-up e-mails were sent to university educators to resend the standard participation invitation. Surveys were sent once a semester over a three-year period to all universities known to the researcher in the Northeast, Southeast, Southwest, and Midwest USA. Participants completed surveys via Qualtrics.

Data Analysis
Data were analyzed using descriptive statistics to examine the demographic characteristics of the participants and their level of self-determination skills. Using SPSS 29, raw scores were converted to z-scores. Z-scores were interpreted as used on the Bell Curve, where -1 to 1 scores represented average scores, 1 to 2 represented above average scores, -2 to -1 scores represented below average, and below -2 represented significantly below average (Schober et al., 2021). Z-scores were used to help give a greater universal standardized understanding of raw scores where the reader may determine the probability of a score occurring within the normal distribution.

Then, multivariate analysis (MANOVA) was conducted to test for statistically significant differences in respondents' self-determination skills based on their demographic characteristics of sex/gender, race/ethnicity, college level, disclosure status, and disability. Before running the multivariate analysis, the following assumptions were tested: normality, independent observations, level and measurement of the variables, absence of multicollinearity, and homogeneity of variance, and no assumptions were violated. There were two or more continuous dependent variables (see Tables 1 and 3). The independent variables used in the study (ethnicity/race, sex/gender, disability, etc.) all consisted of two or more categorical independent groups. Each participant in the study was counted once, confirming the independence of the observation assumption. There were no univariate outliers. When Mahalanobis Distance calculations with degrees of freedom (*df*) were calculated, none of the critical chi-square values were more significant than $p < 0.001$. An a priori power analysis was conducted using G*Power

version 3.1.9.7 (Faul et al., 2009) to determine the minimum sample size required to test the study hypotheses. Results indicated the required sample size to achieve 80% power for detecting a medium effect, at a significance criterion of α = .05, was N = 54 for a MANOVA: within factors standard model. Thus, the obtained sample size of N = 56 was adequate to test the study hypotheses. A Shapiro-Wilk test did not show evidence of non-normality (W = 0.98, p > 0.05). Additionally, a visual examination of the histogram of SDSCS and the QQ plot indicated a normal distribution supporting a parametric test. A Levene's test for equality of variances $F(8, 25)$ = 2.17, p = .07 indicated that the assumption of homogeneity assumption was not violated. Values for VIF ranged from 1.09 to 1. 25 indicated that the correlation between variables was not high enough to violate the multicollinearity assumption.

RESULTS

In response to research question one on the level of self-determination skills of college students with ASD, the findings showed that students rated all subscales slightly above the midpoint (SR: M = 42.94; SD = 7.73; PE: M = 41.82; SD = 9.64; SG: M = 46.03; SD = 7.14; AT: M = 45.25; SD = 5.97), with Psychological Empowerment (PE) being the lowest. The z-scores for the Self-Realization (SR) revealed that the majority of participants (67%) reported self-determination scores at the average level, 13% were above average, 16% were below average, and 4% were significantly below average. The z-scores for Psychological Empowerment (PE) revealed that the majority of participants (60%) reported self-determination scores at the average level, 20% were above average, 20% were below average, and 0% were significantly below average. The z-scores for Self-Regulation (SG) revealed that the majority of participants (64%) reported self-determination scores at the average level, 14% were above average, 22% were below average, and 0% were significantly below average. The z-scores for Autonomy (AT) revealed that the majority of participants (57%) reported self-determination scores at the average level, 20% were above average, 22% were below average, and 1% were significantly below average. The overall Total Self-Determination was also above the central point (M = 176.04; SD = 30.41). The z-scores for the Total-Self-Determination revealed that the majority of participants (67%) reported self-determination scores at the average level, 13% were above average, 16% were below average, and 4% were significantly below average.

In reference to research question two on differences in self-determination skills among college students with ASD based on sex/gender, race/ethnicity, college level, disability type, and disclosure status, results differed (see Table 1).

Regarding sex/gender, on average, groups rated all self-determination subscales above the midpoint, with women (M = 38.73; SD = 9.40) and non-binary students (M = 38.25; SD = 8.30) rating Psychological Empowerment (PE) the lowest. See Table 1. Overall, among all groups, the Total Self-Determination was above the midpoint (See Table 1). The z-scores showed that all participants who identified as male, female, and non-binary reported average self-determination skills on all subscales. The multivariate analysis revealed no significant difference in respondents in the four subscales based on sex/gender.

On average, based on race/ethnicity, respondents who identified as White and Black/African American rated all subscales (SR, PE, SG, and AT) the highest (see Table 1). In fact, White students scored higher than all other groups in PE and higher than all except Black/African American respondents in SR, SG, and AT. Hispanic/Latino participants rated all domains the lowest, ranging from below-to-slightly-above-midpoint (See Table 1). The lowest-rated subscale by all groups was Psychological Empowerment. Overall, among the race/ethnicity groups, the Total Self-Determination was above the midpoint for all groups except Hispanics/Latinos, who were below (M = 139.42; SD = 19.22). The z-scores showed that participants from all race/ethnicity groups, except one, reported an average level of self-determination skills on all subscales. Hispanics/Latinos reported below-average levels of Self-Realization, Self-Regulation, and Psychological Empowerment skills. Multivariate analysis revealed there was a significant difference in respondents' Self-Realization $F(3, 52)$ = 4.28, p < .01, Psychological Empowerment $F(3, 52)$ = 5.29, p < .01, Self-Regulation $F(3, 52)$ = 6.63, p < .01, and Autonomy $F(3, 52)$ = 7.74, p < .01 scores based on race/ethnicity (see Table 2).

Tukey post hoc test revealed there was a significant difference between White and Hispanic/Latino respondents in all subscales including Self-Realization (White: M = 44.40; Hispanic: M = 34.75), Psychological Empowerment (White: M = 44.07; Hispanic: M = 31.12), Self-Regulation (White: M = 44.77; Hispanic: M = 37.25), and Autonomy (White: M = 47.06; Hispanic: M = 36.30); where White participants revealed higher self-determination scores than Hispanic/ Latino respondents in all subscales. Regarding Total Self-Determination, a Tukey

Table 1. **Means and Standard Deviations of Self-Determination Subscales Per Demographic Area**

Demographic	Self-Realization		Psychological Empowerment		Self-Regulation		Autonomy		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD
Gender/Sex										
Men	44.16	8.01	43.45	9.68	46.70	7.30	45.17	6.09	179.48	27.48
Women	40.13	7.17	38.73	9.40	45.13	7.36	44.47	5.71	168.46	27.90
Non-binary	42.25	5.56	38.25	8.30	43.25	4.57	48.90	6.39	172.65	22.84
Race/Ethnicity										
White	44.40	6.60	44.07	8.34	47.77	5.97	47.06	5.33	183.30	21.84
Black / African American	45.20	8.75	43.60	10.80	47.80	7.75	47.52	6.50	184.12	33.62
Hispanic / Latino	34.75	7.24	31.12	7.62	37.25	5.57	36.30	3.24	139.42	19.22
Asian	41.66	11.59	37.33	12.85	43.33	9.45	41.20	3.21	163.52	37.07
College Year										
First-Year	44.52	6.48	45.04	8.38	49.04	5.86	46.00	5.79	184.60	22.78
Sophomore	48.00	5.45	51.00	4.40	50.12	4.45	48.30	2.86	197.42	14.41
Junior	37.85	8.15	34.71	8.47	43.57	6.94	46.10	6.77	162.23	27.89
Senior	43.75	7.99	39.33	8.45	43.66	6.80	47.80	6.52	174.54	26.56
Graduate	37.00	7.70	34.12	8.93	39.75	7.81	40.20	6.32	151.07	28.03
Disclosure										
Yes	43.04	7.77	42.18	9.67	46.38	7.16	45.77	6.12	177.37	27.48
No	42.28	8.05	39.28	9.724	43.57	6.94	41.65	3.81	166.78	26.30
Disabilities										
ASD Only	45.79	8.44	42.79	10.26	47.62	6.97	46.99	5.50	183.19	29.83
ASD +	40.81	6.51	41.09	9.25	44.84	7.13	43.94	6.15	170.68	24.46

Table 2. **Multivariate Effects by Race/Ethnicity**

Variable	Race/Ethnicity						$F_{(3, 52)}$	η^2
	White		Hispanic/Latino		Black/ African American			
	M	SD	M	SD	M	SD		
Self- Realization	44.40	6.60	34.75	7.24	45.20	8.75	4.28*	0.49
Psychological Empowerment	44.07	8.34	31.12	7.62	43.60	10.80	5.29*	0.37
Self-Regulation	47.77	5.97	37.25	5.57	47.80	7.75	6.63*	0.12
Autonomy	47.06	5.33	36.30	3.24	47.52	6.50	7.74*	0.04
Total Self-Determination	183.3	21.84	139.42	19.22	184.12	33.62	7.63*	0.02

*$p < .01$

post hoc test showed a significant difference between Hispanic/Latino (M = 139.42) and White (M = 183.30) and Black/ African American (M = 184.12) participants, respectively, where those who identified as White and Black/African American reported higher levels of self-determination skills than those who identified as Hispanic/Latino (see Table 2).

Based on their college year, on average, graduates rated all subscales the lowest, while sophomores rated all subscales the highest (see Table 1). Psychological Empowerment was rated the lowest by three of the five groups (Junior: M = 34.71; SD = 8.47; Senior: M = 39.33; SD = 8.45; Graduate: M = 34.12; SD = 8.83). The z-scores showed that all participants from all college levels reported an average level of self-determination skills on all subscales. Multivariate analysis revealed a significant difference in respondents' Self-Realization $F(4, 51)$ = 3.62, p < .01, Psychological Empowerment $F(4, 51)$ = 6.89, p < .01, and Self-Regulation $F(4, 51)$ = 4.66, p < .01 scores based on college years (see Table 3).

In the Self-Realization subscale, a Tukey post hoc test revealed there was a significant difference between sophomores (M = 48) and graduates (M = 37), where sophomores rated themselves higher than graduates (see Table 3). For Psychological Empowerment, results from a Tukey post hoc test showed a significant difference between first-year students (M = 45.04) and juniors (M = 34.71) and a significant difference between first-years (M = 45.04) and graduates (M = 34.12). Additionally, there was a difference between sophomores (M = 51) and juniors (M = 34.71), seniors

(M = 39.33), and graduates (M = 34.12) respectively. This revealed that the first-year students rated their Psychological Empowerment higher than juniors and graduates, while sophomores rated this subscale higher than juniors, seniors, and graduates. In the Self-Regulation subscale, a Tukey post hoc test revealed there was a significant difference between sophomores (M = 50.12) and graduates (M = 39.75) and a difference between first-years (M = 49.04) and graduates (M = 39.75). Also, there was a difference between graduates (M = 39.75) and first-years (M = 49.04) and sophomores (M = 50.12), respectively. In summary, the results revealed that first-year and sophomores reported higher self-regulation than graduates, whereas first-years reported higher self-regulation than sophomores. Regarding Total Self-Determination, a Tukey post hoc test showed a significant difference between graduates (M = 151.07) and first-year students (M = 184.60) and sophomores (M = 197.42), respectively. This indicates that when total self-determination scores were compared, first-year and sophomore students revealed higher scores than graduates (see Table 3).

On average, participants who self-disclosed to their universities and those who did not rate individual self-determination subscales above mid-level (see Table 1). The z-scores showed that both groups reported average self-determination skills on all subscales. Based on disclosure status, a multivariate analysis revealed a significant difference in respondents' Self-Realization $F(1, 54)$ = 6.21, p < .01 scores. Those who disclosed (M = 45.79) rated Self-Realization higher than those who had not (M = 40.81).

Table 3. **Multivariate Effects by College Year**

Variable	College Year										$F(4, 51)$	η^2
	First-Year		Sophomore		Junior		Senior		Graduate			
	M	SD	M	SD	M	SD	M	SD	M	SD		
Self- Realization	44.52	6.48	48	5.45	37.85	8.15	43.75	7.99	37.00	7.70	3.62*	0.52
Psychological Empowerment	45.04	8.38	51	4.40	34.71	8.47	39.33	8.45	34.12	8.93	6.89*	0.44
Self-Regulation	49.04	5.86	50.12	4.45	43.57	6.94	43.66	6.80	39.75	7.81	4.66*	0.41
Autonomy	46.00	5.79	48.30	2.86	46.10	6.77	47.80	6.52	40.20	6.32	1.51	0.31
Total Self-Determination	184.6	22.78	197.42	14.41	162.23	27.89	174.54	26.56	151.07	28.03	4.81*	0.11

*p< .01

When participants with only autism spectrum disorder were compared to those with ASD and comorbid disabilities, the results showed that, on average, both groups had slightly above midpoint ratings for self-determination subscales (see Table 1). The z-scores showed that both groups reported average self-determination skills on all subscales. The multivariate analysis revealed no significant difference in respondents in the four subscales based on disabilities.

DISCUSSION

One of the essential characteristics necessary to increase the probability of students with ASD success in higher education involves effectively using self-determination skills (Accardo, 2017; Chao, 2018; Gurbuz et al., 2019; White et al., 2016). Yet, few studies have examined the level of self-determination skills of college students with ASD and its impact on students' success. This study is one of the few that provides essential insight into students' self-evaluation of their self-determination skills as they navigate college.

The study's results indicated that participants had slightly above mid-level self-determination skills on average, with similar results per individual subscales of Self-Realization, Self-Regulation, Psychological Empowerment, and Autonomy. These findings are consistent with the results of Chao (2016), who studied 402 college students with disabilities, including 16 students with autism, and found that generally, students demonstrated an above-midpoint level of self-determination skills. The results also revealed that when placed on the Bell Curve, the majority of students had an average level of self-determination skills. One-fifth of students had below to significantly below-average self-determination skills, specifically in the areas of Self-Realization and Autonomy. These findings showing that students may struggle with self-awareness, self-perception, self-understanding, and independent living align with previous research, which highlighted that the primary challenges for college students with ASD include difficulties with self-sufficiency, interpersonal competence, and self-regulation (Elias et al., 2019; White et al., 2017). Postsecondary instructors may need to intentionally teach self-determination skills that promote autonomy and self-understanding if students are to improve their skills (Petcu et al., 2017). One recommendation is that skills be integrated within college courses with students with and without disabilities, as teaching skills in separate programming has had limited success (Scheef et al., 2020). This may be done by using universal design interventions (UDI) and approaches that involve designing instructional products and environments to be usable by all students (Burgstahler & Russo-Gleicher, 2015). Examples of UDI include instructors recommending the use of organizational tools, using multi-modal techniques, and engaging in behavioral modeling (Burgstahler & Russo-Gleicher, 2015; Lubin, 2018).

Another significant finding from this study was Hispanics/Latinos had the lowest levels of self-determination skills than all other ethnic/racial groups. While all other groups reported average levels of self-determination skills, Hispanics/Latinos reported below-average levels of Self-Realization, Self-Regulation, and Psychological Empowerment. No other research could be found about this (i.e., Hispanic/Latino college students with autism) particular group's self-determination skills. However, past research has shown that students with minority backgrounds face greater difficulty advocating for themselves and establishing self-efficacy (Field, 2016). Field (2016) elaborated that students with autism from culturally and linguistically diverse backgrounds may need additional support to foster self-determination skills.

Shogren et al. (2018) reported that disability and race influence self-determination scores. Their study, including almost 4000 students between the ages of 13 and 22, revealed that White students with autism scored lower on the *Self-Determination Inventory: Student Report* (which measured level of autonomy, self-initiation, pathways thinking, self-direction, control-expectancy, psychological empowerment, and self-realization) than students with ASD from other racial backgrounds. Although this is dissimilar to the findings in this study, where White students reported higher levels of self-determination skills, these results support Shogren et al. (2018) conclusion that race-ethnicity and disability may not be the only factors influencing self-determination scores. The implication is two-fold: (i) higher education personnel consider youth diversity when structuring programs to nurture the development of self-determination, and (ii) further investigation, with increased numbers of college students with autism from diverse backgrounds, specifically those who identify as Hispanic/Latino, be conducted on their levels of self-determination skills and factors that influence their self-determination skills. The findings show a need for greater support for students from diverse populations in fostering self-determination while in postsecondary settings (Shogren et al., 2018).

Additionally, this study revealed some significant differences among students based on college levels. First-year students rated higher levels of Psychological Empowerment than older students. i.e., juniors (third-year) and graduates. Sophomores (second-year) reported higher levels of self-determination skills in three areas- Self-Realization, Psychological Empowerment, and Self-Regulation- than participants in more advanced stages of their college life. Overall, the first and second-year (sophomores) students reported higher levels of self-determination skills than juniors (third-year), seniors (fourth-year), and graduates. When selecting instructional strategies to teach self-determination, college instructors may have to take into consideration students' developmental phase and college year. This is because the findings of this study indicate that levels of self-determination differ at various stages of development. Further investigation is needed to find out whether there is a correlation between the level of self-determination skills and the college level. This finding provides evidence for the need to teach self-determination skills during postsecondary education continuously.

In this study, self-disclosed participants reported significantly higher levels of Self-Realization (SR) skills than those without. The decision to self-identify demonstrates that students have some self-understanding and may explain the higher SR ratings. Therefore, parents and educators may want to emphasize the benefits of disclosing disability to university personnel to students. Research has shown that the level of each subscale affects the other (Gelbar et al., 2020; White et al., 2016). White et al. (2016) explained that high levels of self-knowledge (SR) result in students' ability to better advocate for themselves (PE), and the ability to regulate behaviors (SG) increases one's ability to be flexible, manage time, and take care of responsibilities (AT). Therefore, reinforcing one subscale may most likely positively impact another. Encouraging students to self-disclose might be one step forward in helping foster self-determination skills.

Similar to other emerging research, this study provides data that helps better understand one aspect of the life of students with autism in postsecondary settings (Chao, 2016; Chao, 2018). Understanding students' life experiences and addressing the challenges is crucial to improving the outcomes of college students with ASD (Elias et al., 2019). However, more work is needed with a wider representative sample to help comprehensively understand where college students with autism fall within the self-determination continuum. Increased research will also help higher education personnel make

more data-driven decisions when establishing programs to support/foster the self-determination skills of college students with ASD.

LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

Several limitations to this study suggest the potential direction for future studies. First, this study relied exclusively on self-reported data from a small number of participants, limiting the generalizability of the results (Elias et al., 2019). The majority of participants had self-disclosed, which is not typical of college students with ASD (Cai & Richdale, 2015; Van Hees et al., 2015), so responses may not be representative of college students with autism. Future research may examine the perspectives of a larger population and include insights from professors, support personnel, parents, and peers with/without disabilities to gain a more multi-perspective picture of students' level of self-determination. Demographic data may also be collected, including number, type, and location of universities.

Data analysis included mainly descriptive statistics so that future research may conduct more inferential variables analyses mediating for confounding variables such as age, race/ethnicity, academic discipline, and their impact on students' self-determination. Research should move beyond surveys to include interviews and focus groups to gain a deeper understanding of the levels of self-determination skills and ways to enhance these skills in postsecondary settings.

Despite these limitations, this study examines the opinions of students in postsecondary, which adds a needed perspective to the field and provides exploratory/foundational work for further investigations, which is pivotal to informing an area with scanty research (White et al. 2016). The researcher proposes continued investigation in postsecondary settings to move the pedagogy of self-determination from an exclusively K-12 phenomenon to that of everyday practice in higher education.

CONCLUSION

As the number of students with autism in postsecondary institutions continues to increase, the need to find ways to support them better becomes more urgent (Elias et al., 2019; Gelbar et al., 2020; Hillier et al., 2021). The results of this study have implications for all who are responsible for students' postsecondary success, especially college instructors who may become directly responsible for teach-

ing skills beyond their area of expertise. While teaching self-determination skills, instructors may have to consider differentiating instruction to cater to differences in race/ethnicity, college level, and disclosure status. Higher education teaching may become similar to primary and secondary schools' pedagogy of self-determination skills, where college educators explicitly provide students with ASD opportunities to learn, practice, and use Self-Realization, Self-Regulation, Autonomy, and Psychological Empowerment skills during classes. The findings offer a small but needed view of students' skills, which may be used to guide practice and support future research.

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