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The Effects of the Supplemental Nutrition Assistance Program on Community College Students' Grade Point Average, Retention, and Graduation Rates

Abstract

The purpose of this quantitative research study was to explore whether community college students who received benefits through the Supplemental Nutrition Assistance Program (SNAP) outperformed those who did not receive SNAP benefits in terms of retention, grade point average (GPA), and graduation rate. The deidentified archival data collected from the College Tracker and Free Application for Federal Student Aid (FAFSA) systems from fall 2018 through spring 2022 included a total of 4,127 sample size of 3,277 continuing students, 312 freshmen, and 538 transfer students who were either SNAP or non-SNAP recipients.

The study's results for each null hypothesis were reported as "fail to reject; not statistically significant" or "reject; statistically significant." This was determined if the p-value was either higher or lower than the predetermined significance level of 0.05. As a result, of the six findings, four were not statistically significant ($p > 0.05$), while two were statistically significant ($p < 0.05$). The results indicated SNAP affected the retention, GPA, and graduation of part-time, SNAP-receiving students versus their counterparts who did not receive SNAP. However, for full-time, SNAP-receiving students, SNAP affected retention but did not affect GPA and graduation compared to their counterparts who did not receive SNAP during the academic periods from fall 2018 to spring 2022. The study is limited by a small sample size of SNAP students and a lack of information on other potential influencing factors such as low wages, financial difficulties, and family demographics.

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The Effects of the Supplemental Nutrition Assistance Program on Community College Students'
Grade Point Average, Retention, and Graduation Rates

By

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Submitted in partial fulfillment
of the requirements for the degree
EdD in Executive Leadership

Supervised by

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St. John Fisher University

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2023

Dedication

For I know the plans I have for you,” declares the LORD, “plans to prosper you and not to harm you, plans to give you hope and a future. Jeremiah 29:11 NIV

The dissertation was not my original plan, but it was the best decision for me. During this phase of my life, I became a student of research, and the lessons I received have broadened my knowledge and understanding of research development, culture, diversity, and leadership. Throughout this journey, I am thankful for the privilege of meeting and learning from an array of diverse educators and leaders at the St. John Fisher University/Iona campus. I would like to thank my parents, sisters, niece, daughter, and my eternal love. Your prayers were instrumental in keeping my mental and physical capacity during good and challenging times. Cohort 13, you are an exceptional group of ladies who will make a difference in the world. Thank you, Sharon, Jessica, Dr. Heidel, Betsy, and Dr. Blumstein, for your expertise. There are no words to describe how grateful I am to Dr. W. Jeff Wallis and Dr. Gilbert Louis. Your dedication, sacrifices, and commitment have led me to the completion of this journey.

Biographical Sketch

Rhonda Mouton is currently the Student Life Program Manager at a community college in New York. Ms. Mouton attended the University of Phoenix and graduated with a Bachelor of Administration and Management degree in 2007. She attended the CUNY School of Professional Studies and graduated with a master's degree in business leadership degree in 2021. She came to St. John Fisher University in the summer of 2021 and began doctoral studies in the EdD program in Executive Leadership. Ms. Mouton pursued her research on the effects of the Supplemental Nutrition Assistance Program (SNAP) on community college students' grade point average, retention, and graduation under the direction of Dr. W. Jeff Wallis and Dr. Gilbert Louis and received the EdD degree in 2023.

Abstract

The purpose of this quantitative research study was to explore whether community college students who received benefits through the Supplemental Nutrition Assistance Program (SNAP) outperformed those who did not receive SNAP benefits in terms of retention, grade point average (GPA), and graduation rate. The deidentified archival data collected from the College Tracker and Free Application for Federal Student Aid (FAFSA) systems from fall 2018 through spring 2022 included a total of 4,127 sample size of 3,277 continuing students, 312 freshmen, and 538 transfer students who were either SNAP or non-SNAP recipients.

The study's results for each null hypothesis were reported as "fail to reject; not statistically significant" or "reject; statistically significant." This was determined if the p-value was either higher or lower than the predetermined significance level of 0.05. As a result, of the six findings, four were not statistically significant ($p > 0.05$), while two were statistically significant ($p < 0.05$). The results indicated SNAP affected the retention, GPA, and graduation of part-time, SNAP-receiving students versus their counterparts who did not receive SNAP. However, for full-time, SNAP-receiving students, SNAP affected retention but did not affect GPA and graduation compared to their counterparts who did not receive SNAP during the academic periods from fall 2018 to spring 2022. The study is limited by a small sample size of SNAP students and a lack of information on other potential influencing factors such as low wages, financial difficulties, and family demographics.

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Chapter 1: Introduction

Numerous community college students struggle to stay enrolled and graduate because of nonacademic barriers (Forbus et al., 2011; Gates, 2013; Gilardi & Guglielmetti, 2011; Goldrick-Rab et al., 2015, 2018; Packard & Jeffers, 2013; Troester-Trate, 2017). Six out of 10 community college students are unable to fully benefit from their attempt to pursue higher education because they do not complete their degrees despite community colleges being created to make getting a college degree more accessible for nontraditional students (Skinner et al., 2022). Many community college students are considered nontraditional because of their age, employment status, enrollment status, or family demographics, and many have emotional and physical responsibilities as caretakers for family members (Forbus et al., 2011). Community colleges recognize that most of their student populations intend to earn a degree, but the path to retention is difficult for some community college students because they lack the necessary knowledge, academic skills, and support services to successfully persist and ultimately graduate (Blanchard, 2018).

In 2017, Chellman and Truelsch found that the New York State community college student population comprised a large immigrant population, with 36% of students born outside the U.S. mainland. Further, over 42% reported an annual income of less than \$20,000 annually. Because of the added financial challenges that low-income students can face while attending classes, they are less likely to fulfill their degree ambitions than their wealthier counterparts (Goldrick-Rab et al., 2013).

Other factors, particularly nonacademic issues, may complicate students' completion of a degree from community colleges. Food insecurity is one of the challenges students face (Karp, 2016). Food insecurity impacts retention, grade point average (GPA), and graduation rates. In addition, students enrolled in college, particularly at 2-year institutions, are more likely to live in households that experience food insecurity than average students at 4-year institutions, particularly during economic downturns (Blagg et al., 2020).

Low-income community college students frequently work to pay for their own food and transportation, and they are often responsible for the food and transportation of their families (EduMed & Ferone, 2021). Nationally, 48% of community college students experience food insecurity. Cady (2014) argued that college students' food insufficiency can affect their general behavior and academic performance. These elements play a big part in keeping students in school. According to a study by Goldrick-Rab et al. (2015) of 10 community college campuses, 20% of the students were considered food insecure. According to this study, 28% of the students polled reported skipping or reducing the number of their meals as a result of a lack of funds to buy enough food. The problem arises when one has "limited access or uncertain availability of nutritional, healthy, and safe foods" (Fincher et al., 2018, p. 51) and is unable to obtain them "in a socially acceptable manner" (p. 51).

Providing an intervention, such as the Supplemental Nutrition Assistance Program (SNAP), is one way of addressing the significant problem of food insecurity on community college campuses. Such programs may alleviate the financial burdens low-income students face (Goldrick-Rab et al., 2015). However, only a small proportion of eligible students obtain SNAP benefits. In some cases, community colleges that invite outside organizations to campus to assist

with application materials and educate students about SNAP are already receiving government funding to combat hunger.

Food insecurity can have negative consequences and is associated with poor academic outcomes in college students (Patton-López et al., 2014). College students who experience food insecurity, even for brief amounts of time, suffer negative physiological and psychological effects. Food-insecure students may find it difficult to focus on their classes, affecting their GPAs and overall academic performance (Wang et al., 2019).

According to a survey by Mechler et al. (2021), college students who were food insecure were more likely to fail, drop out, or withdraw from classes. Some students' capacity to achieve academically was severely hindered. Mechler et al. (2021) highlighted:

When you are not eating enough and you are experiencing anxiety about how you're going to afford to feed yourself, you don't have much energy or focus left to devote to studying and going to class. The analysis showed that if you have two students from the same background with the same personal characteristics, where one student is food secure and the other food insecure, the student who is experiencing food insecurity is twice as likely to leave college and over one-and-a-half times as likely to fail or withdraw from a course. (p. 6)

According to King (2021), students who do not suffer from food insecurity will outperform students from the same backgrounds and who share the same personal attributes but who do suffer from food insecurity. Food insecurity has been linked to lower cognitive function, poor sleep, and concentration difficulties, all of which impact the ability to learn (Shaak, 2021). According to Shaak's (2021) study, college students who are food insecure are half as likely to graduate as their peers who are food secure.

According to Wolfson (2021), students who are food insecure are less likely to succeed in college and are more likely to fall behind their peers who are food secure. The Wolfson study followed students in colleges in the early 2000s and then again in 2015 and 2017, documenting their progress during and after college. Wolfson found that “food insecurity is not only associated with but also a contributing cause of lower educational attainment” (p. 391). Students who were food insecure had a 43% lower chance of graduating from college than their classmates who were food secure. According to McCoy et al. (2022), in the fall of 2020, 38% of 2-year college students reported food insecurity in the previous 30 days of the Hope Survey. Food insecurity is typically defined as a “household-level economic and social condition of limited access to food” (Blagg et al., 2020, p. 7). Authors in the literature have suggested further research is needed to provide data regarding how food insecurity is related to student success, given that recent studies show that between 39% and 60% of community college students report that they are food insecure (Freudenberg et al., 2019; Goldrick-Rab et al., 2013, 2015, 2018; Maroto et al., 2015; Mercado, 2017). This quantitative study compared the retention, GPAs, and graduation rates of two student groups: community college students who identified as SNAP recipients on their Federal Application for Free Student Aid (FAFSA) form and community college students who did not identify as SNAP recipients on their FAFSA forms.

SNAP Political History

SNAP, formerly the Food Stamp Distribution Program, was implemented as a government-funded program administered by the United States Department of Agriculture (USDA) in collaboration with state social service agencies to alleviate hunger and malnutrition for low-income households in 1939 (Caswell & Yaktine, 2013; Institute of Medicine, 2013). As the country experienced the Great Depression, food stamps were initiated to help distribute the

food surplus. In 1943, the program was exhausted and, in 1964, it was revamped as the Food Stamp Act of 1964.

Under President Barack Obama’s administration (2009–2017), the Massachusetts Law Reform Institute (MLRI) argued for SNAP accessibility for college students (Burnside et al., 2021; CLASP, 2021). The MLRI argued that over half of community college students are nontraditional and that SNAP rules barred students from enrollment. During the COVID-19 pandemic, the SNAP work rules were revised, and more students became eligible for SNAP benefits. In 2021, Congress passed a law to expand SNAP benefits among college students. The eligibility expansion enabled additional college students to enroll in SNAP.

Under President Donald Trump’s administration, approximately 688,000 SNAP recipients were projected to lose benefits as a result of the eligibility requirements (Treisman, 2019). The rule that adults have to work at least 20 hours a week to receive SNAP made it difficult for students to become eligible. Congress created the standard rule with traditional students in mind, which is someone entering college directly from high school, dependent upon their parents, and with no income. However, many community college students are older, they are parents, and they are less likely to have financial stability. Income, asset limits, household and immigration, and enrollment status are eligibility qualifications under the standard SNAP guidelines. These guidelines prohibit many college students from eligibility.

The Face of SNAP Recipients

Nearly 2.8 million low-income individuals living in New York State, including families, seniors, and individuals with disabilities, received food assistance through SNAP—formerly known as food stamps. Over 41 million low-income Americans with SNAP assistance were able to purchase nutritious food on a monthly basis in 2021. In New York State, benefits for SNAP

participants totaled \$4.34 billion in 2019, \$5.12 billion in 2020, and \$7.31 billion in 2021, including the short-term pandemic relief policy (Hall & Nchako, 2023). The federally funded SNAP benefits give low-income individuals and families a monthly allotment that can be used to purchase food in stores for those who are food insecure. Approximately 20% of undergraduate students who are dependent and 42% of independent students nationwide have household earnings that are below the federal poverty line (Fry & Cilluffo, 2019). Part-time college students, many of whom are adults who are full-time workers and parents, have a much lower retention rate than full-time students (Ortagus et al., 2021).

The USDA (2018) manages SNAP through its nationwide network of the Food and Nutrition Service field offices. Each household is given a monthly food budget. An allotment is the total amount of SNAP benefits received by a household each month. Because SNAP households are expected to spend approximately 30% of their own resources on food, the allotment is calculated by multiplying a client's net monthly income by 0.3 and dividing the result by the maximum monthly allotment for the household size (Hunger Solutions New York, 2022; USDA, 2022).

The Hope Center (Hilliard & Hobbs, n.d.) conducted a study recording the widespread activity of community colleges enrolling in SNAP. Nationwide, approximately 3.5 million undergraduate students with \$0 expected family contribution were made eligible for the Public Health Emergency Extension because of Congressional law. In the survey, one in three students experienced food insecurity and difficulty learning. The study sought to explore the outcome of marketing SNAP to community college students. The findings concluded that the states promoting SNAP to community college students yielded a higher enrollment rate than the states that did not promote SNAP.

Dickinson (2022) reported that numerous low-income college students are denied access to food aid for no other reason than the fact that they are enrolled in college. The study demonstrated how low enrollment in the program and food insecurity were the predictable outcomes of policy decisions intended to restrict access to both free public higher education and public assistance in the 1980s and 1990s, and they were shaped by the racialized politics of *deservingness*. The Dickinson study was based on 22 interviews that captured the experiences of food-insecure college students as they attempted to navigate SNAP. The study documented the obstacles students faced while trying to get food aid and illustrated how the regulations were being implemented in the lives of students at the City University of New York (CUNY).

Community College Food Insecurity Accessibility

Educational institutions consider the kind of support services that will help students improve their academic performance. To investigate students' improvement in academic performance, the USDA methodology uses the Adult Food Security Survey Module (AFSSM) to examine correlations between GPA and the level of food security among college students (El Zein et al., 2019). Chaparro et al. (2009) added to the body of research work presented in the studies by Alaimo et al. (2001), Frongillo et al. (2006), Gao et al. (2009), Jyoti et al. (2005), and Winicki and Jemison, (2003) by showing that community college students who are food insecure are more likely to fall into the lower GPA range (2.0–2.49) than the highest GPA range (3.5–4.0), a correlation that influences retention and graduation rates (Maroto, 2013).

The circumstances and difficulties that characterize community college students' struggle with food insecurity are shown through their day-to-day experiences, as well as through the steps they take to pursue their academic and career aspirations in the face of major obstacles (Fernandez et al., 2019). In addition, growing tuition fees and living expenses force community

college students to choose between paying for their education or their living sustenance (Center for Community College Student Engagement, 2017; Goldrick-Rab et al., 2018). For many community college students, the decision to spend money on textbooks rather than on meals is a reality (Center for Community College Student Engagement, 2017). The uncertainty of when and how one will eat their next meal is one of the most upsetting situations. Food insecurity impacts dietary, financial, and educational habits, and it is a hindrance to community college students' academic performance (Goldrick-Rab et al., 2018).

Students in college regularly cope with a variety of issues, and managing several tasks at once can be difficult. Moreover, community college students who lack access to food are more likely to experience difficulties attending classes. The Lumina Foundation funded an initiative to support on-campus support services such as lunch vouchers and food gift cards (Price et al., 2014). The initiative aimed to increase graduation rates by providing on-campus support services to address food insecurity and other unmet needs. Price et al. (2014) used the DVP Praxis Evaluation Report and conducted a study to explore the impact of supportive benefits on a community college campus. In the study, seven community colleges in six states were identified and awarded funds to expand student support services in the areas of food insecurity, transportation, and childcare over a period of 3 years to increase retention. The significance of keeping an open mind when assisting community college students in need stems from the fact that supplemental support is a critical contributor when discussing steps to reduce food insecurity (Kelly, 2022).

The goal of student support services is to ameliorate the disadvantages suffered by low-income community college students by providing resources and securing temporary solutions to food insecurity, such as using SNAP benefits. Overall, trends showed that community college

students were less likely to achieve academic success in a certificate or degree program, owing to a plethora of financial barriers. The evidence is clear: hunger negatively impacts community college students (Price et al., 2014).

Meza et al. (2018) defined food insecurity as “the limited or uncertain availability of nutritionally adequate, safe foods, or the inability to acquire personally acceptable food in socially acceptable ways” (p. 1713). Community college students are impacted by food insecurity because of their statistically higher rates of low socioeconomic backgrounds, lack of food, inadequate transportation, no cooking facilities, and inadequate cooking skills, all of which impact graduation rates.

Problem Statement

Community college students face consistent barriers to completion and retention (Forbus et al., 2011; Yu, 2015), and community college students are more likely to experience food insecurity because they frequently have to pay their rent, tuition, and other living expenses ahead of paying for food. Despite widespread agreement that obtaining a college degree is a key factor in determining social capital and health, postsecondary education’s socioeconomic goals are undermined by encounters with food poverty (El Zein et al., 2019). If these financial barriers are not addressed through external services, a significant number of community college students may have to drop out of classes and colleges (Abdul Latif Jameel Poverty Action Lab, 2020).

Community college students face unique nonacademic barriers that impact retention and graduation (Goldrick-Rab et al., 2013). One unique nonacademic barrier students face on a community college campus is food insecurity. Factors contributing to food insecurity include “poverty, high-cost housing, utility costs, unemployment, medical and health costs, mental health problems, lack of education, transportation costs, and substance abuse” (Holben, 2010, p. 1370).

Goldrick-Rab et al. (2013) urged researchers to investigate the nonacademic impediments that can lead students to leave their community colleges, such as food insecurity, in order to keep more students enrolled. The accessibility of SNAP services on a community college campus seems to be critical for maintaining students' retention, GPA, and graduation rates. To understand retention and performance, researchers must explore nonacademic barriers such as food insecurity (Lobo, 2012). The combined effects of academic institutions and social services on student access to SNAP services are limited to the extent that current models are not clear (Price et al., 2014).

According to the 2018 Healthy CUNY survey of a representative sample of CUNY community college and 4-year college students, it was estimated that 52,550 undergraduates experienced two or more of the four USDA indicators of food insecurity in the last 12 months, consisting of being concerned that they would run out of food before they could afford to buy more, cutting or skipping a meal because they did not have enough money for food, and being unable to eat balanced or nutritious meals. Furthermore, an estimated 35,440 students reported becoming hungry frequently or occasionally in the previous 12 months, the most significant USDA indication of food insecurity (Healthy CUNY, 2019).

Although many institutions are still examining the effects of food insecurity, the overall goals for students in higher education are to learn professional skills, develop a significant level of mastery within a major field of study, graduate, gain knowledge and competencies that are career oriented to become self-sufficient individuals, and find gainful employment (Price et al., 2014). The research is inconclusive on whether accessing SNAP benefits impacts students' retention, GPAs, and graduation rates.

In a 2017 research study by El Zein et al. (2019), food security status was significantly related to self-reported GPAs ($p = 0.001$). Food-secure students had a significantly higher proportion of GPAs in the 3.50–4.00 category compared to food-insecure students (53.3% versus 38.9%), while food-insecure students had a higher proportion of GPAs in the 2.50–2.59 and 2.50 categories compared to food-secure students (20.8% versus 13.4%; 8.2% versus 4.4%, respectively). When sociodemographic characteristics were controlled, food-insecure students had nearly twice the risk of having a GPA of lower than 3.00 as food-secure students ($OR = 1.91$, 95%; $CI: 1.19–3.07$).

A study conducted by Maroto et al. (2015) among two groups of community college students, utilizing the USDA's Household Food Security Survey module, revealed that students in low-income urban areas, living alone or in single-parent households, demonstrated higher rates of food insecurity. In addition, students who identified as African American or multiracial had a higher rate of food insecurity and reported lower GPA scores than those of unidentified race or ethnicity (2.0 to 2.49). Community college administrators must create strategies to address nonacademic obstacles, such as food instability, to boost retention and degree completion rates (Goldrick-Rab et al., 2013).

Maroto et al. (2015) outlined the prevalence of food insecurity among urban and suburban students. In their binary regression analysis, there was a significant correlation between food insecurity and GPA. The results demonstrated that becoming food insecure negatively affects students' GPAs. The study concluded that low GPAs and food insecurity are influenced by other factors, including childhood impairment, nutrient deficiencies, and behavioral and psychosocial issues. While the comparison in the experimental study had some flaws, the association between the variables suggested a need for further exploration into the phenomenon.

In sum, poor academic performance and achievement, such as a lower GPA and difficulty focusing on schoolwork, are frequently linked to food insecurity. Khosla et al. (2020) discovered that the effects of food insecurity go beyond GPA and restrict students' ability to set and achieve academic goals. The deleterious effects of food insecurity and the associated risks for college students underline the significance of comprehending and enhancing food security among all college students, particularly those at risk (Kim et al., 2022).

Theoretical Rationale

The student development theory and Perry's theory of intellectual and ethical development are both theories that provide insights into the cognitive and psychosocial growth of students from different perspectives.

Although the two theories approach student development from different perspectives, they are interconnected. Perry's theory of intellectual and ethical development can be seen as a subset of the broader student development theory, focusing specifically on cognitive growth. Both theories recognize the importance of creating environments that support students' development and provide opportunities for them to engage in critical thinking, reflection, and ethical decision-making. By considering both theories, educators and professionals can gain a more comprehensive understanding of students' needs and developmental processes. They can design interventions and educational practices that align with students' cognitive and psychosocial growth, ultimately fostering their overall development and success in retention, GPA, and graduation.

Student Development Theory

Student development theory is a body of human development theories focused on how individuals develop when enrolled in college coursework. Student development theory merges

physical, biological, physiological, psychological, social, and environmental factors (Walker, 2008).

Professionals at community colleges can identify and address student needs, design programs, develop policies, and foster healthy learning environments by using their knowledge of student development theory. Student development is a catch-all term used to describe the work and practice of student affairs professionals. According to Evans et al. (1998), student development theory is a process by which students grow, progress, or increase their developmental capabilities.

The student development theory is both a theory and a philosophy regarding the goals of higher education based on student growth. It refers to the progression of a student in the direction of increased complexity and proficiency. The integrated and increasingly complex aspect of student development theory necessitates mutuality, equality, cooperation, and collaboration among all stakeholders, including students, faculty, staff, and administration (University of California at San Diego, 2022). According to this theory, as students advance through their academic paths, they go through a number of phases, and their requirements and goals change as they move from one stage to the next. Unmet needs can be linked to student development theory in a variety of ways. If a student's basic requirements (such as food, shelter, and safety) are not fulfilled, he or she may have difficulty progressing through the early phases of the student development process. As students advance through the student development process, they may encounter unmet requirements linked to their academic and professional goals (Burmicky & Duran, 2022).

According to Evans et al. (1998), the study of student development theory and research validates the necessity of employing student affairs specialists in higher education settings. The

mixed-methods study offered a foundation to partner with community colleges and equip higher education professionals with the knowledge and tools needed to understand and support students at all stages of human development.

Troester-Trate (2017) examined the relationship between nonacademic obstacles, such as food insecurity, childcare and transportation, and students' persistence and retention using Tinto's (1993) student integration model. According to the study, students who received support for nonacademic hurdles persisted at the same rate as students who did not require such support. The Troester-Trate study substantiated the hypothesis that supporting students facing nonacademic obstacles is essential for their success in college and correlates with high rates of persistence and retention (Van Egmond, 2022).

Perry's Theory of Intellectual and Ethical Development

Perry's (1970) theory of intellectual and ethical development, often known as Perry's scheme, is a framework that explores college students' cognitive and moral development. This theory provides insights into how people view knowledge, authority, and morality as they advance through their educational journey. Perry's scheme suggests an array of positions or stages that people might take in response to the obstacles and complexities of higher education. Perry's theory of intellectual and ethical development describes the progression of college students through different stages of cognitive and moral growth. It begins with the dualism stage, where students perceive knowledge as absolute truths dictated by authorities. They see the world in simplistic terms and struggle with uncertainty. As they encounter diverse ideas, they transition to the multiplicity stage, recognizing the validity of multiple viewpoints but struggling to evaluate or prioritize them.

The relativism stage follows, where individuals acknowledge multiple perspectives but lack a coherent framework for evaluation. They adopt a subjective and context-dependent approach to knowledge, often encountering ethical dilemmas. The final stage is commitment, where individuals develop a nuanced understanding of knowledge, ethics, and their own values. They can critically analyze information, make informed judgments, and articulate their viewpoints with clarity and conviction.

Perry's (1970) theory allows for movement between stages and primarily focuses on college students. Perry's scheme has influenced education by guiding teaching practices and curriculum design. By understanding students' positions, educators can tailor their approach accordingly and foster critical thinking and dialogue. Perry's theory highlights the importance of creating environments that facilitate students' transition to more sophisticated intellectual and ethical frameworks.

Perry's scheme can provide insight into the experiences of community college students who face food insecurity. Food insecurity, which is defined as the lack of consistent access to nutritious and affordable food, can significantly impact a student's cognitive and moral development.

For community college students experiencing food insecurity, their primary focus may be on meeting their basic physiological needs rather than intellectual pursuits. In this context, they may find it challenging to advance through the stages of Perry's scheme. Students in the dualism stage may struggle to concentrate on their studies or engage in critical thinking when their immediate concern is obtaining enough food to sustain themselves. The stress and anxiety associated with food insecurity can hinder their cognitive development and limit their ability to engage fully in their educational journey.

Furthermore, food insecurity could come into conflict with ethical concerns. Students at the relativism stage may encounter moral challenges concerning their personal ideals and cultural standards. They may struggle with issues of fairness, justice, and the institutions' responsibilities to alleviate food insecurity within the community of students. Food insecurity can cause students to question current systems and institutions, as well as inspire them to advocate for change and social justice. The stages of Perry's theory of intellectual and ethical development can provide insight into the challenges that community college students facing food insecurity may encounter. By recognizing the impact of food insecurity on students' cognitive and moral development, educational institutions can take steps to address this issue, such as providing access to affordable and nutritious food options or establishing support programs that alleviate food insecurity.

Statement of Purpose

The purpose of this quantitative study was to explore the difference between students who participate in SNAP and those who do not, using statistical methods, including the Mann–Whitney U test, Levene's test of equality of variance, chi-square, and the Shapiro–Wilkes test, to specifically examine the impact, if any, on their retention, GPAs, and graduation rates. Archival data from the FAFSA for the academic years fall 2018 through spring 2022 was obtained for this study. The FAFSA is the largest source of student financial support for students receiving federal grants, work-study employment, and loans to pay for college, and it is responsible for collecting and analyzing student financial information. The FAFSA data are self-reported by students, and the data was used as the instrument to gather information about community college students who received SNAP benefits and their counterparts who did not. Federal student aid programs are based on the concept that paying for one's education is primarily the responsibility of the student

and the student's family. A dependent student is assumed to have parental support, so the parent's financial information must be evaluated, alongside the student's financial information, to obtain a complete picture of the family's finances. As an independent student, parents are not required to contribute anything to a student's education; rather, this information is used to determine the student's maximum eligibility for federal student aid (FAFSA, n.d.).

The percentage of undergraduate students who return to the same institution the following fall is measured by retention rates. Graduation rates are the percentages of undergraduate students who finish their program at the same institution within a given timeframe (U.S. Department of Education [USDOE], 2022).

The purpose of determining the difference these nonacademic hurdles have on student retention, GPA, and graduation rates is to identify best practices and develop a student support model that may be used by other institutions for policymakers to establish providing SNAP benefits across institutions in New York State.

Null Hypotheses

The null hypothesis states that there is no relationship between the dependent and independent variables. This study's dependent variables are retention, GPA, and graduation rate. SNAP is the independent variable in this study. Each null hypothesis examined the difference between independent, full-time and part-time enrolled community college students (ages 24 to 50) who received SNAP benefits and those who did not.

1. There was no difference in the retention between the independent, part-time community college students, ages 24–50, who received SNAP benefits from the fall 2018 semester through the spring 2022 semester and those students who did not receive SNAP benefits.

2. There was no difference in the retention between the independent, full-time community college students, ages 24–50, who received SNAP benefits from the fall 2018 semester through the spring 2022 semester and those students who did not receive SNAP benefits.
3. There was no difference in the GPAs between the independent, part-time community college students, ages 24–50, who received SNAP benefits from the fall 2018 semester through the spring 2022 semester and those students who did not receive SNAP benefits.
4. There was no difference in the GPAs between the independent, full-time community college students, ages 24–50, who received SNAP benefits from the fall 2018 semester through the spring 2022 semester and those students who did not receive SNAP benefits.
5. There was no difference in the graduation rates between the independent, part-time community college students, ages 24–50, who received SNAP benefits from the fall 2018 semester through the spring 2022 semester and those students who did not receive SNAP benefits.
6. There was no difference in the graduation rates between the independent, full-time community college students, ages 24–50, who received SNAP benefits from the fall 2018 semester through the spring 2022 semester and those students who did not receive SNAP benefits.

Significance of the Study

Yu (2015) stated that there is a need to address barriers unique to community college populations. New York State community colleges are currently implementing SNAP on

community college campuses. This study's location was in one of the nine community colleges in the nation to initially receive funding to address nonacademic barriers such as food insecurity. Since the inception of the program, two 4-year colleges have had similar programs. This study explored if there was a difference between SNAP recipients' retention, GPAs, and graduation rates compared to their counterparts who do not receive SNAP benefits.

Definitions of Terms

GPA (grade point average) – a number representing the average value of the accumulated final grades earned in courses from semester to semester.

Retention – a student's ability to complete coursework and reenroll for part-time or full-time from semester to semester.

Independent student – an individual enrolled part or full time in college courses who does not report parents' IRS tax or income information on the FAFSA form.

Chapter Summary

Food insecurity is becoming a big issue for college students in the United States. Food insecurity among community college students may impact retention, GPAs, and graduation rates. Several studies have evaluated the impact of food insecurity and SNAP benefits among community college students. Some community college students struggle with retention, GPAs, and graduation rates because of the dynamics of unmet needs. These barriers have a substantial influence on a student's ability to continue and achieve academically in college (Cady, 2014; Finkel, 2016; Goldrick-Rab et al., 2013, 2015; Institute for College Access & Success, 2016; Maroto et al., 2015; Troester-Trate, 2017). Community college students often struggle with daily living expenses because of their disproportionate rates of low income (Goldrick-Rob et al. 2013). This study explored which sample group performed better regarding retention, GPAs, and

graduation rates of community college students who received SNAP benefits and their counterparts who did not receive SNAP benefits. This study utilized the FAFSA archival data to understand if a difference was evident in retention, GPAs, and graduation rates from the fall 2018 through spring 2022 semesters to develop SNAP benefits at New York State community college campuses statewide.

Chapter 2 reviews the literature on the effects and statistics of food insecurity on community college students' retention, GPAs, and graduation rates. Chapter 3 presents the justification for the research design and methodologies used in this study. Chapter 4 presents the findings of this study, and Chapter 5 provides an analysis and discussion of the findings as well as future recommendations for research.

Chapter 2: Review of the Literature

It has been difficult to confirm that the benefits of SNAP on community college campuses have been successful (Freudenberg et al., 2019). Before research was conducted to identify the correlates of student retention, poor academic performance, and low graduation rates, merging academic institutions and social services in one location did not seem profitable (Levesque, 2018). Since 2002, New York State community college institutions have developed concepts and student assistance programs to offer a holistic student development model in response to low retention, GPAs, and graduation rates. These models have been studied to see if they have lessened nonacademic hurdles experienced by community college students. To better understand the outcomes of student services linked to retention, GPAs, and graduation rates, some institutions and organizations have conducted research studies (Andrade et al., 2022; Broton et al., 2022; Price et al., 2014).

Chapter 2 reviews the literature on the efficacy, or lack thereof, of implementing supportive services, including SNAP benefits, on college campuses to reduce food insecurity among the student population. This quantitative study explored the effects of SNAP benefits on community college students' retention, GPAs, and graduation rates.

Food Insecurity and Community College Students

According to Regan (2020), the term food insecurity is used to describe “situations in which a person cannot afford to buy food because of their financial situation” (p. 4). As noted above, college students regularly cope with various issues, and managing several tasks can be difficult. On a fundamental level, food insecurity might make students less effective in the

classroom (Kelly, 2022). College students and their families, particularly those living below the poverty line, must rely on available supplemental resources—the majority of which are SNAP benefits (Regan, 2020). On a community college campus, initiatives like SNAP aim to assist students' immediate financial needs, prevent disenrollment and withdrawal, and increase academic performance and graduation rates (Goldrick-Rab et al., 2015).

Community colleges serve a population of approximately 40% low-income, disproportionately represented students; however, only one-third of those students graduate with a degree or certificate within a 6-year time frame (Miller et al., 2020). Populations with a higher risk of food insecurity are Hispanics, African Americans, and low-income individuals (Martinez et al., 2020).

SNAP's strategy is to track and provide food security to poor and near-to-poor populations. SNAP has been used in economic downturns because of the additional challenges for many people to alleviate their food insecurity. The USDA's Thrifty Food Plan estimates the cost of a healthy diet across various price points, calculating that families below the U.S. poverty level guidelines spend about 30% of their income on food (USDA, 2022). According to a study conducted by the Center on Budget and Policy Priorities (CBPP, 2019), receiving SNAP benefits reduced households' food insecurity by 5% to 10% and reduced "very low food security" (p. 9), which occurs when one or more household members must skip meals or eat less by 5% to 6% because they lack sufficient money to purchase or otherwise access food.

Many organizations and policymakers have supported the provision of financial assistance to community colleges to mitigate food insecurity and increase retention, GPAs, and graduation rates. Financial support is a critical component in higher education, assisting students with completing their studies and helping them gain a certificate or degree. Although institutions

have consistently adjusted tuition costs, research has shown that students face other financial barriers that hinder retention, GPAs, and graduation rates (Price et al., 2014). According to a survey published by researchers at Temple University and the Wisconsin HOPE Lab, Romo (2018) stated that

Food insecurity really undermines [college students'] ability to do well in school. Their grades suffer, their test scores appear lower, and overall, their chances of graduating are slimmer. They can barely escape their conditions of poverty long enough to complete their degrees. (para. 6)

A national conversation about student performance and retention in higher education was sparked by the Obama administration's American Graduation Initiative (Crellin et al., 2012). President Barack Obama, in a joint session with Congress in February 2009, set the objective that by 2020, America would once again have the highest proportion of college graduates in the world (Boggs, 2011). College completion has become a national endeavor since President Obama's challenge, and the emphasis on student success and retention has increased.

Food Insecurity and Its Effect on Academic Retention

State governments, policymakers, business leaders, consumer advocates, parents, and students are increasingly holding educational institutions accountable for retention rates. There is a paucity of literature regarding how students envision university life and how these expectations may shape their experience after enrollment. Overall, research on student retention factors has discovered that family obligations are a serious issue affecting student success in their programs (Lobo, 2012).

Martinez et al. (2020) conducted a study on students at the University of California (UC) as part of the UC Global Food Initiative. At the time of the study, the college enrolled 242,326

students (29% White, 3% Black, and 25% Hispanic), with half the student population having a low income. The students reported the following feelings within the previous 12 months of the study: (a) hopeless, (b) overwhelmed, (c) exhausted, (d) lonely, (e) sad, (f) anxious, (g) angry, and (h) depressed. The structural equation model, which adjusted for all factors, showed a direct and indirect relationship between food insecurity and student GPA. Particularly, there was a direct correlation between students' food insecurity and lower GPA ($B = -0.08, p = 0.001$).

Community college success is indicative of both academic and nonacademic skills and behaviors. Karp (2016) examined different types of interventions and found that while colleges may name their programs differently, they are providing the same services. Given that it was difficult to examine interventions from this perspective, the researcher focused on the type of support offered. The study included a program description for the researcher to identify the key elements of the intervention being studied. The studies were categorized based on the elements they shared. Through this procedure, Karp (2016) discovered four crucial mechanisms, or "things that happen" (p. 34) within the activities and programs that support successful student outcomes: (a) social connections, (b) clarifying aspirations, (c) understanding college, and (d) overcoming obstacles to encourage the most student success when working together.

Social connections, meaning creating relationships, were reported as important for student success. Relationships foster encouragement, support, and comfort in a community college setting. Community college students' relationships are generally functional, focusing on academic help rather than socialization, which makes students feel integrated into the college. Second, clarifying aspirations and enhancing commitment were correlated with student retention. It was important for students to clearly define goals and relate those goals to coursework. Third, engaging in the first two mechanisms helped students understand the college environment and

process. If students understand how learning works at a college level, they are better prepared to participate in the learning process at that level. Finally, advising was another domain that, if provided correctly, improved student persistence. The community colleges that most successfully experienced higher student retention, GPAs, and graduation rates were those with nonacademic support services that implemented these four mechanisms (Karp, 2016).

Community College Students' Path to Graduation

Community colleges are critical in providing a college education for diverse students. According to the National Center for Education Statistics (NCES, 2022), a small number of students graduate, with 28% completing degrees within 3 years; however, the average time to graduation for community college degree completion is 6 years. In community colleges, more than half of the students are economically, academically, and socially disadvantaged. Margarit and Kennedy (2019) aimed to understand graduation rates at Central Florida College. Student retention to graduation remains a challenge for many Florida community college leaders because many students who begin their college careers at community colleges never complete their degrees or certificates.

Margarit and Kennedy (2019) explored the barriers to timely graduation and retention at Central Florida College. Both regular and nontraditional students attended community college, yet graduation rates were still low. The school administrators tried to create supports and interventions for students to persist and graduate on time with the help of an understanding of the issues, but because of the restrictions on retention and graduation data, there was a lack of evidence of whether these efforts were successful. Margarit and Kennedy argued that social integration, academic performance, and demographic factors are related. The findings

demonstrated the significance of faculty in facilitating students' retention to graduation, as well as the need for synthesized academic and social integration.

In a final evaluation report regarding public benefits and community colleges, Price et al. (2014) suggested that providing comprehensive support for community college students leads to improved student success because these supports assist students in developing social relationships, clarifying aspirations, increasing commitment, developing college know-how, and making college life feasible. The report demonstrated how support from public benefits could help address college completion. The assumption was that if students enrolled in public benefits, it would reduce their unmet needs, improve personal life stability, diminish poor grades, decrease dropout rates, and allow students to progress toward educational goals. Several strategies implemented by community colleges increased the number of students enrolled in SNAP and other public benefit programs. A propensity score matching was conducted to compare students receiving public benefits to those who did not. Students receiving public benefits enrolled in more classes than those who did not receive benefits. The report noted that policymakers and practitioners needed more evidence to generate additional financial and student support services on community college campuses (Price et al., 2014).

Henry (2017) argued that while research cannot directly link food insecurity to poor academic performance because of confounding variables, correlations need to be investigated. Students expressed a greater need for awareness of food insecurity on campus, confidentiality, on-campus employment, and discretion on campus. These few solutions would help students recognize they were not alone, and the students would feel secure benefiting from support services on campus. The stress that results from housing and food insecurity has a substantial influence on the daily lives of low-income college students. The inability to meet basic needs has

a negative impact on students' psychosocial outcomes and educational success, such as college completion, academic performance, concentration in class, attendance, worry about disappointing family, sadness, hopelessness, isolation, embarrassment, and frustration (Meza et al., 2019; Patton-López et al., 2014; Reppond, 2019; Silva et al., 2017).

In the hopes that universities would adopt them, Patel and Assaf (2014) presented recommendations to widen the category of recipients and affect community colleges. Prioritizing these interventions was based on a variety of impact and feasibility criteria. Public tools and support would allow students to screen for public benefits. Community college students are frequently eligible for a variety of government assistance programs that they are unaware of and do not apply for. These benefits, such as SNAP, electronic benefit transfers (EBT), and food vouchers, can be of significant assistance to students who are working to free up resources to pay for their education. Aside from government benefits, students are frequently unaware of the benefits and aid available in their local geographic area or institutions. As a result, the Patel and Assaf study found that it is critical that community colleges provide students with the tools and support they need to learn about these programs, determine their eligibility, and apply.

The Blagg et al. (2020) study used a 2015–2016 dataset of students from Virginia's 23 community colleges. Two separate samples were captured between the students who received SNAP benefits and those who did not. The mixed-methods study was conducted to understand Virginia's Department of Social Services and community college systems. The findings were that community college students who were SNAP recipients were more financially disadvantaged than students who were potentially eligible for benefits but did not apply. SNAP was not associated with short-term academic outcomes among Virginia community college

students. The absence of a result indicated the need for more studies on SNAP and community college students.

Students' Academic Retention and GPA

Community colleges are under pressure to reform their existing higher education models. According to Price et al. (2014), the workforce is facing challenges as a result of low graduation rates. Offering student support services for community college students improves student performance because these supports enable students to form social bonds, define their goals, increase their commitment, gain college-level knowledge, and make college life manageable. Addressing these nonacademic issues is especially important for students who are supporting families because they are entangled in day-to-day concerns like childcare, transportation, safe housing, and food shortages.

The Lumina Foundation's Benefits Access for College Completion (BACC) evaluation is a study that examined whether providing nonacademic financial support to community college students would increase completion rates (Price et al., 2014). The mixed-methods study was conducted with an evaluation team between seven community colleges over a 3-year period. The methods used to collect data were student screenings, phone interviews, reports, and participant observations. There were several research questions in the study. The Lumina Foundation was interested in knowing which community college models were most promising for increasing students' access to benefits and how these models could be integrated into community college operations. From an institutional perspective, this involved connecting students to nonacademic financial support and moving them to retention and graduation.

There were three findings in the BACC study that demonstrated the steps necessary to institutionalize public benefits on a college campus: (a) services should be centrally located with

knowledgeable staff, (b) students should be able to opt in and out of services if they were not interested, and (c) leadership and departments should be involved in the public benefits as stakeholders (Price et al., 2014). This would ensure that students were offered the opportunity to apply for and receive services. A unified hub for public benefits would provide students with a safe, confidential, and accessible location to apply. The hub would alleviate resistance to public benefits on campus and be centrally located and equipped with trained staff without limiting the capacity to provide the service across the campuses. Various community colleges had different impacts based on the location and experience of their staff, but further research was cited as necessary to determine the specific impact for community colleges receiving SNAP public benefits (Price et al., 2014).

Community colleges play a significant role in the gateway to higher education. They are affordable, provide convenient scheduling, are industry specific, and relational. The USDOE reports that 43% of undergraduates are enrolled in community colleges (Cooper, 2010). Many students do not complete their higher education because of barriers (e.g., family obligations, childcare, food insecurity, transportation, housing). The strategy for persistence and degree attainment is student support services, which play a significant role in academic outcomes. Academic, social, and financial support are all intertwined in effective support services. These initiatives have been shown to improve student achievement when implemented in a coordinated, targeted, and comprehensive structure.

Cooper (2010) found that 45% of students expressed the need for supportive services. The literature research offered strategies to improve persistence and academic performance, such as (a) intensive financial aid counseling, (b) financial literacy, (c) financial incentives, and (d) emergency aid or vouchers. Students face ongoing challenges by making difficult decisions

between their academic careers and financial needs. Enhanced student services with one-stop approaches, such as federal TRIO programs, contribute to student success by centralizing all support under one umbrella. These support services play a positive role in student academics and social integration. For example, the federal TRIO programs are a bundle of eight outreach and student services programs designed to identify and serve people from low-income families, first-generation college students, and people with disabilities in their academic progression from middle school to postbaccalaureate programs (USDOE, 2023). TRIO also includes a training program for project directors and staff.

The Education Advisory Board (2019) found that of the roughly 2,100 students who stated employment was their largest obstacle, 61% said their work schedule left them with insufficient time to study, and 49% said their compensation was insufficient to support their expenses. In fact, 71% of the 2,055 students who stated it was difficult to pay their bills claimed they had the most trouble with their living expenses. Additionally, students said they had trouble paying for childcare (11%), tuition and fees (55%), and other expenses, including books, software, and other supplies (58%).

Based on the literature, food insecurity impacts college students and influences retention, GPAs, and graduation rates (Freudenberg et al., 2009; Spaid et al., 2021; Troester-Trate, 2017). Comparing students receiving a single benefit, such as SNAP, to students without benefits through a controlled group method should identify a more realistic effect of SNAP benefits among college students, as this current study did. The Abdul Latif Jameel Poverty Action Lab (2020) study indicates that community college graduates earn 30% more than individuals who have a high school diploma. In contrast, many community college students leave their studies before receiving a certification or degree, a situation known as a “completion crisis” (Abdul Latif

Jameel Poverty Action Lab, 2020, p. 1). Community colleges are one of the cornerstones to economic success for students, providing affordability, accessibility, and support services. However, students face nonacademic obstacles that impact the 30% graduation rate. In four randomized evaluations, the study found that support programs increase enrollment and improve academic outcomes.

One support program across college campuses that was shown to be effective was the CUNY Accelerated Study in Associate Programs (ASAP). The framework of the ASAP provides students with academic and nonacademic support, which increases enrollment, retention, and GPAs (Miller et al., 2020). The Ohio demonstration of ASAPs and the Manpower Demonstration Research Corporation evaluation determined that group support makes an impact on community college students' retention, GPAs, and graduation rates. Individual support services were not tested to see if they reduced college dropout rates. The evidence suggests several barriers students face; however, more exploration is needed to determine which components are effective (Miller et al., 2020).

Enrollment Decline in Higher Education

Enrollment in all types of institutions has declined in recent years, and community college administrators have focused on retention and graduation (Lobo, 2012). Since 2011, the number of nontraditional students enrolled has continuously declined, raising serious concerns for community institutions (Juszkiewicz, 2017). These reductions typically determine state and municipal funding sources in addition to having an impact on higher education institutions' tuition revenues (Phelan, 2014). Students frequently encounter nonacademic obstacles that keep them from continuing their retention, GPA, and graduation in community colleges, such as food instability, poor commuting conditions, or a lack of adequate childcare. Understanding the

student body at community colleges is crucial for addressing the nonacademic challenges these students face (Troester-Trate, 2017). To retain a higher percentage of community college students and improve matriculation rates, food security, transportation, and childcare needs should be addressed (Goldrick-Rab et al., 2015).

Chapter Summary

Programs have been put into place, such as SNAP, to lessen the impact nonacademic obstacles have on college students' retention, GPAs, and graduation rates. New York State has tested a number of approaches with the intention of increasing community college student retention, GPAs, and graduation rates by offering assistance like food pantries, transportation, or childcare. Low-income and nontraditional students who may not be able to continue in their field of study without supportive services, which address nonacademic challenges, are served by these community college programs. Supportive service programs have been shown to be effective resources when correlated with the retention and GPA of community college students.

Barriers to persistence in higher education are similar across the literature review, with the root causes stemming from various challenges that preceded enrollment in community college. The financial barriers students faced with food insecurity often stemmed from childhood. Small sample sizes and limited student participation across several geographic locations were consistent across most of the reviewed literature.

A significant weakness in the research is that few, if any, studies investigated the correlation between students receiving a single support service, like SNAP, and their ultimate success in college and the impact by gender. Most studies investigated students receiving multiple services for both males and females, which, while helping their retention, GPAs, and graduation rates, does not clarify which services might be most critical and, thereby, supportive

to the student population in question. As it relates to gender, women are 6.71% more likely than males to enroll in higher education and 9.33% more likely to achieve a degree, according to the college enrollment statistics report for 2023 (Hanson, 2022). According to the USDA Food and Nutrition Service, the percentage of women on SNAP in the United States was roughly 63% as of September 2020 (Cronquist et al., 2022).

This research study explored the correlation between the provision of a single support service—SNAP benefits—to community college SNAP and non-SNAP students' performance in retention, GPA, and graduation rates. Further research should include gender-specific groups, preferably females, across several academic years.

Chapter 3 will discuss the following topics: (a) research design, (b) population, (c) data collection, (d) instruments, and (e) data analysis. This quantitative study used archive data from FAFSA forms and College Tracker from 2018 through 2022 to explore how SNAP, or not having SNAP, affects community college students' retention, GPAs, and graduation rates.

Chapter 3: Research and Design Methodology

General Perspective

Food-insecure students are more likely to have lower GPAs than their counterparts who have access to food, and it reduces their capacity to perform well in class and lowers their attendance and completion rates (McCoy et al., 2022). The combined effects of academic institutions and social services on student access to SNAP services are limited to the extent that current models are not prevalent (Price et al., 2014). It is the overall goal for community college students to graduate and obtain gainful employment; however, many institutions are still exploring the impact of food insecurity on these goals (Ma et al., 2016). Freudenberg et al. (2019) reported the 2016 findings from the U.S. Government Accountability Office, which estimated that 7.3 million U.S. college students' households were below SNAP eligibility, 2.26 million (31%) were enrolled in SNAP, and 20% of the participating 123 colleges and universities received benefits. Compared to earlier years, by 2016, 39% of college students' household incomes were below 130% of the federal poverty line, and one-third attended community colleges.

This quantitative research study using matched samples explored if community college students receiving SNAP benefits outperformed students who do not receive SNAP benefits regarding retention, GPAs, and graduation rate. Food insecurity is frequent among university students, and it has been linked to poor academic performance. Understanding the mechanisms that underpin this relationship is critical for developing programs to address this issue (Weaver et al., 2019). Community colleges assist the underprivileged by providing students with the

opportunity to gain an education in a trade or a skill that will allow them to support their families. The purpose of community colleges is to provide higher education to minorities, non-English speaking students, and the financially disadvantaged (Beaver, 2022).

Wolfson et al. (2022) posited that it is necessary to broaden and improve access to existing policies and programs that reduce food insecurity among college students. The lack of research on community college retention is a significant barrier to change (Yu, 2015). If nonacademic barriers are not mitigated through student support services and other resources, a sizable number of community college students could withdraw from classes or drop out of college completely to meet their needs (Goldrick-Rab et al., 2013; McDonnell et al., 2014).

Chapter 3 describes the (a) research design, (b) population, (c) data collection, (d) instruments, and (e) data analysis and findings. This quantitative study used archival data from the FAFSA forms, and college tracker ranging from fall 2018 through spring 2022. The purpose was to determine the impact SNAP, or the lack thereof, has on community college students' retention, GPAs, and graduation rates.

Research Design

This quantitative research design explored whether SNAP benefits impact the retention, GPAs, and graduation rates of community college students compared to their counterparts who did not receive SNAP benefits. Archival data from the community college student financial service department was used to test the hypothesis that students receiving SNAP benefits have higher retention, GPAs, and graduation rates than those not receiving SNAP benefits.

Research Context

The community college for this study is located in New York State. At the time of this study, a large number of low-income minority students attended the college, and many first-

generation and immigrant students were served by its programs. The community college was chosen for this study because of its long-standing institutionalization of student support services for low-income, minority families. Since the 2000s, the community college has set the standard for providing on-campus student support services. The researcher had a positionality in the quantitative study with over 20 years of social services experience, serving as a director in the participant institution where students' FAFSA data are located and offering low-income students support with application assistance and advocacy for SNAP benefits. The researcher provided student support services at the community college to students with food insecurities.

Research Participants

The population for this study was continuing, transfer, and new freshman students who were independent, aged 24–50, enrolled full or part time in the college, and were SNAP members and non-SNAP in a New York State community college. Table 3.1 details the archival two-group sample of SNAP and non-SNAP by enrollment status as of fall 2018, with a sample size of 4,127 participants.

Table 3.1

Archival Sample Groups Enrollment Status

Student Participant	Non-SNAP	SNAP
Full-Time Continuing	1962	212
Part-Time Continuing	1009	94
Full-Time Freshmen	223	32
Part-Time Freshman	48	9
Full-Time Transfer	370	41
Part-Time Transfer	119	8

The federal government eligibility requirements under the SNAP guidelines listed by Hunger Solutions were used to match the SNAP participants in this study to their eligible counterparts who did not receive SNAP benefits. These requirements included: under age 50, able-bodied, working at least 20 hours per week, eligible for state or federal work-study, or being single parents enrolled full-time with an expected family contribution (Hunger Solutions New York, 2022).

The sample population age range was selected based on the American Association of Community Colleges report that the typical community college student is 27 years old, and 44% of community college students are over the age of 22 (Warner, 2022). The population was matched according to the part-time and full-time enrollment status of the students aged 24–50, who declared an independent income status and were enrolled in a New York State community college. Dependent students under the age of 23 were excluded from the data set because of the possibility that they were most likely ineligible for SNAP benefits. The federal guidelines state that if a student lives with a legal guardian, the student must be on a SNAP case with the family household (New York City Human Resources Administration, n.d.).

Coursework and Persistence

According to the community college academic coursework standards, students are considered part time if their course credits total under 12 credits in a semester. Full-time students' course credits total 12 or more credits in a semester, as indicated by higher-education standards. The students were considered to have persisted if they completed their coursework from fall 2018 through spring 2019 and if they graduated from the community college by the end of spring 2022. The time frame of one academic year was used; however, the literature denotes that community college graduation rates within 2–3 years are low (Miller et al., 2020). Only 25%

of first-time, full-time, degree-seeking students who enroll in public 2-year schools graduate within 3 years (McFarland et al., 2019). Less than 40% of community college students graduate within 6 years of enrollment with a certificate or degree (Bailey et al., 2015).

Independent Students

Independent status, defined by FAFSA, refers to students not claimed on their parents' income taxes. Students who identified receiving SNAP benefits on the FAFSA form were allowed for accurate participation data from fall 2018 through spring 2022 compared to their counterparts who did not indicate receiving SNAP benefits. Retention, GPA, and graduation rate variables for the matched sample were constructed in the same manner as the community college student sample.

Enrollment and Graduation

Enrollment status was chosen as a unit of analysis to determine if the difference between course credits impacted retention, GPAs, and graduation rates. According to U.S. education and community colleges, part-time students perform more poorly than full-time students. Part-time education provides flexible scheduling and enables working students to complete their degrees or certificates without sacrificing their jobs or personal commitments. Enrollment status can influence an individual's chances of graduating, as statistics show that full-time students graduate at a higher rate than part-time students. Part-time students are more likely to be affected by hectic work schedules (41% of part-time students work full-time compared to 22% of full-time students) (Sands, 2021). According to the research, only 31.6% of community college students graduate. However, the graduation rate of students aged 25–29 increased by 69.5%. (Bouchrika, 2022). The increase in graduation rates among age groups can be attributed to family responsibilities, independence, and economics. Specific characteristics such as age, income,

family size, enrollment status, parental status, and SNAP confirmation or non-receipt of SNAP assistance were used to compare students in this study.

Procedures Used in Data Collection

There were four stages to the data collection. A description of each stage follows.

Stage 1

Stage 1 involved collecting archival data from FAFSA and the College Tracker system. The community college student financial services information technology (IT) department at the participating community college authorized the researcher to access the archival data from FAFSA from fall 2018 through spring 2022. The two groups of participants for this study were continuing, freshmen and transfer college students at a community college who were enrolled in fall 2018 through spring 2022. The population size for this study was 4,127 students. The students were chosen by their indication of receiving SNAP benefits for the fall 2018 FAFSA. Both groups were identified by enrollment status, independence, and graduation apart from SNAP enrollment. For SNAP-enrolled students, a deidentified data set was downloaded from the institutional and FAFSA systems. Similarly, for the non-SNAP recipient group, a deidentified data set was derived from the College Tracker system institutional database. Non-enrolled students were purposefully chosen from the college database to create a matched sample.

Stage 2

Stage 2 was the process of data cleaning. The student financial services IT team removed identification numbers after downloading the report into an encrypted Excel spreadsheet, and the identification numbers were replaced with generic identifiers such as “Student 1,” “Student 2,” up to the total number of the populations.

Stage 3

Stage 3 established comparability between the two groups. Matched samples were chosen based on enrollment status, age ranges of 24–50, GPA, and semester-to-semester continuity. There were 4,127 individuals in the research study's total sample size. The samples were divided into two groups, 396 of which were SNAP recipients and 3,731 of which were non-SNAP recipients. The spreadsheet indicated the number of students who persisted, the number of students who graduated, the student enrollment status, whether the students received SNAP benefits, and if the students received no SNAP benefits. The totals were duplicated for each category.

Stage 4

Stage 4 consisted of tabulating, analyzing, and interpreting the data using SPSS statistical tools. The Excel spreadsheet was uploaded to SPSS Version 28 (IBM Corp., 2021) for data analysis. The intent of this research was to examine if retention, persistence, and performance differed between students enrolled in SNAP and those who were not enrolled. All results, including the final analysis and completed research instrument, were shared with the administrators of the community college.

Instruments Used in Data Collection

Data for this study were reports generated from the College Tracker and FAFSA systems. The FAFSA database provided the list of students who received SNAP benefits and their counterparts who did not receive SNAP benefits. The College Tracker system listed the students' identification numbers, enrollment status, GPAs, retention semester to semester, and graduation dates, if any.

FAFSA

One source of data analyzed for this study was generated from the FAFSA, which is administered by the USDOE in agreement with higher institutions to receive student data. This dataset includes student demographics, income, and parental contributions to educational institutions for the federal aid eligibility award package (Federal Student Aid, n.d.). Federal Student Aid, a division of the USDOE, is the nation's largest provider of student financial aid. Federal Student Aid oversees the student financial aid programs authorized by Title IV of the Higher Education Act of 1965. These programs provide grants, work-studies, and loan funds to college or career school students. The USDOE processes FAFSA and the Institutional Student Information Record is sent to the colleges listed on the application. The colleges listed on the student applications are in charge of putting together an award package and disbursing financial aid. The FAFSA is unique in that students' information is self-reported.

College Tracker System

The College Tracker system is a fully integrated resources and services platform tool. It is the enterprise resource solution that enables New York State community college students to move seamlessly through any and all New York State community college campuses as they pursue their higher educational aspirations. It also connects faculty and staff to tools to support their processes (CUNYfirst, 2023). The platform holds a database that contains information about each student's personal information, schedule, academic record, and financial aid award summary.

Procedures for Data Analysis

The statistical methods used were the chi-square test, Levene's test of equality of variance, and the Mann-Whitney U test. Levene's test of equality of variance was used to test for the assumption of homogeneity of variance. Mann-Whitney U tests were used to compare the

groups' GPAs, and the chi-square analysis was performed to compare the study groups on their respective rates of retention and graduation.

Cases with missing data were handled using listwise deletion for subsequent analyses. Any distributions missing more than 20% were not analyzed because significant bias could have been introduced when making inferences. Descriptive and frequency statistics were used to describe the samples' characteristics. Shapiro–Wilks tests were performed on the GPA (performance) outcome variable to test for the statistical assumptions of normality.

When comparing the two independent groups (SNAP versus no SNAP), Levene's test of equality of variances was used to test for the assumption of homogeneity of variance. If either (normality and homogeneity of variance) or both statistical assumptions were violated, non-parametric Mann–Whitney U tests were used for comparing the groups regarding GPA. Median and interquartile ranges were reported for the nonparametric analysis. When both statistical assumptions were met, independent sample T-tests were used to compare the SNAP group's GPAs. Means and standard deviations were reported and interpreted. For the categorical outcomes of retention and graduation (both binary, yes/no outcomes), chi-square analyses were performed to compare the SNAP and no SNAP groups on their respective rates of retention and graduation. Unadjusted odds ratios (OR) with 95% confidence intervals (CI) were reported for any significant main effects as a measure of the strength of association. Frequency and percentage statistics were reported for the chi-square analyses. Statistical significance was assumed at an alpha value of 0.05, and all analyses were performed using SPSS software.

According to Heale and Twycross (2015), validity is defined as the extent to which a concept is accurately measured in a quantitative study. There are three types of evidence to demonstrate a research instrument. The most appropriate research instrument for this study was

theory evidence. When behavior is similar to the theoretical propositions of the construct measured in the instrument, it is known as theory evidence. The predictive validity should have high correlations with future criteria. Theory-driven analysis, as Schoenfeld (2010) reminded us, forces us to make our assumptions transparent, holds us accountable to the data, and helps us to cultivate knowledge to improve education.

Chapter Summary

This methodological research design aimed to determine if retention, GPAs, and graduation rates were impacted by SNAP benefits. The design of this study was a quantitative, independent *t*-test design. The independent variable was the SNAP benefits, and the dependent variables were retention, GPAs, and graduation rates. The findings of this study will potentially assist community colleges with the implementation of SNAP benefits to students on community college campuses. This study was designed to explore if the null hypothesis was a fail to reject or reject that community college students who received SNAP services outperformed in retention, GPAs, and graduation rates over their counterparts who did not receive SNAP benefits.

Chapter 4 of this study presents the research findings. It includes a summary of the participants' demographics, providing information about the sample. The chapter analyzes the results and fail to reject or reject the null hypotheses of the study. In conclusion, the chapter summarizes whether the impact of SNAP on community college students' retention rates, GPAs, and graduation rates is statistically significant or not.

Chapter 4: Results

Introduction

Food insecurity can have significant impacts on individuals, and it has been associated with low academic performance in college students (Patton-López et al., 2014). Even for brief periods of time, food insecurity has negative physiological and psychological effects on college students. Students who lack access to food may find it challenging to concentrate in class, which can have an impact on their GPAs and overall academic performance (Wang et al., 2019). Institutions of higher learning are considering the kind of support services that could aid students in enhancing their academic performance.

The purpose of this quantitative research study was to explore whether community college students who received SNAP benefits outperformed, with respect to retention, GPA, and graduation rate, those students who do not receive SNAP benefits. Deidentified archival data were collected using the College Tracker and FAFSA systems during the fall 2018 and spring 2022 semesters.

Chapter 4 includes the results of this study. The validity of the data and the demographics of participants are discussed. The results are discussed in relation to the null hypothesis that was proposed for this study. Chapter 4 also includes an evaluation of the reported results and a summary of the findings. Table 4.1 shows the frequency and percentage statistics associated with the chi-square analyses and shows the two sample groups' academic comparisons.

Table 4.1*SNAP and Non-SNAP Academic Comparisons*

Variable	Non-SNAP	SNAP	<i>p</i> -value
Total number of semesters enrolled since fall 2018	2.00 (1–3)	2.00 (1–3)	0.720
Cumulative GPA	3.06 (2.51–3.48)	2.92 (2.21–3.43)	<0.001
Retention Semesters	Student #/ (%)	Student #/ (%)	
Spring 2018	2,706 (72.5)	277 (69.9)	0.280
Fall 2018	1,811 (48.5)	197 (49.7)	0.640
Spring 2019	1,242 (33.3)	139 (35.1)	0.470
Fall 2019	709 (19.0)	89 (22.5)	0.100
Spring 2020	519 (13.9)	53 (13.4)	0.780
Fall 2020	338 (9.1)	33 (8.3)	0.630
Spring 2021	234 (6.3)	27 (6.8)	0.670
Fall 2021	162 (4.3)	17 (4.3)	0.970
Spring 2022	100 (2.7)	14 (3.5)	0.320
Graduation	2,258 (60.2)	208 (52.3)	0.002

This research study was conducted using archival data. The study explored the differences between SNAP and non-SNAP participants regarding their respective retention, GPAs, and graduation rates across the fall 2018 through spring 2022 semesters. There was no effect modification or controlling for variables in this multivariate model, as the variables were observed in their current condition. This study yielded some correlational evidence, but no causality can be derived from the findings, as randomization was not utilized in the methodology. The findings indicate that the SNAP participants performed more poorly than non-SNAP students; however, a randomized trial would be required to randomly select participants and then randomly allocate participants to the treatment arms, which was not feasible because one cannot randomly allocate an individual to receiving SNAP benefits. A quasi-experimental

design approach that observes SNAP students in a longitudinal fashion in future research. In terms of validity, this study had a large sample size that yielded significant results, but causal inferences can only be made in future, larger, and prospective quasi-experimental designs.

Data Analysis and Findings

This quantitative research study explored if there were statistically significant differences in college retention, GPA, and graduation rates between two groups of independent community part- and full-time college students aged 24–50. One group received SNAP benefits and one group did not receive SNAP benefits. This section explored if the data demonstrated that the null hypothesis was “fail to reject” or “reject” concerning community college students who received SNAP benefits outperforming their counterparts who did not receive SNAP benefits in terms of retention, GPA, and graduation rates.

Null Hypothesis 1

Null hypothesis 1 states there was no difference in the retention rates between the independent, part-time community college students, ages 24–50, who received SNAP benefits from the fall 2018 through the spring 2022, and those students who did not receive SNAP benefits.

The chi-square statistics were utilized to test the null hypothesis, as shown in Table 4.2. The null hypothesis was examined for each academic period from fall 2018 through spring 2022. The p-values for 2019 ($X^2(1) = 0.001, p = 0.97$), 2020 ($X^2(1) = 0.60, p = 0.44$), 2021 ($X^2(1) = 0.16, p = 0.69$), and 2022 ($X^2(1) = 1.36, p = 0.24$) were all higher than the commonly used threshold of 0.05. As a result, the findings were not statistically significant, leading to a fail to reject the null hypothesis.

Table 4.2*Part-Time Research Participants Retention Rates from Fall 2018 through Spring 2022*

Retention Periods	Non-SNAP	SNAP	<i>p</i> -value
	Students/% Retained	Students/% Retained	
Fall 2018–Spring 2019	393 (33.8)	37 (33.9)	0.97
Fall 2019–Spring 2020	182 (15.6)	14 (12.8)	0.44
Fall 2020–Spring 2021	84 (7.2)	9 (8.3)	0.69
Fall 2021–Spring 2022	39 (3.4)	6 (5.5)	0.24

Null Hypothesis 2

Null hypothesis 2 states there was no difference in the retention between the independent, full-time community college students, aged 24–50, who received SNAP benefits from the fall 2018 semester through the spring 2022 semester and those students who did not receive SNAP benefits.

Table 4.3 provides the categorical variables for retention from fall 2018 through spring 2022. The *p* values for 2019, $X^2(1) = 0.71, p = 0.40$; 2020, $X^2(1) = 0.05, p = 0.83$; 2021, $X^2(1) = 0.09, p = 0.77$; or 2022, $X^2(1) = 0.19, p = 0.67$ were all higher than the commonly used threshold of 0.05. As a result, the findings were not statistically significant, leading to a fail to reject the null hypothesis.

Table 4.3*Full-Time Research Participants Retention Rates from fall 2018 through spring 2022*

Academic Periods	Non-SNAP	SNAP	<i>p</i> -value
	Number/ (%) Retained	Number/ (%) Retained	
Fall 2018–Spring 2019	849 (33.1)	102 (35.5)	0.40
Fall 2019–Spring 2020	337 (13.1)	39 (13.6)	0.83
Fall 2020–Spring 2021	150 (5.8)	18 (6.3)	0.77
Fall 2021–Spring 2022	61 (2.4)	8 (2.9)	0.67

Null Hypothesis 3

Null hypothesis 3 states there was no difference in the GPAs between the community college, independent, aged 24–50, part-time college students who received SNAP benefits from the fall 2018 semester through the spring 2022 semester and those students who did not receive SNAP benefits.

In Table 4.4, the Mann-Whitney *U* tests were used as the test of differences in GPA. The difference in GPAs between the two groups is not statistically significant because the *p*-value $Z = -1.63$, $p = 0.10$ is greater than the frequently accepted threshold of 0.05 for statistical significance. As a result, the findings were fail to reject.

Table 4.4*Differences in GPA for Part-time Research Participants*

Category	Non-SNAP	SNAP	<i>p</i> -value
GPA	3.04 (2.46–3.41)	2.87 (2.27- 3.37)	0.10

Null Hypothesis 4

Null hypothesis 4 states there was no difference in the GPAs between the independent, aged 24–50, full-time community college students who received SNAP benefits from the fall

2018 semester through the spring 2022 semester and those matched students who did not receive SNAP benefits.

As shown in Table 4.5, there was a statistically significant difference in GPAs between the full-time students who received SNAP assistance and those who did not receive SNAP assistance; therefore, the null hypothesis is a reject as demonstrated by the p -value $Z = -3.18$, $p = 0.001$ which is lower than the commonly accepted threshold 0.05 for statistical significance.

Table 4.5

Differences in GPA for Full-Time Research Participants

Category	Non-SNAP	SNAP	p -value
GPA	3.07 (2.52–3.52)	2.93 (2.21–3.44)	0.001

Null Hypothesis 5

Null hypothesis 5 states there was no difference in the graduation rates between the independent, part-time community college students, ages 24–50, who received SNAP benefits from the fall 2018 semester through the spring 2022 semester and those students who did not receive SNAP benefits.

According to the data presented in Table 4.6, the findings fail to reject as the p -value of 0.19 indicates that there is a 19% chance of observing this difference by chance alone. Because the p -value is above the commonly used threshold of 0.05 for statistical significance, the findings between the two groups were considered not statistically significant.

Table 4.6

Differences in Graduation Rates for Part-time Research Participants

Category	Non-SNAP	SNAP	p -value
Graduation	587 (49.7%)	48 (43.2%)	0.19

Null Hypothesis 6

Null hypothesis 6 states there was no difference in the graduation rates between the independent, full-time community college students, ages 24–50, who received SNAP benefits from the fall 2018 semester through the spring 2022 semester and those students who did not receive SNAP benefits.

The data in Table 4.7 shows that there was a statistically significant difference in graduation rates between the full-time students who received SNAP benefits and their counterparts who did not receive SNAP benefits; therefore, the null hypothesis is reject, as demonstrated by the *p*-value of 0.002, which is below the commonly used threshold of 0.05 for statistical significance.

Table 4.7

Graduation Rate for Full-Time Research Participants

Outcome	Non-SNAP	SNAP	<i>p</i> -value
Graduation	1,671 (65.1%)	160 (55.7%)	0.002

Summary of Results

Due to non-academic obstacles, many community college students find it difficult to remain enrolled and complete their degrees (Forbus et al., 2011; Gates, 2013; Gilardi & Guglielmetti, 2011; Goldrick-Rab et al., 2015, 2018; Packard & Jeffers, 2013; Troester-Trate, 2017). The research study explored the effects of SNAP versus non-SNAP on retention, GPA, and graduation among community college students between the ages of 24 and 50 who are independent, full-time and part-time students. The null hypothesis findings indicated mixed results within the data. From fall 2018 to spring 2022, the null hypothesis was a “reject” and statistically significant as demonstrated by the *p*-value, which is lower than the commonly used

threshold of 0.05 for statistical significance, for full-time independent, age 24-50, community college students who received SNAP and their counterparts who did not receive SNAP benefits in GPA and graduation. The null hypothesis was “fail to reject” for the retention, GPA, and graduation for part-time enrolled SNAP recipients. The full-time finding was “fail to reject” for full-time, SNAP-receiving students’ retention as not statistically significant, as demonstrated by the *p*-value, which is higher than the commonly used threshold of 0.05 for statistical significance.

There was not a statistically significant difference in retention, GPA, and retention between part-time students who received SNAP assistance and those who did not between the independent, part-time community college students, ages 24-50, who received SNAP benefits from the fall of 2018 through the spring of 2022. However, there was a statistically significant difference in GPA and graduation between full-time students who received SNAP assistance and those who did not.

Chapter 5 serves as the conclusion of the study, providing a summary of the research conducted. The chapter will summarize the key findings and insights gained during the study, emphasizing the relevance and significance of food insecurity among community college students as it relates to retention, GPA, and graduation. Furthermore, based on the study findings, Chapter 5 will make practice suggestions, including recommendations for practice and future recommendations that may be undertaken to address food insecurity on community college campuses. Lastly, Chapter 5 will provide future research, suggesting areas that need more exploration or analysis in order to address food insecurity on community college campuses.

Chapter 5: Discussion

The community college sector was created to enable all students, especially those experiencing necessities instability, mental health issues, or other experiences of poverty and precarity, with broad access to higher education and a path to a middle-class lifestyle. Despite the rising cost of college attendance, a lack of living-wage jobs and a fraying social safety net compel individuals to enroll in higher education (Goldrick-Rab, 2016; Wolff, 2017). Many students attempt to balance higher education while also juggling their obligations to their families, jobs, and finances (Goldrick-Rab, 2016). Given their low financial means, nearly one-third of community college students get Pell Grants, 26% of them are student-parents, 30% are first-generation students, and 70% of them work while they are enrolled (Beer, 2018; Beer & Bray, 2019; Broton et al., 2022; Cruse et al., 2019).

Institutional authorities have been unable to find a solution to the poor retention and graduation rates of community college students, which continue to be a major problem for many community colleges around the country. Focus has switched from recruiting to retention as overall college enrollment has decreased (Mertes et al., 2014; National Student Clearinghouse Research Center, 2016). The fact that traditional students have historically been the focus of previous retention strategies is still one of the most difficult aspects for community colleges (Hongwei, 2015). However, students over the age of 24, parents, veterans, and low-income students make up the majority of the student body in community colleges. According to several studies (Forbus et al., 2011; Goldrick-Rab et al., 2013, 2015; Hongwei, 2015), these groups

demonstrate lower retention and persistence rates than their traditional counterparts (Troester-Trate, 2017). According to Troester-Tate (2017), the characteristics that distinguish this group as college students could affect their ability to continue in college. The majority of community college students are considered to be of nontraditional status given their characteristics, and they often struggle with inadequate childcare, food insecurity, and other financial stressors, which ultimately have the potential to lead to their withdrawal from classes (Cady, 2014; Forbus et al., 2011; Gilardi & Guglielmetti, 2011; Goldrick-Rab et al., 2013, 2015).

Approximately 20% of undergraduate students experience food insecurity alone, according to Goldrick-Rab et al. (2015). Institutional administrators must consider the importance of supportive services to address students' unmet needs in order to retain students who struggle with these and other non-academic barriers to success (Broton et al., 2013; Goldrick-Rab, 2013, 2015; Hongwei, 2015; McDonnell et al., 2014; Mertes et al., 2014; Troester-Trate, 2017).

The purpose of this quantitative study was to explore the impact of SNAP-recipient students versus their counterparts who did not receive SNAP benefits regarding the groups' retention, GPA, and graduation rates. The statistical methods used were chi-square, Levene's test of equality of variance, and the Mann-Whitney *U* test. Levene's test of equality of variances was used to test for the assumption of homogeneity of variance. The Mann-Whitney *U* tests were used for comparing the groups' GPAs. The chi-square analysis was performed to compare the SNAP groups regarding their respective rates of retention and graduation. The archival data were used from a community college in New York State with the intention to evaluate SNAP effectiveness and establish best practices for other community college institutions that seek to address non-academic barriers on campus.

Deidentified archival data were collected using the College Tracker and FAFSA systems to explore if community college students who receive SNAP assistance outperformed those students who did not receive SNAP benefits in terms of retention, GPAs, and graduation rates from the fall 2018 through spring 2022 semesters. In the fall semesters, beginning in fall 2018, students were deemed to have completed if they finished 50% of the credit hours for which they were registered. Students were considered retained if they finished fall semester classes and registered for at least one spring semester course or if they graduated at the end of the fall semester. The participants in this study were assigned to one of two matched groups. The initial group of 396 students was selected based on their FAFSA forms indicating SNAP eligibility. The second group of 3,731 participants was selected from FAFSA forms that did not indicate they were receiving SNAP benefits. Age, enrollment status, and independent status were used to match each group. Participants in the study varied in age from 24 to 50 years. The average family household had one to three people, who were married or single, who worked, were enrolled in at least one to three semesters, and received or did not receive SNAP benefits.

Implications of Findings

The findings of the study suggest that SNAP benefits may have some impact on the academic success of low-income college students, but additional research is needed. The results suggest SNAP benefits could improve retention, GPA, and graduation rates specifically for part-time students. This indicates that SNAP assistance may help financially insecure students persist in college. However, the effects were less consistent for full-time SNAP recipients. The financial support provided through SNAP could alleviate food insecurity and financial challenges, allowing students to focus more on their academics rather than worrying about basic needs. This may explain the improved retention rates.

However, the non-significant findings for full-time students imply that the impact of SNAP may depend on other factors like number of credit hours, work status, family responsibilities, and so on. More research should examine potential moderating variables. Additionally, the small sample size of SNAP recipients limits the generalizability of these findings. The effect of SNAP assistance on student outcomes may be better supported by larger research carried out across several institutions. To better understand mediating factors, future studies should collect and analyze additional variables such as student demographics, high school GPA, work hours, family size, and others.

This research study's findings suggest that SNAP benefits may support retention and academic success for some college students. Further research is recommended to explore the effects of SNAP benefits on low-income students in higher education. Such research can help guide policies aimed at supporting this vulnerable population.

Researchers looking for guidance on how to maximize the impact of SNAP and community college initiatives on campuses should carefully assess the demographics, enrollment status, and family obligations of their enrolling students.

Recommendations

Recommendations for practice and future research are divided into two sections in the next section. The recommendations for practice offer insightful guidance and recommendations for using the research findings. These suggestions are practical steps that institutions might take to reduce food insecurity on community college campuses. By providing practical recommendations, stakeholders can use the study results, incorporate them into their decision-making, and promote change.

Recommendations for Practice

Nonacademic barriers, such as SNAP, have been reduced in their effect on college students' retention, GPA, and graduation rates. New York State has implemented a variety of measures to increase community college student retention, GPA, and graduation rates by providing services such as food pantries, transportation, and childcare. These community college programs help low-income and nontraditional students who may be unable to continue in their area of study without supportive services that address nonacademic obstacles. Supportive services programs have been demonstrated to be helpful resources when connected with community college student retention and GPA, according to the literature (Goldrick-Rab et al., 2015; Maroto, 2013; Price et al., 2014).

Student support services can be easily transferred to different community college environments. SNAP was chosen for this study because of the observed non-academic demands of the community college population it serves. Community colleges in New York State have also established SNAP assistance on campus to meet the requirements of students, although each program is unique to each college. The SNAP-specific resources given by community colleges may not be successful on other campuses because of a lack of demand for these services, according to demographics. However, the overall concept of delivering student support services is easily transportable to campuses of all sizes. Based on the findings from the data, SNAP-receiving students may need additional support to increase retention, GPA, and graduation rates, with the recommendations supporting the efforts to increase retention, GPA, and graduation rates at community colleges.

Recommendation 1: Human Service Partnership. Community college enrollment has declined for a number of reasons. Working with the Department of Human Services to offer SNAP assistance on a community college campus is one recommendation that aligns with the

data, which indicated SNAP recipients enrolled part-time retained at the same level as their counterparts; however, full-time SNAP recipients retained at a lower rate. Therefore, given the budgetary challenges community colleges face, working with the Department of Human Services reduces staff costs while enabling the institution to offer SNAP enrollment at no cost to students. Community colleges can get information from their human resources department on student employment possibilities, such as internships, co-ops, and part-time work. These opportunities can improve students' employability after graduation by enabling them to get beneficial job experience. Additionally, the Department of Human Resources Administration programs, including SNAP, help community college students who are food insecure. The partnership between the community college and the Department of Human Resources Administration can be a pathway for students to gain employment, alleviate food insecurity, and receive assistance with other barriers that cause students not to graduate.

Recommendation 2: Cross-Divisional Training. To assist students who receive SNAP benefits in retaining, achieving higher GPAs, and graduating, cross-divisional training can be implemented. Providing cross-training for staff and faculty members on recognizing signs of unexpected, unmet needs among students, including signs of food insecurity, can help identify students who may require assistance. This training can enable community college staff and faculty to offer timely support and referrals to student support services.

Establishing a direct referral system to student support services allows students to request assistance without unnecessary delays. By streamlining the process, students can access the resources they need to address food insecurity and other challenges, which can positively impact their retention, GPA, and graduation.

Facilitating effective communication and collaboration among various stakeholders, including instructors, advisors, and support staff, creates a cohesive environment of support for students. Sharing information about students' progress, challenges, and needs allows for coordinated efforts to provide the necessary support and interventions, ultimately improving retention, GPA, and graduation rates.

Implementing cross-divisional training initiatives that involve all stakeholders can ensure that everyone is informed about students' progress and needs. This includes providing information about students receiving public benefits like SNAP. By understanding the unique circumstances and challenges faced by these students, educational professionals can tailor their support strategies and provide appropriate assistance, ultimately contributing to improved retention, GPA, and graduation rates.

Recommendation 3: Enrollment Screenings. Community colleges can establish a screening process that identifies students' unmet needs before admission. This screening can help identify barriers and challenges that students may face in their daily lives, including food insecurity. By identifying these needs early on, colleges can develop appropriate solutions and support systems to address them, creating a more conducive environment for student success.

By streamlining the process, community colleges can provide SNAP application assistance to students during the registration process. This integration ensures that students who may qualify for SNAP benefits are informed and supported in applying in advance. Access to SNAP benefits can help alleviate food insecurity, reducing distractions and allowing students to focus more on their studies, which can positively impact retention, GPA, and graduation rates.

Community colleges can enhance their support services to address the needs of students who receive SNAP benefits. This can include establishing on-campus food pantries, connecting

students to local food assistance programs, providing financial literacy and budgeting workshops, and offering counseling services. By offering a comprehensive range of support services, colleges can assist students in managing their basic needs, promoting their overall well-being, and improving their academic performance.

Creating a supportive campus culture that acknowledges and addresses the challenges faced by students who receive SNAP benefits is crucial. This can involve raising awareness among faculty, staff, and students about the experiences of food-insecure students and promoting empathy, understanding, and support throughout the college community. Peer mentoring programs, student-led initiatives, and partnerships with community organizations can contribute to a positive and inclusive campus environment. By providing comprehensive support, streamlining access to SNAP benefits, and fostering a supportive campus culture, colleges can create an environment where students can thrive academically and overcome the challenges associated with food insecurity.

Recommendation 4: Legislative Advocacy. Legislators developed an emergency assistance program with specific modifications during COVID-19 to enable more community college students to enroll in SNAP. Community colleges should have access to a review of the legislative measures that were taken to maintain the modifications as a new SNAP enrollment eligibility condition in community colleges. This data would help to determine whether legislators have taken steps to ensure that community college students continue to have access to SNAP benefits and if the number of students has increased in SNAP enrollment. Another recommendation is to explore a mixed-method approach, including both quantitative and qualitative data analysis. Quantitative data can be collected from community college records to compare enrollment, retention, GPAs, and graduation rates before and after the modifications to

SNAP emergency assistance. Qualitative data can be collected through interviews with community college administrators, faculty, and students to gain insight into the impact of the modifications on the student experience. When developing strategies for addressing food insecurity and advocating for the continuation and long-term expansion of SNAP to help more students, this knowledge is helpful. The data will also give a thorough knowledge of how changes to SNAP benefits affect community college students and will help future policy decisions about SNAP eligibility for this demographic.

Recommendation 5: On-Campus Comprehensive Student Support Services. On March 11, 2020, the World Health Organization (WHO) proclaimed the COVID-19 new coronavirus outbreak as a worldwide pandemic (Cucinotta & Vanelli, 2020). As a result of the COVID-19 public health emergency, SNAP payments were temporarily enhanced by Congress from March 2020 until May 2023. Households received additional emergency assistance SNAP benefits on top of their regular monthly SNAP benefit amount. Families earned larger SNAP payments each month as a result than they were entitled to. (New York State Office of Temporary and Disability Assistance, n.d.) Increased benefits positively impacted community college students who received SNAP during those semesters.

It is not surprising that the students who did not receive SNAP outperformed their counterparts who did receive SNAP in retention, GPA, and graduation rates. It is not realistic to think a single program will raise the retention rate, GPAs, and graduation rates of low-income students; however, it is realistic for higher education institutions to equalize retention, GPAs, and graduation rates.

Implementing comprehensive support services that address the different issues that create barriers for low-income students represents an essential approach to equalizing retention, GPA,

and graduation rates. Financial aid, academic support services, career counseling, mental health services, and access to basic requirements, such as food and shelter, are examples of such programs (Goldrick-Rab et al., 2018). Higher education institutions can assist in ensuring that low-income students have the resources and support they need to achieve academically and graduate by providing an array of student support services. To equalize retention, GPA, and graduation rates, policies and strategies that address systemic disparities in higher education should be implemented. Higher education institutions, for example, can aim to remove barriers to enrollment and completion for low-income students, such as excessive tuition fees or insufficient financial assistance programs. Additionally, institutions have the opportunity to address implicit biases, prejudice, and academic achievement among low-income students (Harper & Simmons, 2016). Community colleges may endeavor to provide a supportive environment that recognizes diversity and acknowledges the particular difficulties experienced by low-income students. This may entail giving low-income students chances to interact with each other, professors, and staff members, as well as encouraging a campus culture that supports and encourages diversity.

Recommendations for Future Research

SNAP was designed to assist individuals who face food insecurity, which is a challenge for community college students. One of the primary reasons that research is needed on this topic is to gain a better understanding of the scope and nature of food insecurity among community college students, and if the alleviation of food insecurity will increase community college students' GPAs and graduation rates. While there have been some studies on this issue, the existing research is limited in scope and often focuses on 4-year institutions. Community colleges have unique challenges when it comes to addressing food insecurity, such as limited funding and resources.

Future Research Recommendation 1. Future research should expand the study of similar models to determine, specifically, what student support services (e.g., childcare, housing, transportation) can assist community college students retain, increase their GPAs, and graduate. Food insecurity has become a growing concern on college campuses across the country. This issue can have significant implications for students' academic success, as well as their overall health and well-being. Therefore, it is essential that future research is conducted on food insecurity, specifically SNAP, on community college campuses. This study did not include any additional student support services, and future research might include housing and transportation to see which student support services impact retention, GPA, and/or graduation rates.

Future Research Recommendation 2. Future research should include statistics on the number of community college students who became eligible and enrolled in SNAP, as well as whether these students were retained, raised their GPAs, and graduated, compared to students who did not enroll in SNAP during COVID. Although COVID's emergency SNAP assistance expired in May 2023, the SNAP program will continue to operate year-round. Future research may provide data from a wider population of SNAP participants in community college institutions. Including SNAP recipients in a wider group provides a higher level of reliability.

Future Research Recommendation 3. Future studies should explore statistical data to compare persistence, GPA, and graduation rates across colleges that offer social service programs on campus and those that do not. The efficacy of interventions and solutions should also be explored for campuses with social service programs in order to ascertain the duration of the interventions, the solutions that were effective, and the demographics of the recipients of the interventions. Future research is needed on food insecurity on community college campuses to identify effective interventions, solutions, and relevance. Without a thorough understanding of

the problem, it can be difficult to develop targeted and effective interventions or show relevance for campuses without student support services such as food pantries. Research can help to identify which interventions are most effective and have the greatest potential for success. Community colleges may create initiatives to better assist students, and they may correlate to the achievement of higher GPAs and graduation rates by providing effective solutions to student support services.

Future Research Recommendation 4. According to the college enrollment statistics report for 2023 report, women are 6.71% more likely to enroll in higher education than men and 9.33% more likely to earn a degree (Hanson, 2022). As of September 2020, the percentage of women on SNAP in the United States was approximately 63%, according to the USDA Food and Nutrition Service (Cronquist et al., 2022). Future research should explore the retention, GPA, and graduation rates between female community college students who receive SNAP benefits and their female counterparts who do not receive SNAP to determine if the outcomes will fail to reject or reject the null hypothesis that community college females who receive SNAP benefits outperform their female counterparts who do not receive SNAP in retention, graduation and GPA.

Research on SNAP benefits on community college campuses is important because it can help raise awareness of the issue and generate support for change. When people are aware of the issue of food insecurity and its impact on students, they are more likely to support efforts to address it. This can include advocating for policy changes, donating to food banks and other organizations, and supporting initiatives aimed at addressing food insecurity on community college campuses. By working to address food insecurity by providing SNAP benefits on

community college campuses, institutions can help to ensure that all students have access to the resources they need to succeed and support in increasing higher GPAs and graduation rates.

Conclusion

In conclusion, there were significant disparities in retention, GPA, and graduation rates for part-time and full-time enrolled SNAP recipients. These findings suggest that while SNAP benefits may provide some support, they may not fully address the underlying factors affecting retention, GPA, and graduation. The outcomes of this study suggest that independent, 24-50-year-old, part-time and full-time students receiving SNAP assistance may require additional interventions to improve retention, GPA, and graduation rates. The research suggests specific challenges faced by this particular student demographic, underlining the need for focused and specific interventions, especially given their family dynamics. The SNAP-receiving community college students in this study may have difficulties as a result of different family dynamics, such as financial limitations, family obligations, or restricted access to resources. Family dynamics are extremely important in the lives of adult students, and interventions that are specific to these particular dynamics may be significant in addressing their particular challenges and supporting academic achievement.

It is essential to provide interventions in addition to the administration of financial aid in order to effectively assist SNAP recipients in continuing in educational institutions, increasing their GPA, and graduating. Such interventions should consider the many difficulties that students experience and address issues including financial hardship, time restraints, resource accessibility, and commitments to one's family. By recognizing the specific unmet needs faced by independent, aged 24-50, part-time and full-time SNAP recipients, educational institutions and

policymakers can work towards developing effective and specific strategies to support community college academic success in retention, GPA, and graduation.

Students who are food insecure are more likely to have lower GPAs than their counterparts who have access to food, which decreases their ability to succeed well in class and lowers their attendance and completion rates (McCoy et al., 2022). The combined impact of academic institutions and social services on student access to SNAP benefits is so restricted that current models are not widely used (Price et al., 2014). The primary objective for community college students is to graduate and find meaningful work, yet many institutions are currently investigating the influence of food insecurity on these goals (Ma et al., 2016).

According to the Freudenberg et al. (2019) report on the 2016 findings from the U.S. Government Accountability Office, 2.26 million (31%) of the 123 colleges and universities that participated in SNAP were enrolled, and 20% of the households of college students in the United States fell below the SNAP eligibility threshold. By 2016, 39% of college students' household incomes were lower than 130% of the federal poverty level compared to prior years, and 33% of those households had someone attending community colleges.

Community college students frequently experience food insecurity, which has been connected to poor academic performance. To create strategies to address this issue, it is essential to comprehend the mechanisms behind that connection (Weaver et al., 2019). By giving students the chance to receive an education in a trade or skill that will enable them to support their families, community colleges help the impoverished. Community colleges exist to help minorities, students who do not speak English, and those who are struggling financially to get a higher education (Beaver, 2022).

The findings in the data indicated SNAP effects were on the same level for part-time, SNAP and non-SNAP receiving students in retention, GPA, and graduation; however, the findings for full-time, SNAP-receiving students were statistically significant for GPA and graduation. As a result, community colleges can play a crucial role in addressing the needs of students, designing appropriate programs, formulating policies, and cultivating supportive learning environments. One valuable tool they can utilize is the knowledge of student development theory, as highlighted by Evans et al. in 1998. This theory helps community colleges understand the various stages of student development and tailor their interventions accordingly. Student development theory can be particularly relevant when examining unmet needs among students. For example, if a student's basic necessities such as food, shelter, and safety are not adequately met, it can impede their progress in the initial phases of the student development process. These fundamental needs must be fulfilled to establish a solid foundation for their educational success.

As students advance through the student development process, they may encounter additional unmet needs related to their academic and professional aspirations. This could include challenges related to accessing resources, pursuing specific courses or majors, or obtaining internships or career opportunities. By recognizing and addressing these unmet requirements, community colleges can provide the necessary support to facilitate students' progress and success. Integrating student development theory and Perry's theory of intellectual and ethical development into community college practices allows institutions to improve their understanding and response to students' diverse needs, leading to the creation of comprehensive programs, effective policies, and a supportive environment for healthy student development and achievement. Recognizing the influence of food insecurity on students' cognitive and moral

growth, educational institutions can take proactive measures such as offering affordable and nutritious food options or implementing support programs to alleviate food insecurity.

According to Wolfson et al. (2022), expanding and enhancing access to current policies and initiatives that lower food insecurity among college students is important. A significant barrier to improvement is the lack of research on community college retention (Yu, 2015). A large percentage of community college students could drop out of school entirely to satisfy their requirements if nonacademic barriers are not eliminated through student support services and other resources (Goldrick-Rab et al., 2013; McDonnell et al., 2014).

As a consequence of decreased enrollment rates in recent years, many administrators of higher education institutions have prioritized student retention and persistence (Mertes et al., 2016; National Student Clearinghouse Research Center, 2016; Troester-Trate, 2017). Many community college students face nonacademic obstacles to retention and graduation (Forbus et al., 2011; Gates, 2013; Gilardi & Guglielmetti, 2011; Goldrick-Rab et al., 2015, 2018; Packard & Jeffers, 2013; Troester-Trate, 2017). These barriers have a substantial influence on students' ability to continue and achieve academically in college (Cady, 2014; Finkel, 2016; Goldrick-Rab et al., 2013, 2015; Institute for College Access & Success, 2022; Maroto et al., 2015; Troester-Trate, 2017). Commonly seen as having low incomes, community college students are enrolling in universities at the same rate as their more affluent counterparts. They are enrolling, nevertheless, despite the added obstacles that sometimes come with their low-income status (Goldrick-Rab et al., 2013; Troester-Trate, 2017). The lowest completion rates of all universities and schools are seen at 2-year community colleges. Within a year of beginning at a community college, over half of students leave. Less than 40% of students complete their degrees in 6 years. That number has increased from the prior year by just under 1% (Marcus, 2023).

More than one-third of college students in the United States do not have enough food or stable housing. A survey of 43,000 students at 31 community colleges and 35 4-year institutions in 20 states and Washington, D.C., discovered that 36% of college students are food insecure, and 36% are living in substandard housing (Goldrick-Rab et al., 2018). According to Romo (2018),

It really undermines [college students'] ability to do well in school. Their grades deteriorate, their test scores look to be lower, and their prospects of graduating appear to be fewer overall. They can scarcely leave their impoverished situations long enough to earn their degrees. (p. 3)

College students who experience food insecurity may experience running out of food in between paychecks, visiting campus activities in search of food, cutting back on their food intake, buying less-nutritious food to save money, missing meals, or having to choose between paying for textbooks or food (Reppond, 2019). Low-income college students' everyday lives are significantly impacted by the stress caused by housing and food poverty. The inability to provide for basic needs has a negative impact on their psychosocial outcomes and educational success, including college completion, academic performance, concentration in class, attendance, worry about disappointing family, sadness, hopelessness, isolation, embarrassment, and frustration (Meza et al., 2019; Patton-López et al., 2014; Silva et al., 2017; Reppond, 2019).

In an effort to develop a retention strategy that focuses on low-income students, states like New York State have implemented the K–12 community schools' model on community college campuses (New York State Community Action Association, 2023). The program was created to address the unmet needs of community college students in the areas of physical and mental health, food insecurity, transportation, and childcare (Troester-Trate, 2017). This study

was designed to explore if SNAP recipient students outperformed their counterparts who did not receive SNAP in retention, GPA, and graduation.

The results of this study indicated mixed findings that part-time and full-time SNAP recipients outperformed their counterparts who did not receive SNAP benefits in terms of retention, graduation, and GPA. Based on the data, the findings for part-time community college students who received SNAP benefits remained consistent throughout the study, showing a "fail to reject" outcome that was not statistically significant for retention, GPA, and graduation. However, for full-time community college students who received SNAP benefits, the results showed a "reject" outcome that was statistically significant for GPA and graduation. In terms of retention, the findings for full-time, SNAP-receiving students were "fail to reject," indicating that it is not statistically significant. The findings align with existing literature, suggesting that SNAP benefits have some effect on retention, GPA, and graduation; however, multiple support services or interventions are necessary to have a greater impact on community college students' retention, GPA, and graduation, as evidenced by the study's findings. According to McCoy et al. (2022), students experiencing food insecurity are more prone to achieving lower GPAs compared to their peers who have consistent access to food. This can have a negative impact on their academic performance, resulting in decreased attendance and lower completion rates.

Future researchers should expand the study of similar models to determine the relationship between various types of comprehensive programs that provide nonacademic services, long-term retention, and persistence of community college students. Further research should consider the possible difficulties with introducing SNAP on campuses, including administrative and logistical issues. The provision of SNAP benefits on campus, for instance, may require community colleges to make large financial investments in staff and equipment. For

administrators and policymakers of community colleges, it is critical to assess the viability and sustainability of such programs in order to make informed decisions. The primary reason that future research should be considered on the provision of SNAP benefits on community college campuses is to determine the impact of such programs on student academic outcomes. Studies have shown that food insecurity can negatively impact academic performance, including lower grades, lower GPAs, and decreased retention rates (Broton & Goldrick-Rab, 2016). By providing SNAP benefits on campus, community colleges may be able to mitigate the impact of food insecurity on these outcomes, leading to improved student success in retention, GPAs, and graduation rates.

It is essential to conduct SNAP research on community college campuses as it can raise awareness of food insecurity and foster support for change. Donors and the general public are more inclined to support attempts to address the problem when they are informed about it and how it impacts students. This might entail speaking out for legislation, giving to charities and food banks, and supporting programs that work to combat food insecurity on community college campuses. Community colleges should introduce support services, such as the offering of SNAP benefits on campus, and take active measures to alleviate food insecurity in order to improve the academic performance of students. By ensuring that students have access to the necessary resources, such as adequate food, community colleges can create an environment conducive to academic achievement and overall well-being. This can potentially raise retention, GPAs, and graduation rates on community college campuses.

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