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IMPACT OF ON-CAMPUS CHILDCARE ON STUDENT PARENT SUCCESS IN A COMMUNITY COLLEGE SETTING

A dissertation submitted in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

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THE SCHOOL OF EDUCATION
at
ST. JOHN'S UNIVERSITY
New York

by

Jessica Dillon

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ABSTRACT

IMPACT OF ON-CAMPUS CHILDCARE ON STUDENT PARENT SUCCESS IN A COMMUNITY COLLEGE SETTING

Jessica Dillon

The present study examines the impact of on-campus childcare on student parent success. Researchers believe the role stress they experience while balancing their responsibilities as students and parents, combined with their increased likelihood of experiencing financial stressors relative to their peers, impact their success outcomes. Supports like on-campus childcare and financial assistance have both shown positive impacts on student parent success but more research is need to understand their combined impact on student parent success. This study used ex post facto data from n=10785 students that were enrolled in at least one class at New York Community College in fall 2018. T-tests, logistic regression, one-way ANOVA and chi-square analysis was conducted with propensity score matched samples to compare non-parents, parents, parents using the on-campus childcare center, and parents using the on-campus childcare center and receiving some type of financial support on success outcomes. Results for student parents vs. non-parent students were consistent with previous research showing poorer outcomes for student parents. Results for parents with children enrolled in childcare in showed positive differences in attempted credits and persistence . There were no significant results relating to funding status. CGCC Findings from this study can be used to shape policy and funding associated with on-campus childcare.

DEDICATION

This work is dedicated the Children's Greenhouse Childcare Center, whose foundation of support made the past six years of balancing school, work and parenthood possible.

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No one accomplishes big things alone. There are so many people that have contributed in so many ways to help me reach my goals.

For my mentors, Dr. Erin Fahle and Dr. Joan Birringer-Haig. Thank you for your guidance, support and insight.

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CHAPTER 1: INTRODUCTION

The current model of higher education is centered around traditional undergraduate students who begin higher education right after their high school graduation and can study full time without having to work. This model, however, does not apply to all students. About 30% of undergraduate students are *nontraditional* (National Center for Education Statistics [NCES], n.d.). Nontraditional students are often defined by their age—they are 25 and older—but they also bring with them challenges and responsibilities that traditional students do not experience. More recently, students that have previously been described as nontraditional have been recategorized under the more inclusive, student-centric category of post-traditional students (Soares, 2013). Both of these terms seek to capture a large variety of characteristics that make up this group. Po Colleges and universities make attending difficult for nontraditional students in many ways including scheduling classes during traditional work hours and not providing services targeted specifically to nontraditional students. As a result, nontraditional students do not persist or complete at the same rate as their traditional counterparts.

Student parents, a subset of nontraditional students and the focus of this study, are particularly vulnerable to these challenges, as evidenced by their low completion rates relative to peers. Student parents are more likely to have left postsecondary education without a degree after 6 years than non-parents (49.7% to 31.1%) (IPWR, 2009). Student parents are also more likely to report that they may need to withdraw from classes due to non-academic obligations than non-parents (IPWR, 2009). In addition, student parents are more likely to be classified as low-income, especially those attending community colleges (Cohen & Brawer, 2009). Analysis of Pell grant recipients in 2003-2004 academic years found that more parents are eligible for Pell grants than non-parents,

especially single parents (Miller, Gault & Thorman, 2011). Further, student parents that can attend classes report lower levels of connection with their student role or had other roles in direct conflict with their student role (Chartrand,1990). These disadvantages, combined with the lack of specialized services for student parents, impact their ability to take advantage of educational opportunities and in turn, the quality of their higher education experience.

Services, including childcare and financial support, may be able to mitigate these challenges. For example, childcare may allow student parents to attend class, have time to study, and to seek out services and educational opportunities they may otherwise not have time to pursue. If on-campus, childcare facilities can also act as a resource center for student parents where they can connect with other student parents and access information about available resources. However, access to childcare may not be sufficient, as the high cost of the service may not be affordable for student parents. Additional financial assistance can alleviate this issue and enable students to access childcare. More research is needed to understand the combined impact of on-campus childcare services and financial assistance on student parent success.

Purpose of the Study

Using data from a large suburban community college in the northeast United States, this study compared academic outcomes of (1) non-parents and parents; (2) parents using and not using the on-campus childcare center, and (3) parents using the on-campus but not receiving financial support and parents using the on-campus childcare plus receiving some type of financial support in order to better understand how childcare and financial support relate to student parents' academic success. These analyses provide a baseline for how student parents compare academically to non-parent students in a

community college setting, which can be used to compare to prior work in this field. Then, they will highlight potential benefits of on-campus childcare and financial assistance for childcare.

New York Community College (NYCC), a pseudonym, is a large suburban community college offering 2-year degrees and certificates. The on-campus childcare at NYCC is called the Children's Garden Childcare Center (CGCC). CGCC provides childcare for children ages 8 weeks to 5 years, and approximately 150 student parents utilize the services of CGCC in an academic year. The center is open to the children of students, faculty, and staff. Parents pay tuition for their children based on hours of use. Student parents may receive financial support to pay for childcare at CGCC through the New York State Child Care and Development Block Grant (CCDBG) or their Title IV Financial Aid funds.

Theoretical and Conceptual Framework

Role theory (Biddles, 1986) suggests that student parents' struggle with persistence and completion may result from juggling too many conflicting demands between their roles as parents and students. In this case, the role of parent in the primary role and the role of student is the secondary role. When conflict arises, the parent role will take precedent and the student role will be disregarded. For example, if a childcare arrangement falls through during a scheduled class time, the parent will care for the child rather than attend a class. Decreasing the conflict between two roles can reduce student-parents' stress and allow them to engage more in their secondary student roles. This study explores whether childcare can effectively reduce that role stress through providing consistent care in a convenient location.

In addition to stress from balancing multiple roles, student parents may also experience financial issues from the added role. As one example, we can think of the cost of schooling not only as the tuition, but also as the cost of the childcare needed for them to attend. Research shows that many student parents do, in fact, experience financial instability (IPWR, 2009), and that financial support for childcare helps increase access to childcare and in turn, access to higher education for student parents (Keyes and Boulten, 1995). Therefore, I also study whether childcare alone versus childcare with financial support lead to differential outcomes for student-parents. This can help with planning of support services for these students.

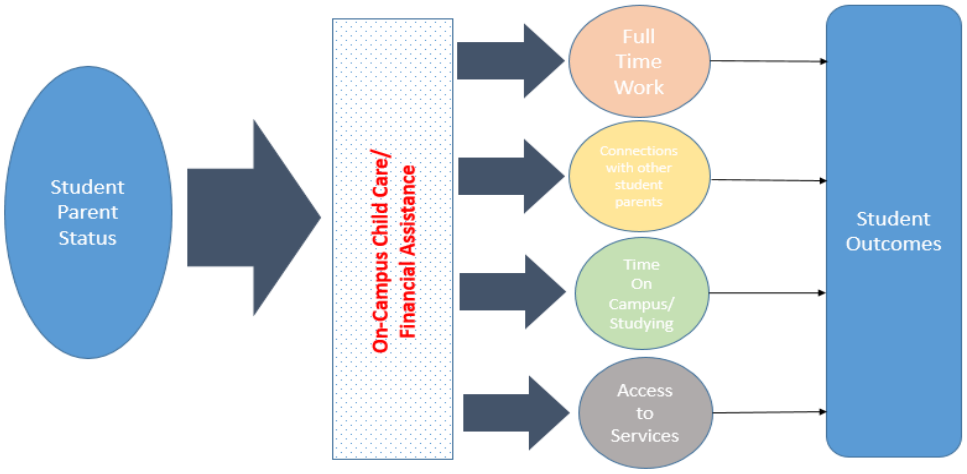
Conceptual Model

The researcher's conceptual model hypothesizes that access to affordable on-campus childcare alleviates some of the stress associated with parenting through enabling student parents to spend more time on-campus where they have access to support services and to spend more time engaged with class materials. Research on student mothers showed that supports like childcare, financial assistance and counseling are beneficial (Huff & Thorpe, 1997). In this study, 296 single parents that attended Boise State University and were receiving financial aid were surveyed. The survey asked questions relating to the academic, financial, social, and emotional needs of these students and their children. Researchers found these student parents had many concerns related to these topics, particularly childcare. Childcare was reported as a source of stress. Findings showed 22% of respondents experienced issues finding childcare during the day, and 42% experienced issues finding childcare evenings and weekends. Researchers made various suggestions on how the college community can better serve these students including increased access to childcare (Huff & Thorpe, 1997).

However, childcare can only satisfy the needs of student parents if it is accessible and affordable. Coupling available childcare with financial support allows parents to access this essential service. More simply, when students are able to invest time in their education while maintaining their responsibilities as a parent without worrying about the financial implications of childcare, they are more likely to have successful outcomes.

Figure 1

Conceptual Framework



In this model the combined responsibility of being a student parent is broken down into more manageable parts when student parents have access to on-campus childcare and financial assistance. Being able to better manage their diverse responsibilities allows students more time to take advantage of academic services and embrace their student role, which, in turn, impacts student outcomes.

Significance of the Study

The goal of this work is to measure the impact of on-campus childcare on persistence and academic success and how the addition of financial assistance can affect that impact. Findings can be used to advocate for on-campus childcare and to

plan the level of services provided such centers, including opening additional seats in the current program, creating new after school programs geared towards school aged children, and hiring advising staff dedicated to helping student parents to create a formal parent resources center. Findings related to financial assistance can also be used to rethink how grant money is distributed and lead to more funding opportunities for student parents and on-campus childcare centers.

Connection to Vincentian Mission

Student parents have historically been underserved in higher education. Higher education has long been a source to uplift the socioeconomic status of degree recipients. Student parents are more likely to be low-income and face multiple barriers to completing their education. Accessible and affordable on-campus childcare can make the difference in student parents meeting their educational goals and achieving post completion success. Moreover, as the education level of a parent is strongly associated with their children's educational outcomes (Attewell, Lavin, Domina & Levey, 2007), the investment made in student parents will uplift not only the parent but will have a multi-generational impact on the family and to community where they live.

Research Questions

This study was guided by three primary research questions:

Research Question 1

Do average GPAs, attempted credits, Earned Credit Ratios (ECRs) and persistence rates differ between students with children and students without children? Does this hold when controlling for demographic information?

Research Question 2

Do the average GPAs attempted credits and ECRs of student parents with at least one child enrolled in on-campus childcare differ from student parents that do not have children enrolled in on-campus childcare?

Research Question 3

Do the GPAs, attempted credits and ECRs of student parents with at least one child enrolled in on-campus childcare who received New York State Childcare and Development Block Grant and/or Title IV Financial Aid funding differ from student parents that did not receive funding?

Definition of Terms

The following terms are used throughout this dissertation as defined below.

Attempted Credits

Number of credits a student registered for in a semester.

Earned Credit Ratio

Percent of credit earned out of credit attempted.

Financial Assistance:

New York State Childcare and Development Block Grant and/or Title IV Financial Aid funding.

GPA

Grade point average which is grade point value x credits/credits

Persistence

Fall 2018 to Spring 2019 continuous registration

Student Parent

Student that indicate having at least one child in their household under the age of 18 on their FAFSA.

Student Parent Using On-Campus childcare

Student that has at least one child enrolled at the Children's Garden Childcare Center.

CHAPTER 2: REVIEW OF RELATED RESEARCH

This chapter provides a background on nontraditional students with a focus on student parents, an overview of the theoretical frame of role theory, a conceptual model for the impact of childcare and financial support on student-parent outcomes, and a summary of empirical research on the impact of childcare and financial support on student-parent outcomes.

Nontraditional Students

Traditional college students are typically 18-24 years old and enroll in undergraduate education directly after high school graduation. Throughout the early 2000s, however, more students aged 25 or older (called "nontraditional students") began taking classes full-time or part-time (Ely, 1997). Between 2007 and 2017 enrollment of students from age 25-34 increased 41% from 3.4 million to 4.7 million. The added students from this age group represent an overall increase in their share of all college students for the same period, from 22% to 24% (National Center for Education Statistics [NCES], n.d.). Additionally, enrollment for students 35 years and older increased by 6% from 2.9 million to 3.1 million in the same period. This group is projected to increase another 5% to 3.3 million between 2017 and 2028 (National Center for Education Statistics [NCES], n.d.). Community colleges have much larger proportions of moderately and highly nontraditional students than 4-year institutions, and much smaller proportions of traditional students (Choy, 2002). As such, nontraditional students are a significant share of college campus enrollment and are projected to maintain that presence in the future, especially at community colleges.

While the initial definition of nontraditional students was based primarily on age, NCES has identified several other traits common among nontraditional students (National

Center for Education Statistics [NCES], n.d.). Nontraditional traits include part time enrollment status (taking less than 12 credits), delayed enrollment (not enrolling in college directly after graduation from high school), working full time while enrolled, financial independence, GED attainment, and having a child (aka. parental status). All these factors, not just age, influence how nontraditional students experience and navigate higher education. More importantly, these factors can have an impact on their academic success.

Many nontraditional students struggle with persistence and degree completion (Gilardi & Guglielmetti, 2011; Tinto 1975, Tinto 1988). NCES compiled data on nontraditional students and found that those who sought an associate's degree were half as likely as their traditional counterparts to have attained their degree (27 percent versus 53 percent) and were twice as likely to have left school without either earning a degree or changing their degree goal (47 percent versus 22 percent) (National Center for Education Statistics [NCES], n.d.). Only one third of nontraditional college students that set out to obtain an associate's degree achieved their goal. The same study found that nontraditional students were more than twice as likely as traditional students to stop attending during their first year (16 percent versus 38 percent). Moreover, researchers found that the more nontraditional traits students had, the worse they fared in persistence and completion (National Center for Education Statistics [NCES], n.d.).

The current study focuses on a subset of nontraditional students: student parents. In addition to their parental status, student parents tend to have a high number of other nontraditional indicators. Many are financially independent, working full time while attending school, and did not enroll in higher education immediately after high school. These factors, combined with the responsibilities of parenting, are likely related to their

lower average rates of persistence and degree completion as compared to their traditional counterparts (Bean & Metzner, 1985; McGivney, 2004; National Center for Education Statistics [NCES], n.d.). Studies have also shown that student parents do not engage as much with traditional retention promoting activities on-campus (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006), which may be related to their reports of limited connections with other students and their professors (Morgan, 2001). In other words, the competing priorities of their responsibilities as a parent and their responsibilities as students influence their ability to engage academically, in multiple ways, and subsequently their educational outcomes. The concept of how the varying aspects of a person's character fluctuate and interact based on societal expectations is formalized as Role Theory.

Theoretical Framework

Role theory emerged in the mid-20th century with Mead (1934) discussing the varying behaviors of individuals in differing environments. This was expanded on by Ralph Turner (1956) and Robert Merton (1957). Their work describes how individuals can have multiple roles in difference social structures and how the behaviors and expectations linked to those roles develop. Merton proposes the concept of role-set, which describes how the multiple roles individuals embody, have to potential to lead to conflict.

Role theory seeks to explain what motivates and influences behaviors associated with roles in different environments. It explores the identities and behaviors we exhibit in certain situations in our life and has been studied in many of the social sciences, including sociology and social psychology. Biddles (1986) writes, “human beings behave in ways that are different and predictable depending on their respective social identities and the situation” (p. 68). Each of the roles we occupy has distinct social privileges and

expectations attached to it, and those roles manifest differently in various social situations. Roles are heavily influenced by societal norms and are mostly evaluated based on overt behaviors. Gender roles, organizational roles, and familial roles are all examples of the roles that are studied under role theory.

Early role theory focused on similarities of behaviors associated with people who share similar social statuses. Theorists believed roles are taught through social norms based in a stable social system, which in turn influences the behavior and cognition of the people who embodied these roles. This perspective is known as Functional or Structural Role theory (Linton, 1936, Parsons & Shils, 1951). In this lens, behavioral expectations associated with a particular role are influenced by the social construct surrounding the role, the person who embodies the role, and those he or she interacts with. The interplay between these forces influences what is considered acceptable behavior in a role and stable societal structures form around those concepts. More recent work on social role theory focuses on the social emotional implications of role expectations. For example, cognitive role theory focuses on what societal factors influence role expectations, and how those expectations influence behavior (Biddle, 1956). Many cognitive role theorists have also examined the ways in which a person perceives the expectations of others and what the effects of those perceptions have on behavior.

The roles we play in society are deeply connected to our behaviors, thoughts, and emotions. Balancing the demands of multiple roles can be stressful. Researchers have suggested that the more diverse the roles that we have in our lives, the more stress we can experience trying to bring them together (Marks & Porter, 1984, Quimby & O'Brien, 2004). Researchers also found that experiencing conflicting priorities within a single role or being unable to meet the incompatible demands of multiple roles can result in role

conflict (Katz & Kahn, 1978). Role conflict can result in feelings of dissatisfaction, fatigue, and stress for those who experience it.

This may be the case for student parents, who find themselves balancing two very demanding and disparate roles that often come in conflict. For example, Chartrand (1990) found nontraditional students have difficulty committing to student roles while simultaneously being committed to other important life roles. The study analyzed 179 nontraditional undergraduate students (140 women and 39 men) at a large Midwestern university. Participants were gathered through various university departments, including the university childcare. Students were asked to complete a survey measuring how much they associate themselves with the separate roles they occupy and their personal distress variables. Researchers compared these results to GPA collected from transcripts. Students with low levels of commitment to the student role and/or low levels of compatibility between themselves and the student role, were less likely to be academically successful. In other words, students that are less likely to identify with their role as a student or had other roles in direct conflict with their student role, experienced negative effects on their commitment levels, academic performance levels, and student distress measures. Programs and services aimed at supporting individuals in their role as a student would help with these struggles.

The role of student can be very demanding. Full time academic study typically consists of twelve or more credit hours per semester. Between class meetings, assignments, projects, and papers, students can expect to put in upwards of 36 hours of work per week during the fifteen-week semester. Incorporating this kind of responsibility into one's life can be difficult adjustment. For students that are juggling other responsibilities, like work and family, it can be insurmountable. For student parents in

particular, the demanding responsibilities associated with being a parent may take priority over academic responsibilities, leaving them frustrated when the roles come into conflict. As a result, they may spend less time engaging with course material or less time on-campus where students can access campus-based resources (e.g., office hours, library, academic writing centers, etc.). And their persistence and completion rates can suffer.

Review of Related Literature

Childcare as a Student Support Service

On-campus childcare has become a vital support for student parents. Childcare comes in many forms including care in one's own home, care in another person's home, care at a designated facility and care with family or friends (ChildCare.gov, n.d.). It is not until recently that it has been integrated into college offerings as a student support service. In this section, I describe the history of childcare on-campus and the impact of childcare on student success.

The History of Childcare

Origins of Childcare. The United States has a long history of childcare. At the turn of the 20th century, women who worked outside of the home were the primary users of childcare. These women were typically working class, poor and/or widowed. In New York, upper class women recognized the need for formal policies and financial support for women unable to be the primary caregivers for their children and began to pursue solutions as a charitable endeavor. Pension funds for women were created to help financially support women with the primary goal of keeping women in the home raising their own children. These pension funds primarily served lower middle class white women who were widowed, and largely ignored the needs of working and poor women (Michel, n.d).

Not until the after the New Deal did the federal government step in to assist with childcare needs. This was mainly to support the war effort and the women that went to work in factories while their husbands were overseas during World War II. After the men returned home, childcare programs set up to support working women were discontinued and efforts were again focused on women caring for their own children in the home. Some proponents continued to push for universal childcare programs, but there was insufficient political support. The federal government did, however, recognize a need for childcare outside of the home as women in the workforce became more of the norm. Their efforts were focused on improving the quality of existing care, not expansion or access.

Modern Childcare. Today in the United States there are various federal, state, and local governments that support childcare in a variety of ways. Unfortunately, these efforts come up short for many working families. Poor and middle-income families are struggling to afford the tremendous cost of childcare (Laughlin, 2010). This results in lower earning parents dropping out of the workforce entirely to care for their children. Many experts have called the current state of childcare in the United States a crisis (McGrath, 2021). There are many different types of childcare options available to parents in the United States. The two main types are in the home or in a childcare facility (ChildCare.gov, n.d.). Childcare in the home ranges from licensed childcare settings within a private home to care provided by a family or friend. This type of childcare is distinct from Childcare Centers in that it takes place in a residential building. This childcare option can be large or small. Depending on the number of children being cared for in the home, the service may or may not require licensure by the state. Childcare centers, on the other hand, are usually located in commercial buildings with large

amounts of children and staff. The children are usually divided into classrooms based on age. These types of childcare facilities offer a wide range of services including early childhood programs, after school care, summer camps and nursery and pre-school. They are usually run by a director and most states require them to be licensed (ChildCare.gov, n.d.).

Campus Childcare. Childcare on college campuses has a similar history to childcare in the United States. The first campus childcare centers appeared in the 1900s as parent cooperatives for graduate students. Not until the 1970s, with an increase in nontraditional students, did they transform into the childcare facilities we see on campuses today (Greenblatt, 1973). On-campus childcare has many distinctive styles (Fadale & Winter, 1991). In the SUNY system, childcare ranges from campus supported childcare centers to direct subsidies for student parents. Most SUNY childcare centers offer care for infants to pre-school aged children. Some are open only to students, while others are open to the entire campus community. Some on-campus childcare services even offer after-school care for school aged children. No matter the population served, on-campus childcare is designed to provide student parents with childcare options that allow them to pursue their degrees and maximize their college experience.

In recent years, the percentage of campuses with childcare centers has been declining. About 49 percent of four-year public colleges provide campus childcare in 2015, lower than the 55 percent that did so in 2004 (Eckerson et al., 2016). The percentage was even smaller and declining faster at community colleges: 44 percent in 2015 versus 53 percent in 2004. The decrease in available on-campus childcare coincides with predicted increases of nontraditional students (National Center for Education

Statistics [NCES], n.d.). With decreasing resources, it is more important than ever to understand the impact of childcare on student success.

The Impact of Childcare on Student Parent Success

The presence of on-campus childcare has been shown to benefit student parents (Fadale & Winter, 1991; Baumgartner & McBride, 2009: Gonchar, 1995; Simmons & Turner, 2004; Lovell, 2014; Matus-Grossman & Gooden, 2002; Van Cleve, 1994). Fadale and Winter (1991) found that campus-based childcare was necessary for student parent enrollment and contributed to academic success. In this study, the researchers surveyed 501 student parents with at least one child attending a SUNY sponsored childcare center. They defined academic success as degree completion, transfer, or continued enrollment. Most student parents surveyed reported that the existence of on-campus childcare was a crucial factor in their decision to attend college and their continued enrollment. Analysis of degree attainment and persistence found that out of the 2,400 student parents receiving childcare, 86.2% met the researcher's definition of success as compared to 59.6% of the total student population. More student parents were completing degrees, transferring, or continuing the education in greater proportion than the general student population. Additionally, student parents reported the childcare center provided supplemental benefits such as opportunities to meet other parents, a central source for college information and advisement. Parents reported having the childcare center as a central place for identifying and accessing services was beneficial to them as parents and students.

Balancing the role of student and parent can be even more difficult with young children. Lovell (2014) found that the parents of young children have less motivation and goal attainment when compared to students with older children. The study was conducted

to understand more about the retention needs of college students who are parents, while considering the necessary balance of their obligations for both family and academic responsibilities as they persist to reach their degree. Seventy-four student parents were identified from a survey of 412 first-year math and English classes from a rural institution with 2-year and 4-year degree programs. The researchers measured motivation, classroom experience and degree attainment goals. The main findings indicated parents with younger children had lower motivation and attainment goals when compared to parents with older children. Additional findings indicated traditional age student-parents taking part in this study with young children pursuing their 4-year degree appeared at greater risk of not completing their degree. The college in this study did not have on-campus childcare. This study affirms how the struggles of parenting while attending school impacts student outcomes.

Supports targeting the specific needs of student parents are vital in helping this group reach their educational goals (Van Cleve, 1994). Van Cleve (1994) examined the attrition rate of 25 single parents enrolled in a Development Psychology course at a community college. The students in the class were all single parents with at least one child under 6 years old. As part of the curriculum, the student parents participated in a support group and used an ad hoc information center as a supportive service. The support group encouraged journaling as a means for coping with the stress related to parenting while taking classes. Results indicated the attrition rate decreased by 9% compared to previous years' attrition rate of single student parents. Participants also indicated an increase in positive self-confidence. These findings are also supported by Matus-Grossman and Gooden (2002). In their survey of community college students, they found

that key support services, like stable childcare, were identified by students as leading factors influencing their ability to stay in college, complete their programs of study.

Qualitative research on onsite childcare in higher education has also shown positive outcomes (Gonchar, 1995; Peterson, 2016). Gonchar (1995) investigates the effect of onsite childcare for student mothers. This study looked at female college student that become pregnant and how they handle the responsibility of caretaking while balancing coursework. Randomly selected female students at Lehman College were used as participants in the study. The researchers interviewed 75 women in total. Twenty-five had children in childcare at Lehman College's onsite childcare (children between the ages 3-5 years old), 25 were on the waiting list for the daycare, and 25 were not using the on-campus childcare or on the waiting list. Researchers conducted 15-minute telephone interviews with all 75 women and randomly selected 5 women from each group (15 total) for an informal in-person interview. The women that were interviewed were given a 17 question survey based on an existing Social Isolation Subscale from the Parenting Stress index. Researchers did a descriptive analysis of data using frequency distributions and a search for significant intergroup different using ANOVA and chi-square analyses. Researchers also did a multiple regression to search for associations and coding and analysis of in-person interviews to better understand the data. The main findings indicated that on-site childcare allowed student mothers to take better advantage of the educational experience. As an additional benefit, mothers with access to onsite childcare saw the value in their education beyond getting a job. Gonchar concluded that onsite childcare "allowed student mothers to take substantially greater advantage of their educational experience and was a highly satisfactory intervention that recognized their special needs" (p. 226).

Financial Support and Student-Parent Success

Nontraditional students are more likely to experience the impact of external factors on their persistence and completion than traditional students. (Bean & Metzner 1985). For student parents struggling to balance their student and parental roles, the added struggles of poverty, financial aid, affordable housing, and other financial issues affect their ability to attend school (Cunningham, 2002; Kahn & Poloakow, 2000). This is especially true for community college students, who tend to have lower socioeconomic status and more financial difficulties than students who attend four-year institutions. (Cohen & Brawer, 2009). The pressure of financial instability adds another layer of difficulty in finding affordable, reliable childcare. Having affordable on-campus childcare can help to ease the burden of finding and arranging childcare services for student parents which allow them to focus their time and energy on their education instead.

Many student parents are low-income. A study on Pell grant eligibility found that student parents are more likely to receive Pell grants than non-parent students (Miller, Gault & Thorman, 2011). Pell grants are awarded to undergraduate students with great financial need determined by a variety of factors, including their Expected Family Contribution (Federal Student Aid, n.d.). Research by Miller, et. Al. (2011) found that 22.5% of non-parents are eligible for Pell grants while 27% of married student parents and 59.4% of single parents are eligible for Pell grants. Financial insecurity is particularly troubling for single parents. Single parents are much more likely than married parents to have low incomes, meaning that they must rely on a combination of government and institutional benefits to pay tuition and arrange childcare, despite spending as much time working for pay as do married parents. In an analysis done by the Institute of Women's

Policy Research, they found that 55% of single parents say that a lack of finances is likely or very likely to cause them to withdraw, compared to 49% among non-parents (IWPR 2009).

Financial aid has been shown as an effective tool for helping nontraditional students persist and complete their degrees. In a study by Chen and Hossler (2016) researchers sought to understand the impact of several types of financial aid on nontraditional student outcomes as measured by degree completion and system departure. They analyzed data from the 16,700 students, collected from the Beginning Postsecondary Student Longitudinal Study through NCES. Data included information from academic years 2003-2004 on students that began their education at a 2-year college. Financial aid appeared to affect drop out risk for this student population with Pell grants having the largest impact of a 4.2% decrease in dropout risk per one thousand dollars with subsidized loans following at a 3.9% decrease per one thousand dollars and unsubsidized at 3.4% decrease per one thousand dollars (Chen & Hossler, 2016). In other words, the study found the more aid that nontraditional students received, the less their risk of dropping out.

Simmons and Turner (2004) further showed that financial support for childcare was associated with higher enrollment for women with children. They examined the impact of helping students cover child-care costs through financial aid and provide suggestive evidence that the policy change resulted in increasing the college enrollment rate of women with children using the National Longitudinal Survey of Youth. Researchers examined ex post facto data from before and after the 1986 Reauthorization of the Higher Education Act that allowed $1000 to be included in the cost of attendance when calculation of Pell grant awards. Their analysis provided a basic difference-in-

differences estimate that showed childcare expenses in the calculation of Pell grant benefits increased the enrollment rate of women with children.

Conclusion

There is a disparity in academic success between student parents and traditional students in higher education. Nontraditional students, particularly student parents, do not persist or complete their degrees at the same rate as traditional students. There are many factors that contribute to these differences, including role stress that results from balancing full-time work, financial issues, and parenting responsibilities. Studies show that services directed towards the specific needs of student parents impact student success. Support services like on-campus childcare, are associated with higher graduation and persistence rates (Fadale & Winter, 1991), and better educational experiences (Gonchar, 1995). In addition to support services, financial assistance impacts student parent persistence and completion. Student parents are more likely to be Pell grant eligible, indicating their increased need. Studies have shown that financial aid, particularly financial aid aimed toward student childcare, decreases dropouts, and increases access to education.

The focus of this study is to examine the combined impact of on-campus childcare with financial assistance towards funding the cost of childcare. The findings from previous studies suggest that student parents with access to on-campus childcare and financial assistance to afford that childcare will impact student success. The researcher test whether this model of childcare will satisfy their parental needs as well as their financial needs associated with accessing childcare, thus easing the role stress they experience while balancing the two competing priorities.

CHAPTER 3: METHOD

The goal of this study is to better understand the relationship between on-campus childcare, financial supports, and student parent academic success in a community college setting. The researcher applied quantitative methods to explore three primary research questions.

Methods and Procedures

Research Questions and Hypotheses

Research Question 1. Do average GPAs, attempted credits, Earned Credit Ratios (ECRs) and persistence differ between students with children and students without children? Does this hold when controlling for demographic information?

H_0: GPAs, attempted credits, ECRs, and persistence rates will not differ among parents and non-parents.

H_1: GPAs, attempted credits, ECRs, and persistence rates will differ among parents and non-parents.

Research Question 2. Do the average GPAs, attempted credits, ECRs and persistence of student parents with at least one child enrolled in on-campus childcare differ from student parents that do not have children enrolled in on-campus childcare?

H_0: Student parents with at least one child enrolled in on-campus childcare will not have different average GPAs, attempted credits, ECRs and persistence than student parents that do not utilize on-campus childcare.

H_1: Student parents with at least one child enrolled in on-campus childcare will have different average GPAs, attempted credits, ECRs and persistence than student parents that do not utilize on-campus childcare.

Research Question 3. Among student parents with at least one child enrolled in on-campus childcare, do the GPAs, attempted credits, ECRs and persistence differ between those who received New York State Childcare and Development Block Grant and/or Title IV Financial Aid funding differ and those that did not receive funding?

H_0: The average GPAs, attempted credits, ECRs and persistence will not differ between student parents who did and did not receive funding.

H_1: The average GPAs, attempted credits, ECRs and persistence will differ between student parents who did and did not receive funding.

Research Design and Data Analysis

This is an ex post facto study using data from a single community college. *T*-tests and binomial logistic regression analyses will be used with propensity score matched samples to compare (1) the outcomes for student parents with similar non-parent students; and (2) the outcomes of student parents with children enrolled in the Children's Garden Childcare Center (CGCC) to similar parents not using the service. Additionally, a one-way ANOVA and Chi-Square test of Independence were performed to compare student parent's academic success measures and persistence based on funding assistance status.

Variables

All of the variables that will be collected are shown in Tables 1 and 2. Descriptions of the data sources for these variables follow in each subsection.

Demographic Information. New York Community College collects student demographic data through the admissions application, high school transcripts, and FAFSA submissions. Student parents were identified in Banner, the college's Enterprise Resource Planning system, using self-reported FAFSA application indicator

'RCRAPP4_HAVE_CHILDREN = 1'. The 'have child' code is connected to the FAFSA question "Do you have children that you support?" indicating the student has at least one child 18 or under in their household. The 'have child" code does not indicate if the child qualifies for the daycare based on age. The indicator also does not indicate what childcare arrangements, if any, the student may have.

Academic Information. Data on major, GPA, attempted credits, and earned credits were taken from student records. GPA is calculated by adding up total quality points divided by total credits. According to Coutinho (2007), GPA "provides a fairly robust measure of success in university" (p. 39). For this study, the researcher will examine the semester GPA because it represents the academic performance of the student during the semester and not their prior performance. Attempted number of credits is the number of credits the student registered for and earned credits are number of credits where the student earned a non-failing grade. The more credits a student attempts in a semester, the faster they will complete their degree. Earned credits are the number of credits the student earned at the end of the semester. It excludes classes that were dropped or failed. Attempted credits and earned credits were combined to create a new variable called the Earned Credit Ratio (ECR). This ratio is a percentage ranging from 0% to 100% representing the ratio of credits earned over credit attempted. GPA, attempted credits, and Earned Credit Ratio are appropriate measures for academic success and degree completion in higher education (Franklin, Streeter, Kim & Tripodi, 2007; Sidle & McReynolds, 1999).

Persistence is typically measured using fall to fall continuous registration status for first-time, full-time students. In this study, persistence was measured using fall 2018 to spring 2019 continuous registration status for all students, not just first-time, full-time

students. This measure will more accurately reflect the impact of childcare and/or financial assistance on the student.

Participation in the Childcare Center and Funding Assistance. Students were identified as using on-campus childcare from the intake forms required for enrollment at The Children's Garden Childcare Center. Student parents that utilize on-campus childcare service and their grant/Title IV funding assistance status was verified using historical records and intake forms from The Children's Garden Childcare Center.

Table 1

Independent Variables Used in Analyses

Variable	Levels/Scale
Student Parent Status	0 = No child 1 = Have child
Student Parent On-Campus Daycare Usage	0 = Child not enrolled in on-campus childcare 1 = Child enrolled in on-campus childcare
Funding Assistance Status	0 = Does not receive funding 1 = Receives partial funding 2 = Receives full funding
Gender	0 = Male 1= Female
Age	Integer
Race/Ethnicity	AM – America Indian/Alaskan Native AN – Asian BL – Black/African American HL – Hispanic/Latino NA – None Reported TW – Two or More WH – White
Major/Degree	AA – Associate CERT – Certificate UND – Undecided/Non-Degree
Pell Grant Status	0 – Pell Grant Ineligible 1 - Pell Grant Eligible

Table 2

Dependent Variables Used in Analyses

Outcome Variables	Operational Definition	Values
GPA	GPA is the sum of quality points (based on semester grades) divided by total credits	0.0 to 4.0
Attempted Credits	Number of credits a student registered for in a semester	Integer value
Earned Credit Ratio	Ratio of earned credits to attempted credits	0.0 to 1.0
Persistence	An indicator of fall 2018 to spring 2019 continuous registration	0 = Did not persist 1 = Did persist

Data Analysis

Research Question 1. The researcher compared the outcomes (e.g., GPAs, attempted credits, ECRs, and persistence rates) of student parents to students without children using *t*-tests and binomial logistic regression. The researcher first compared all student parents to all non-parents. Because the population of student parents likely differs from that of non-parents, the researcher then estimated propensity scores to match the samples based on their prior characteristics. The propensity score matching process used age, gender, race/ethnicity, Pell grant eligibility and degree type to find the nearest non-parent matches to each parent. The researcher checked the validity of the matches by looking at the covariate balance in the matched samples. The researcher then compared the score matched sample of students without children to the parents with children. The level of significance used to reject the null hypothesis was $p < .05$.

Research Question 2. The researcher compared the outcomes (GPAs, attempted credits, ECRs and persistence) of student parents not using the on-campus childcare at The Children's Garden Childcare Center to those of parents with at least one child enrolled in on-campus child. Again, the researcher compared the differences between the two groups using a *t*-test and binomial logistic regression with the raw data and again using propensity score matched samples. The level of significance used to reject the null hypothesis is .05.

Research Question 3. The researcher identified parents with at least one child enrolled in on-campus childcare based on funding status and compare the groups (care only vs. care plus partial funding vs. care plus full funding) on GPA, attempted credits, ECR and persistence. The researcher used a One-Way ANOVA and Chi-Square test of Independence to analyze group differences. The level of significance used to reject the null hypothesis was $p < .05$.

Reliability and Validity of the Research Design

There is a known threat of selection on the internal validity of the study. A student cannot be randomly selected into being a parent so differences among the dependent variable may reflect prior differences among the students assigned to the various levels of the independent design. In order to minimize the threat of selection on internal validity, the researcher used propensity score match populations to compare students with similar characteristics.

There is a known threat of statistical conclusion validity, specifically for research question three, due to low statistical power. The population for CGCC parents was less than anticipated. There was also a threat to statistical conclusion validity because some of

the data violated the assumption for homogeneity of variances for the *t*-test. The Welch's ANOVA was used in instances of assumption violation.

The Sample and Population

Sample

The sample consisted of 10,785 (*n*=10785) students NYCC who were enrolled in at least one class in the Fall 2018 semester. NYCC is a large suburban community college located in New York. 76% of students enrolled were aged 24 (*n*=8,187) and under while 24% (*n*=2,598) of students enrolled were 25 and older. The majority of students (*n*=6,213) were eligible for Pell Grant, with 42% (*n*=4,572) not eligible. The population is comprised predominately of minority students. Table 3 below describes the demographics of students included in this study.

Four groups of students are of interest in this study: non-parents, parents, parents using the on-campus childcare center, and parents using the on-campus childcare center and receiving some type of financial support. The majority of students in the sample were non-parents (*n*=9,461) with only 12% (*n*=1,324) of the sample identified as parents. Parents include all students on the campus reporting a child on their FAFSA. Not all students complete FAFSA forms so not all parents may be captured using this indicator. Therefore, findings relating to student parents in this study will be limited to student parents that self-identify on the FAFSA form and may not apply to all student parents in general. Of the 9461 non-parents 79% (*n*=7433) were 24 and younger with 21% (*n*=2028) aged 25 and older. Of the 1324 identified parents only 16% (*n*= 212) were 24 and younger with the remaining 84% (*n*=1112) aged 25 and older. Additional demographic information is on Table 4.

Table 3

Demographic Characteristics of NYCC Students Registered in Fall 2018

		Total	Percentage
Gender			
	Female	5730	53.1
	Male	5055	46.9
Race Ethnicity			
	American Indian	27	0.3
	Asian	768	7.1
	African-American	2685	24.9
	Hawaiian/Island Pacific	29	0.3
	Hispanic	3567	33.1
	Two or More Races	233	2.2
	Unknown	402	.4
	White	3074	28.5
Student Parent Status			
	No Child	9461	25.9
	Have Child	1324	25.1
Pell Eligibility Status			
	Pell Grant Ineligible	4572	42.4
	Pell Grant Eligible	6213	57.6
Degree Type			
	Associates Degree	10217	94.7
	Certificate	224	3.2
	No Degree	344	2.1

Note. There were 10785 students in the sample

Table 4

Demographic Characteristics of NYCC Student Parent Status Before Propensity Score Matching

		Pre-PSM Non-Parent	Pre-PSM Non-Parent Percentage	Pre-PSM Parent	Pre-PSM Parent Percentage
Gender					
	Female	4651	49.1	1079	81.4
	Male	4810	50.8	245	18.6
Race Ethnicity					
	American Indian	25	0.3	2	0.1
	Asian	700	7.3	68	5.1
	African-American	2146	22.7	539	40.7
	Hawaiian/Island Pacific	24	0.3	5	0.3
	Hispanic	3133	33.1	434	32.8
	Two or More Races	210	2.2	23	1.7
	Unknown	345	3.6	57	4.3
	White	2878	30.5	196	14.9
Pell Eligibility					
	Not Eligible	4247	44.9	325	32.5
	Eligible	5214	55.1	999	67.5
Degree Type					
	Associates	8990	95	1227	92.7
	Certificate	180	2.0	44	3.3
	No Degree	291	3.0	53	4.0

Propensity score matching was used to match student parents with their most similar neighbor in the non-parent student population. The researcher decided to use a 0.2 match tolerance to balance the need for quality matches and to maintain the population. At the 0.2 level, 254 parents were not matched, decreasing the parent population from 1,324 to 1070. The total population was *n*=2,140 (Parent=1070, Non-Parent=1,070). Of the 1070 matched non-parents, 48% (*n*=510) were 24 and younger with 52% (*n*=560)

aged 25 and older. Of the 1070 parents 20% (*n*= 212) were 24 and younger with the remaining 80% (*n*=858) aged 25 and older. Remaining demographic information for the new population is detailed in Table 5.

Table 5

Demographic Characteristics of NYCC Student Parent Status After Propensity Score Matching

		Post-PSM Non-Parent	Post-PSM Non-Parent Percentage	Post-PSM Parent	Post-PSM Parent Percentage
Gender					
	Female	722	67.4	846	79.1
	Male	348	32.6	224	20.9
Race Ethnicity					
	American Indian	4	0.4	2	0.2
	Asian	61	5.7	64	6.0
	African-American	339	31.7	408	38.1
	Hawaiian/Island Pacific	4	.4	5	0.5
	Hispanic	362	33.8	351	32.8
	Two or More Races	23	2.2	20	1.9
	Unknown	39	3.6	45	4.2
	White	238	22.2	175	16.3
Pell Eligibility					
	Not Eligible	388	36.3	292	27.3
	Eligible	692	63.7	778	72.7
Degree Type					
	Associates	1007	94.1	992	92.7
	Certificate	25	2.3	33	3.1
	No Degree	38	3.6	45	4.2

One the largest differences between the unmatched population and the matched population is age. The unmatched non-parent sample was much younger (*M*=21.32, *SD*=5.203) than the parent sample (*M*=32.96, *SD*=8.57). The matched sample showed less of a difference between parents (*M*=31.18, *SD*=9.672) and non-parents (*M*=27.39,

SD=10.794). There was also a large difference in representation of race between the matched sample and the unmatched sample. The unmatched sample the non-parent population had a larger percentage of white students (30.5%) and smaller percentage of Black students (22.7%) as compared to the parent population (14.9% and 40.7%, respectively). As illustrated in Table 5, the matched sample the non-parent population had a similar percentage of white students (22.2% non-parent, 16.3% parent) and black students (31.7% non-parent, 38.1% parent).

Parents using the on-campus childcare center, with and without funding assistance, are a subset of the latter group and described in more detail below.

The Children's Garden Childcare Center and Funding Assistance. The Children's Garden Childcare Center (CGCC) is an on-campus daycare sponsored by the Faculty Student Association at New York Community College (NYCC) established in 1979. The CGCC provides childcare for children ages 8 weeks to 5 years. Their services are available for the children of students, faculty, and staff of NYCC. Tuition is based on family income with students paying $6.75 per hour and faculty and staff paying up to $10.75 per hour. There were *n*=70 student parents with at least one child attending CGCC in the and *n*=1254 student parents that did not have a child in CGCC. Of the 1254 non-CGCC parents 16% (*n*=195) were 24 and younger with 84% (*n*=1059) aged 25 and older. Of the 70 CGCC parents 24% (*n*= 17) were 24 and younger with the remaining 76% (*n*=53) aged 25 and older. Additional demographic information for this population is on table 6.

Table 6

Demographic Characteristics of CGCC Student Parent Status Before Propensity Score Matching

		Pre-PSM Non-CGCC Parent	Pre-PSM Non-CGCC Parent Percentage	Pre-PSM CGCC Parent	Pre-PSM CGCC Parent Percentage
Gender					
	Female	1012	80.7	67	95.7
	Male	242	23.6	3	4.3
Race Ethnicity					
	American Indian	2	0.2	0	0
	Asian	62	4.9	6	8.6
	African-American	520	41.5	19	27.1
	Hawaiian/Island Pacific	5	0.3	0	0
	Hispanic	413	32.9	21	30
	Two or More Races	21	1.7	2	2.9
	Unknown	51	4.1	6	8.5
	White	180	14.4	16	22.9
Pell Eligibility					
	Not Eligible	301	24.0	24	34.2
	Eligible	953	76.0	46	65.8
Degree Type					
	Associates	1165	92.9	62	88.6
	Certificate	41	3.3	3	4.2
	No Degree	48	3.8	5	7.2

Parents with children attending CGCC were matched with non-CGCC parents using propensity score matching. The researcher used a .01 match tolerance to balance the need for quality matches and to maintain the population. This value was selected because matches all the way up to .2 tolerance still excluded two CGCC parents. The new population of parents was *n*=136 (CGCC parent *n*=68, Non-CGCC Parent *n*=68). Of the 68 matched non-CGCC parents 29% (*n*=20) were 24 and younger with 71% (*n*=48) aged

25 and older. Of the 68 CGCC parents 25% (*n*= 17) were 24 and younger with the remaining 76% (*n*=51) aged 25 and older. Additional demographics for this group is in Table 7.

Table 7

Demographic Characteristics of CGCC Student Parent Status After Propensity Score Matching

		Post-PSM Non-CGCC Parent	Post-PSM Non-CGCC Parent Percentage	Post-PSM CGCC Parent	Post-PSM CGCC Parent Percentage
Gender					
	Female	65	95.6	65	95.6
	Male	3	4.4	3	4.4
Race Ethnicity					
	American Indian	0	0	0	0
	Asian	10	14.7	6	8.8
	African-American	13	19.1	19	27.9
	Hawaiian/Island Pacific	0	0	0	0
	Hispanic	19	27.9	21	30.9
	Two or More Races	3	4.4	2	2.9
	Unknown	5	7.4	4	5.9
	White	18	26.5	16	23.5
Pell Eligibility					
	Not Eligible	21	30.9	22	32.4
	Eligible	47	69.1	46	67.6
Degree Type					
	Associates	63	92.6	60	88.2
	Certificate	2	2.9	3	4.5
	No Degree	3	4.5	5	7.3

Similar to the parent and non-parent comparison, race was the most noticeable differences between the unmatched population and the PSM population. The unmatched sample the non-parent population had a larger percentage of black students (41.5%) and

smaller percentage of white students (14.4%) as compared to the parent population (27.1% and 22.9%, respectively). As illustrated in Table A, the percentage of Black and white students in the parent and non-parent populations were not as large in the matched sample. The matched sample the non-parent population had a similar percentage of white students (22.2% non-parent, 16.3% parent) and black students (31.7% non-parent, 38.1% parent). There was less of a difference in age between the matched population and unmatched population of CGCC vs. non-CGCC parents. Average CGCC parent age in the unmatched sample (M=29.39, SD=5.99) and matched sample (M=29.46, SD=6.05) was similar as was the average age of non-CGCC parents in the unmatched (M=33.16, SD=8.67) and matched sample (M=31.03, SD=8.26).

Parents may receive financial support to pay for childcare at CGCC. The New York State Child Care and Development Block Grant (CCDBG) is applied for by the childcare service and distributed to student parents based on income. The childcare services then pass those savings along to the parents in the form of childcare tuition grants; students then are expected to pay a small co-pay to the childcare center. The CGCC also allows students to use remaining Title IV Financial Aid funds for non-instructional expenses to pay towards their childcare costs. For students to be Title IV eligible, they must meet the criteria outline in Section 484 of the Higher Education Act of 1965. This includes being registered in a program that leads to a degree (e.g., an associate's or bachelor's degree) or certificate that prepares students for gainful employment in a recognized occupation. The student must also maintain satisfactory academic progress. The student parent can request that funds in excess of tuition and fees be used toward their childcare bill. This study will look at student parents that use one or both funding resources to fund their childcare. Of the 70 parents with children in the

CGCC 40% (*n*=28) received partial funding, 16% (*n*=16) received full funding and 37% (*n*=26) received no funding at all. The average age of parents by funding status was as follows: fully funded: *M*=28.31, *SD*=5.90, partially funded: *M*=28.07, *SD*=6.336, unfunded: *M*=31.46, *SD*=5.26. All other demographic information for funding status is on Table 8.

Table 8

Demographic Characteristics of CGCC Parent Funding Status

		No Funding	Partial Funding	Full Funding
Gender				
	Female	25	26	16
	Male	1	2	0
Race / Ethnicity				
	American Indian	0	10	0
	Asian	4	1	1
	African-American	4	10	5
	Hawaiian/Island Pacific	0	0	0
	Hispanic	8	8	5
	Two or More Races	0	0	0
	Unknown	5	1	0
	White	5	6	5
Pell Eligibility				
	Not Eligible	17	4	3
	Eligible	9	24	13
Degree Type				
	Associates	21	26	15
	Certificate	1	1	1
	No Degree	4	1	0

Procedures for Collecting Data

The researcher obtained Institutional Review Board approval from both NYCC and St. John's University. Demographic and academic information for all registered students were obtained from the Office of Institutional Research at NYCC for the fall

2018 and spring 2019 semesters. Spring 2019 information were used to evaluate fall to spring persistence rates, not academic performance.

Research Ethics

This study used archived data and did not have any risks to students that were greater than what they would normally incur applying and registering for classes. To protect student privacy and maintain confidentiality, student names and ID numbers were omitted from the analysis and replaced with new unique identifiers by the NYCC office of Institutional Research. Data were stored and analyzed on NYCC networks to insure data security.

Conclusion

The four groups of interest, non-parents, parents, parents using the on-campus childcare center, and parents using the on-campus childcare center and receiving some type of financial support, were analyzed using the entire population and the propensity score matched samples. Differences in academic success were measured between non-parents, parents, parents using the on-campus childcare center, and parents using the on-campus childcare center and receiving some type of financial support were identified. Chapter 4 provides the results of the analyses.

CHAPTER 4: RESULTS

The population consisted of students registered for at least one class in the fall 2018 semester at New York Community College (NYCC). The full dataset received from the NYCC Office of Institutional Research contained data from *n*=17,563 students. The researcher was unable to identify the parent status for students that did not complete the Free Application for Federal Student Aid (FAFSA) question related to parent status. Students that had a blank parent status were removed from the sample (*n*=6761), unless they were identified as Children's Garden Center Childcare (CGCC) parents. There were *n*=14 CGCC parents that had blank FAFSA parent indicator that were recoded to parent. In addition, there were *n*=3 CGCC parents that were coded as non-parent based on FAFSA indicator. The researcher assumed that the time interval between FAFSA completion and birth of a child resulted in the discrepancy and the three students were recoded to parent. After data cleaning, the total number of students in the sample was *n*=10,785.

The dependent variable Earn Credit Ratio (ECR) was calculated by dividing the total earned credits by the total attempted credits for each student. ECR showed the percentage of credits a student earned compared to how many credits they registered for.

Research Question 1 (a & b)

Do average GPAs, attempted credits, Earned Credit Ratios (ECRs) and persistence differ between students with children and students without children (a) (unmatched population)? Does this hold when controlling for demographic information (b) (matched population)?

H_0: Term GPAs, attempted credits, ECRs, and persistence will not differ among parents and non-parents.

The researcher chose to do a series of independent sample *t*-tests and a binomial logistic regression in order to answer research questions 1(a) and 1(b). The researcher determined the *t*-tests were an appropriate analysis to use for the continuous variables of term GPA, attempted credits and ECR to identify if there was a significant mean difference between the two independent, unrelated groups on the dependent variables. An alpha level of $p < .05$ was chosen for testing the significance. The categorical independent variable for research question one was student parent status with only two levels (parent, non-parent) and the dependent variables term GPA, attempted credits and ECR were continuous. The assumptions for normality were violated for all continuous variables in both the matched and unmatched samples. However, the statistical analyses for independent samples *t*-tests are robust to normality, which means that they are not sensitive to requiring normal distributions (Winer, Brown & Michaels, 1991).

The researcher determined that binomial logistic regression was an appropriate analysis for the dichotomous dependent variable of persistence. To answer research question one with persistence as the dependent variable, the categorical independent variable was student parent status with only two levels (parent, non-parent) and the dependent variable persistence was categorical with two levels (yes, no). Binomial logistic regression was an appropriate statistical analysis to use when an observation falls into one of two categories of a dichotomous categorical dependent variable based on independent variables that can be either continuous or categorical. The predictor independent variable, which was student parent status, was coded as: 0 = No and 1 = Yes. The outcome dependent variable, which was fall 2018 to spring 2019 persistence, was

coded as: 0 = No and 1 = Yes. In order to determine if the data were appropriate to use with a binomial logistic regression, seven assumption tests were run on both the matched and unmatched samples. In both samples, the dependent variable was measured on a dichotomous scale (0, 1). There was one independent variable, which was categorical, and it was dummy coded (0, 1). There was independence of observations as the participants could only belong to one group in the independent variable (1 = focus category for the researcher; 0 = other). The dependent variable had mutually exclusive and exhaustive categories (1 = expected outcome; 0 = the alternative result). There were no continuous independent variables so the assumption of linearity with the Log Odds of the dependent variable did not apply. Sample size was more than adequate as there were n=10,785 students in the unmatched sample and n=2,140 students in the matched sample. Since logistic regression relies on a goodness-of-fit test as a means of assessing the fit of the model to the data, a crosstabs analysis was run. For both the matched and unmatched samples, each of the cells had a count of ($n > 5$). Logistic regression is very sensitive to multicollinearity. The collinearity statistics showed that the assumption was met in both samples as the VIF score was well below 10 (statistic = 1.000) and the Tolerance score was above .20 (statistic = 1.000).

Three *t*-tests were performed on the unmatched sample of student parents and students without children on term GPA, attempted credits and ECR. It was found that parents had higher term GPA (M=2.70, SD=1.303) than non-parents (M=2.526, SD=1.266), the mean difference of -.181 was significant, $t(10693) = -4.834$, $p < .001$. There was a small effect size, d= -.142. The null hypothesis was rejected. It was also found that parents in the unmatched sample had lower attempted credits (M=9.810, SD=4.0237) than non-parents (M=12.072, SD=3.5402), the mean difference of 2.261 was

significant, $t(1609.034)=19.345$, $p<.001$). There was a medium effect size, $d=.628$. The null hypothesis was rejected. When comparing ECR, parents in the unmatched sample had higher ECR ($M=.724$, $SD=.3632$) than non-parents ($M=.6872$, $SD=.3581$), the mean difference of -.037 was significant, $t(10661)=-3.491$, $p<.001$). There was a small effect size, $d=-.103$. There is a statistically significant difference between parents and non-parents in terms of term GPA, attempted credits an ECR in the unmatched sample. These results are outlined in Table 9.

Table 9

T-Test Results Comparing Parents vs. Non-parents on Term GPA, Attempted Credits and ECR in Unmatched Sample

	Parent		Non-Parent					
	M	*SD*	*M*	*SD*	*df*	*t*	*p*	*Cohen's d*
Term GPA	2.70	1.303	2.52	1.266	10693	4.834	<.001	-.142
Attempted Credits	9.810	4.023	12.07	3.540	1609.034	19.345	<.001	.628
ECR	.724	.3632	.687	.3581	10661	3.491	<.001	-.103

Note. The Welch test is reported because Levene's test indicated that the homogeneity of variance assumption was not met for Attempted Credits.

A standard binary logistic regression was performed to identify the effect of student parent status on the likelihood of persistence from fall 2018 to spring 2019 on the unmatched sample. Based on a significance level of $p < .05$, results indicated that the regression model was statistically significant, χ^2 (1) = 4.213, $p = .040$. The model explained .1% (Nagelkerke R^2) of the variance in student parent persistence and correctly classified 100% of the cases. Parents were .869 times less likely to be enrolled in classes for spring 2019 than non-student parents (95% CI .759, .994). This analysis as is shown

in Table 10 indicates that the null hypothesis is rejected as student parent status significantly influenced whether or not students demonstrated persistence in community college from fall 2018 to spring 2019.

Table 10

Binary Logistic Regression Results of the Factor Predicting Persistence for Unmatched Student Sample

Model	*b*	*SE B*	*Wald* X^2	*df*	*Sig.*	*Exp (B)*	*95% CI Exp (B)*
Parent Status	-.141	.069	4.213	1	.040	.869	

Note. The dependent variable was persistence for one semester fall 2018 to spring 2019 with persistence (yes) as the reference category or no persistence as the target category; student parent status was the focus group of the participation variable; Nagelkerke R^2 = .001.

T-tests and binomial logistic regression analyses were then performed on the propensity score matched sample of students. Three *t*-tests analyses were then conducted on the propensity score matched sample of non-parents and parents for to answer research question 1(b). In the matched sample, parents had lower term GPA (*M*=2.701, *SD*=1.307) than non-parents (*M*=2.827, *SD*=1.100), the mean difference of .125 was significant, *t*(2062.606)=2.403, *p* =.016). There was a small effect size, *d*=.104. The null hypothesis was rejected. These results are opposite of what was found in the unmatched sample. For attempted credits, parents had lower attempted credits (*M*=9.892, *SD*=4.0686) than non-parents (*M*=11.188, *SD*=3.7800), the mean difference of 1.295 was significant *t*(2112.021)=7.605, *p* <.001). There was a small effect size, *d*=.330. The null hypothesis was rejected. For ECR, parents had lower earned credit ratios (*M*=.723, *SD*=.3637) than non-parents (*M*=.7404, *SD*=.3204), the mean difference of .017 was not

significant $t(2077.381)=1.164$, $p = .245$. The null hypothesis was retained. These results are outlined in Table 11.

Table 11

T-Test Results Comparing Parents vs. Non-parents on Term GPA, Attempted Credits, and ECR in Matched Sample

	Parent		Non-Parent					
	M	*SD*	*M*	*SD*	*df*	*t*	*P*	*Cohen's d*
Term GPA	2.70	1.307	2.827	1.100	2062.606	2.403	.016	.104
Attempted Credits	9.892	4.0686	11.188	37800	2112.021	7.605	<.001	.330
ECR	.723	.3637	.7404	.3204	2077.381	1.164	.245	

Note. Welch test is reported because Levene's test indicated that the homogeneity of variance assumption was not met for all variables.

A standard binary logistic regression was performed to identify the effect of student parent status on the likelihood of persistence from fall 2018 to spring 2019 on the matched sample. Based on a significance level of $p < .05$), results indicated that the regression model was statistically significant, χ^2 (1) = 73.775, $p < .001$. The model explained 6% (Nagelkerke R^2) of the variance in student parent persistence and correctly classified 100% of the cases. Parents were .350 times less likely to be enrolled in classes for spring 2019 than non-student parents (95% CI .275, .445). This analysis as is shown in Table 12 indicates that the null hypothesis is rejected as student parent status significantly influenced whether or not students' demonstrated persistence in community college from fall 2018 to spring 2019.

Table 12

Binary Logistic Regression Results of the Factor Predicting Persistence in Matched Student Sample

Model	*b*	*SE B*	*Wald* X^2	*df*	*Sig.*	*Exp (B)*	*95% CI Exp (B)*
Parent Status	-1.05	.122	73.755	1	<.001	.350	

Note. The dependent variable was persistence for one semester fall 2018 to spring 2019 with persistence (yes) as the reference category or no persistence as the target category; student parent status was the focus group of the participation variable; Nagelkerke $R^2 = .060$.

Research Question 2 (a & b)

Do the average GPAs, attempted credits, ECRs and persistence of student parents with at least one child enrolled in on-campus childcare differ from student parents that do not have children enrolled in on-campus childcare (a) (unmatched population)? Does this hold when controlling for demographic information (b) (matched population)?

H_0: Student parents with at least one child enrolled in on-campus childcare will not have different average GPAs, attempted credits, ECRs and persistence than student parents that do not utilize on-campus childcare.

The researcher chose to do a series of independent sample *t*-tests and binomial logic regression in order to answer research question 2(a) and 2(b). The researcher determined that the *t*-tests were an appropriate analysis to use for the continuous variables of term GPA, attempted credits and ECR to identify if there was a significant mean difference between the two independent, unrelated groups on the dependent variables. An alpha level of $p < .05$ was chosen for testing the significance. The

categorical independent variable for research question two was CGCC student parent status with only two levels (CGCC parent, non-CGCC parent) and the dependent variables term GPA, attempted credits and ECR were continuous. The assumptions for normality were violated for all variables in both the unmatched and matched samples. However, the statistical analyses for independent samples *t*-tests are robust to normality, which means that they are not sensitive to requiring normal distributions (Winer, Brown & Michaels, 1991).

The researcher determined that binomial logistic regression was an appropriate analysis for the dichotomous dependent variable of persistence. To answer research question two with persistence as the dependent variable, the categorical independent variable was student parent status with only two levels (CGCC parent, non-CGCC parent) and the dependent variable persistence was categorical with two levels (yes, no). Binomial logistic regression was an appropriate statistical analysis to use when an observation falls into one of two categories of a dichotomous categorical dependent variable based on independent variables that can be either continuous or categorical. The predictor independent variable, which was CGCC parent status, was coded as: 0 = No and 1 = Yes. The outcome dependent variable, which was fall 2018 to spring 2019 persistence, was coded as: 0 = No and 1 = Yes. In order to determine if the data were appropriate to use with a binomial logistic regression, seven assumption tests were run on both the matched and unmatched samples. In both samples, the dependent variable was measured on a dichotomous scale (0, 1). There was one independent variable, which was categorical, and it was dummy coded (0, 1). There was independence of observations as the participants could only belong to one group in the independent variable (1 = focus category for the researcher; 0 = other). The dependent variable had mutually exclusive

and exhaustive categories (1 = expected outcome; 0 = the alternative result). There were no continuous independent variables so the assumption of linearity with the Log Odds of the dependent variable did not apply. Sample size was more than adequate as there were *n*=1324 student parents in the unmatched sample and *n*=136 student parents in the matched sample. Since logistic regression relies on a goodness-of-fit test as a means of assessing the fit of the model to the data, a crosstabs analysis was run. For the matched samples, each of the cells had a count of (n > 5). This assumption was violated for the unmatched population. The CGCC parent/did not persist cell had n=4 participants. Logistic regression is very sensitive to multicollinearity. The collinearity statistics showed that the assumption was met in both samples as the VIF score was well below 10 (statistic = 1.000) and the Tolerance score was above .20 (statistic = 1.000).

Three *t*-tests were performed on the unmatched sample of student parents with at least one child enrolled in the Children's Garden Center Childcare (CGCC) to students without children enrolled in CGCC on term GPA, attempted credits and ECR to answer research question 2(a). In the unmatched sample, CGCC parents had higher term GPA (*M*=2.97, *SD*=1.186) than non-CGCC parents (*M*=2.69, *SD*=1.308), but the mean difference of -.277 was not significant, $t(1311)=-1.734$, $p=.083$). The null hypothesis was retained. For dependent variable attempted credits, CGCC parents attempted more credits (*M*=10.873, *SD*=3.6982) than non-CGCC parents (*M*=9.750, *SD*=4.034), and the mean difference of -1.122 was significant, $t(1311)=-2.274$, $p=.023$). The null hypothesis was rejected. The effect size was small, $d= -.279$. Finally, in terms of ECR, CGCC parent had higher earned credit ratios (*M*=.739, *SD*=.3569) than non-CGCC parents (*M*=.723, *SD*=.3637) but the mean difference of -.016 was not significant, $t(1303)= -.365$, $p=.715$). The null hypothesis was retained. These results are outlined in Table 13.

Table 13

T-Test Results Comparing CGCC Parents vs. Non-CGCC Parents on Term GPA, Attempted Credits, and ECR in Unmatched Population

	CGCC Parent		Non-CGCC Parent					
	M	*SD*	*M*	*SD*	*df*	*t*	*p*	*Cohen's d*
Term GPA	2.97	1.186	2.69	1.308	1311	1.734	.083	-
Attempted Credits	10.873	3.6982	9.75	4.034	1311	2.274	.023	-.279
ECR	.739	.3569	.723	.3657	1303	-.365	.715	-

A standard binary logistic regression was performed to identify the effect of CGCC parent status on the likelihood of persistence from fall 2018 to spring 2019 on the unmatched sample. Based on a significance level of $p < .05$, results indicated that the regression model was statistically significant, χ^2 (1) = 10.105, $p = .040$. The model explained 1.7% (Nagelkerke R^2) of the variance in student parent persistence and correctly classified 100% of the cases. CGCC parents were 4.435 times more likely to be enrolled in classes for spring 2019 than non-CGCC parents (95% CI 1.770, .1.112). This analysis as is shown in Table 14 indicates that the null hypothesis is rejected as CGCC parent status significantly influenced whether or not students' demonstrated persistence in community college from fall 2018 to spring 2019.

Table 14

Binary Logistic Regression Results of the Factor Predicting Persistence Unmatched CGCC Parent Population

Model	*b*	*SE B*	*Wald* X^2	*df*	*Sig.*	*Exp (B)*	*95% CI Exp (B)*
Parent Status	1.490	.469	10.105	1	.001	4.435	

Note. The dependent variable was persistence for one semester fall 2018 to spring 2019 with persistence (yes) as the reference category or no persistence as the target category; student parent status was the focus group of the participation variable; Nagelkerke R^2 = .017.

Three *t*-test analyses were then conducted on the propensity score matched sample of CGCC parents and non-CGCC parents to answer research question 2(b). In the matched sample, CGCC parents had lower term GPA (*M*=2.9475, *SD*=1.195) than non-CGCC parents (*M*=3.07, *SD*= 1.137), but the mean difference of .125 was not significant *t*(134)=.625, *p*=.533). The null hypothesis was retained. CGCC parents attempted more credits (*M*=10.913, *SD*=3.720) than non-CGCC parents (*M*=10.191, *SD*= 3.512), but the mean difference of -.722 was not significant *t*(134)=-1.164, *p*=.247). The null hypothesis was retained. Finally, CGCC parents had lower earned credit ratio (*M*=.747, *SD*=.358) than non-CGCC parents (*M*=.799, *SD*= .325), but the mean difference .051 was not significant *t*(134)=.881, *p*=.380). The null hypothesis was retained. These results are outlined in Table 15.

Table 15

T-Test Results Comparing CGCC Parents vs. Non-CGCC Parents on Term GPA, Attempted Credits, and ECR in Matched Population

	CGCC Parent		Non-CGCC Parent					
	M	*SD*	*M*	*SD*	*df*	*t*	*p*	*Cohen's d*
Term GPA	2.9475	1.195	3.07	1.137	134	.625	.533	-
Attempted Credits	10.913	3.720	10.191	35.12	134	1.164	.247	-
ECR	.747	.358	.799	.325	134	.380	.380	-

A standard binary logistic regression was performed to identify the effect of CGCC parent status on the likelihood of persistence from fall 2018 to spring 2019 on the unmatched sample to answer research question 2(b). Based on a significance level of $p < .05$, results indicated that the regression model was not statistically significant, χ^2 (1) = 2.022, $p = .155$. This analysis as is shown in Table 16 indicates that the null hypothesis was retained as CGCC parent status did not significantly influence whether or not students' demonstrated persistence in community college from fall 2018 to spring 2019.

Table 16

Binary Logistic Regression Results of the Factor Predicting Persistence Unmatched CGCC Parent Population

Model	*b*	*SE B*	*Wald* X^2	*df*	*Sig.*	*Exp (B)*	*95% CI Exp (B)*
Parent Status	.892	.627	2.022	1	.155	2.441	

Note. The dependent variable was persistence for one semester fall 2018 to spring 2019 with persistence (yes) as the reference category or no persistence as the target category.

Research Question 3

Among student parents with at least one child enrolled in on-campus childcare, do the GPAs, attempted credits, ECRs and persistence differ between those who received New York State Childcare and Development Block Grant and/or Title IV Financial Aid funding differ and those that did not receive funding?

H_0: The average GPAs, attempted credits, ECR and persistence will not differ between student parents who did and did not receive funding.

The researcher chose to do three, one-way between subjects ANVOAs and Chi-Square test of Independence to answer research question three. One-way between subjects ANVOA was chosen as the appropriate analysis to determine whether there were any statistically significant differences among the means of the continuous dependent variables, term GPA, attempted credits and ECR, in the three groups. An alpha level of $p < .05$ was chosen for testing the significance. The categorical independent variable for research question one was funding status with three levels (fully funded, partially funded and unfunded) and the dependent variables term GPA, attempted credits and ECR were continuous. The assumptions for normality were violated for all variables in both the matched and unmatched samples. However, the statistical analyses for between-groups ANOVAs are robust to normality, which means that they are not sensitive to requiring normal distributions (Winer, Brown & Michaels, 1991).

Chi-Square test of Independence was chosen as the appropriate analysis to determine whether there were any statistically significant differences in the categorical variable persistence in the three groups (fully funded, partially funded and unfunded). An alpha level of .05 was chosen for testing the significance. The categorical independent variable for research question three was funding status with three levels (fully funded,

partially funded and unfunded) and the dependent variables term GPA, attempted credits and ECR were continuous. The dependent variable persistence was categorical with two levels (yes, no). All observations were independent and individuals only belonged to one group. The expected value of cells unfunded/did not persist (n=4), partially funded/did not persist (n=1) and fully funded/did not persist (n=0) was violated as there was a small sample size.

The researcher compared the outcomes of student parents with at least one child enrolled in CGCC that received full funding, partial funding or no funding on term GPA, attempted credits and ECR using a One-Way ANOVA to compare groups. For the dependent variable term GPA, fully funded parents had higher term GPAs (M= 3.30, SD=.60) than partially funded (M=2.72, SD = 1.22) and unfunded parents (M=3.03, SD= 1.38) but the main effect of funding status on term GPA was not significant, $F(2,69)$ = 1.297, p = .280. The null hypothesis was retained. These results are outlined in Table 17.

Table 17

One-Way ANOVA Results Comparing CGCC Parent Funding Status on Term GPA

	SS	*df*	*MS*	*F*	*p*
Between Groups	3.623	2	1.811	1.297	.280
Within Groups	93.576	67	1.397		
Total	97.168	69			

A second one-way ANOVA was conducted to compare funding status to attempted credits. Fully funded parents had higher attempted credits (M= 11.8, SD=3.41) than partially funded (M=10.87, SD = 3.52) and unfunded parents (M=10.29, SD= 4.05)

but the main effect of funding status on attempted was not significant, $F(2,69) = 0.833$, $p = .439$. The null hypothesis was retained. These results are outlined in Table 18.

Table 18

One-Way ANOVA Results Comparing CGCC Parent Funding Status on Attempted Credits

Predictor	*SS*	*df*	*MS*	*F*	*p*
Between Groups	22.89	2	11.445	.833	.439
Within Groups	920.808	67	13.743		
Total	943.698	69			

A one-way ANOVA was conducted to compare funding status to ECR. Fully funded Greenhouse parents had higher ECR (M= .80, SD=.32) than partially funded (M=.76, SD = .37) and unfunded CGCC parents (M=.66, SD= .35) but the main effect of funding status on ECR was not significant, $F(2,69)$ = 0T table 19.

Table 19

One-Way ANOVA Results Comparing CGCC Parent Funding Status on ECR

Predictor	*SS*	*df*	*MS*	*F*	*p*
Between Groups	.228	2	.114	.892	.415
Within Groups	8.561	67	.128		
Total	8.789	69			

Finally, a Chi-Square Test of Independence was conducted to compare funding status to categorical variable persistence. No relationship was found between funding

status and the frequency of persistence, χ^2 (2, 136) = 4.432, p =.109. The null hypothesis was retained. These results are outlined in Table 20.

Table 20

Proportions of Persistence in CGCC Funding Status

	Persistence			
Funding Status	No	Yes	χ^2	p
Fully Funded	0 (0.0%)	16 (100.0%)	4.432	.109
Partially Funded	1 (3.6%)	27 (96.4%)		
Unfunded	4 (15.4%)	22 (84.6%)		

Conclusion

There were many significant differences found between the four groups of interest: non-parents, parents, parents using the on-campus childcare center, and parents using the on-campus childcare center and receiving some type of financial support. Some of the main findings include parents had significantly higher GPAs and ECRs and are less likely to persist from fall to spring than non-parents in unmatched group. In the matched group, parents had significantly lower GPAs and were less likely to persist than non-parents but there was no significant different in ECRs. In addition, parents had significantly lower attempted credits in both the matched and unmatched samples. Also, CGCC parents were more likely to persist and attempted more credits than non-CGCC parents in the unmatched groups, but there was no significant difference in GPA, attempted credits, ECR and persistence for the match group. There were no significant findings in the CGCC parent vs. non-CGCC parent matched sample. Finally, there was no significant difference between CGCC parents with full funding (n=16), partial funding

(*n*=28) or no funding (*n*=26) at all in terms of term GPA, attempted credit ECR and persistence, the small sample size is likely to blame.

CHAPTER 5: DISCUSSION

This chapter will discuss the results relating to the four groups of interest: non-parents, parents, parents using the on-campus childcare center, and parents using the on-campus childcare center and receiving some type of financial support. The findings from this study are aligned with the theoretical underpinnings. They also support previous research on student parents and build on that knowledge. Suggestions on how to improve student parent academic outcomes with on-campus childcare are discussed.

Implications of Findings

Analysis of student parent records revealed that student parents had significantly lower term GPA, lower attempted credits and were less likely to persist from fall 2018 to spring 2019 than non-student parents in the unmatched sample. Student parents also had significantly lower attempted credits and were less likely to persist from fall 2018 to spring 2019 than non-student parents in the propensity score matched sample. These findings relate to the conceptual framework of role theory. Role theory seeks to explain what motivates and influences behaviors associated with roles in different environments. Student parents find themselves balancing two very demanding and disparate roles that often come in conflict. The stress associated with this balancing act impacts their academic performance. These findings are evidence of the negative impact balancing parenting and education has on student parent's academic success outcomes.

Childcare has been suggested as way to help student parents balance the responsibilities related to parenting and their education by alleviating some of the stress associated with managing childcare and academic responsibilities. The conceptual framework of this study asserts that affordable on-campus childcare alleviates some of the stress associated with parenting through enabling student parents to spend more time

on-campus where they have access to support services. On-campus childcare also allows student parents more time to engaged with classmates and class resources. Findings associated with research question two showed evidence of this connection. Student parents who had at least one child attending the CGCC did attempt significantly more credits and were more likely to persist from fall 2018 to spring 2019 than non-CGCC parents in the unmatched sample (n=1324). Those findings were also found in the propensity score matched samples, but they were not significant. It was surprising to see that the CGCC parents showed higher ECR than non-CGCC parents in the full sample but lower ECR in the matched sample. One reason why the findings in the matched sample were not significant could be related to the indicator used to identify student parents in the non-CGCC population. The indicator was only obtained for student parents that completed a FAFSA. In addition, the FAFSA question used to identify parent status only identifies whether or not that student has a child in their home. It does not indicate how old that child is or the off-campus childcare arrangements the student parent may or may not have. The CGCC only offers childcare to children up to 5 years old. Future studies may use other indicators to identify the age of a student parent's child and their childcare arrangements could yield significant results to support the claims of the conceptual model.

The conceptual model goes on to state that financial support to help parents afford childcare will also impact student success by helping to reduce stress associated with finances. It is suggested that minimizing the concern related to working to pay for childcare, coupled with access to childcare, allows parents to better focus on their education and manage their dual roles. Findings from research question three were not significant but they do appear to support this idea. CGCC parents with full funding had

higher term GPA, attempted credits, ECR than partially funded and unfunded student parents. Among CGCC parents, those with the most funding did better on student success measures. When students are able to invest time in their education, while maintaining their responsibilities as a parent, without worrying about the financial implications of childcare, they are more likely to have successful outcomes. It appears that students who have the support of on-campus childcare may feel more able to take on the challenges of parenting while attending college and are more empowered to persist.

Relationship to Prior Research

The findings from research question one affirm the findings from previous studies indicating student parents have lower than average rates of persistence and degree completion as comparted to their traditional counterparts (Bean & Metzner, 1985; McGivney, 2004; National Center for Education Statistics [NCES], n.d.). In unmatched sample and the propensity score matched samples, student parents have lower attempted credits and are less likely to persist from fall 2018 to spring 2019 than their non-parent counterparts. This difference also observed in the score matched sample, along with a significantly lower GPA for student parents than non- parents, as was expected. It was surprising to see that student parents had a higher earned credit ration in the unmatched sample, but that difference was likely due to another variable, like age. The student parent population is older than the non-parent population, so those findings could be related to age. In the propensity score matched sample, the parents had a lower level of earned credits, but it was not significant.

All in all, the evidence supports the previous research stating student parents have poorer outcomes than their non-parent counterparts. It is believed that student parents experience poor outcomes in part because of their lack of engagement in traditional

retention and academic success activities campus (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006; Morgan, 2001). On-campus childcare is believed to help by providing a central place for identifying and accessing services that are beneficial to student parents working to satisfy their dual roles. On-campus childcare allows them to take better advantage of academic opportunities and support services. The findings from research question two showed that CGCC parents attempted significantly more credits and more likely to persist from fall to spring than non-CGCC parents in the unmatched group. These findings were consistent in the propensity score matched group but were not significant. It is likely that the smaller sample size of the unmatched group (n=136) resulted in not enough power. Even though the results were not significant in the matched groups, the data was trending in the direction of supporting the idea that support services directed towards the needs of student parents, like on-campus childcare, have an impact on student parent outcomes in line with previous research (Fadale & Winter, 1991; Baumgartner & McBride, 2009: Gonchar, 1995; Simmons & Turner, 2004; Lovell, 2014; Matus-Grossman & Gooden, 2002; Van Cleve, 1994).

Although there were no significant relationships between term GPA and ECR and childcare usage, persistence is a key indicator in long term academic success and goal attainment. It was surprising to see that these findings were not present in the matched population. Along with lack of power, it could also be that other factors, not related to parenthood, impact persistence and attempted credits. The non-CGCC parent population had no control for age of child. It could be that the non-CGCC parents had older children, which may have less of an impact on student success than caring for young children.

In addition to childcare services, targeting financial needs of student parents has been shown to have a positive impact on student parent outcomes (Cunningham, 2002;

Kahn & Poloakow, 2000). This is especially true for student in the community college setting, who tend to have lower socioeconomic status and more financial difficulties than students who attend four-year institutions. The findings from research question three, although not significant, are in line with previous research. Among the parents with at least one child in CGCC, parents with the most funding did better on GPA, attempted credit, and ECR with 100% of fully funded student parents persisting to the next semester. Adding financial support that help parents pay for their children's childcare could be a worthwhile policy decision. It is expected with a larger sample, results would be significant. Future studies could access childcare usage and funding status data from other on-campus childcare centers located on other SUNY Campuses to increase the sample size.

Limitations of the Study

There are two primary limitations in this study. The first is the parent status indicator used to identify the sample of student parents from the enrolled student population, which served as a control group for those who use on-campus care. Only 75% of NYCC students receive aid. Student parents that did not complete a FAFSA were not included in the sample. In addition, the FAFSA application question used to determine the parental status of the student, does not indicate the age of the child living in the home. There is no way to determine if the child living in the home is within the age eligibility range for on-campus childcare. Further, the childcare arrangements, if any, for student parents not using on-campus childcare were unknown. These student parents could have a variety of different childcare scenarios including relatives, off-campus daycare, a mix of the two or none whatsoever. Not knowing the childcare arrangement of students not

using on-campus childcare prevents the researcher from drawing causal conclusions on the superiority of childcare arrangements.

The second primary limitation in this study is the small sample size of CGCC parents. With an expected effect size of .2, the sample would need to be over 240 participants to reach a power level over 80%. An underpowered analysis hinders the researcher's ability to draw meaningful conclusions from the analysis. If there were more CGCC parents in the sample there would have been enough power confirm the differences in funding status impacted student term GPA, attempted credits, ECR and persistence.

Recommendations for Future Practice

It is clear that childcare impacts student parent educational outcomes. The study supports the idea that that when student parents are supported by their educational institution, both financially and in balancing their role as a parent, they perform better on traditional academic outcome measures. Recommendations for future practice would include improving access to childcare on campus. NYCC serves more student parents than any other on-campus childcare center in the SUNY system and there are still hundreds of student parents that do not take advantage of their services. With additional funding to support appropriate staffing, The Children's Garden Center could open more spots for young children and increase their offerings to school age children via after school and summer programs. This would allow parents of older children more options when considering taking classes are NYCC. The childcare would also benefit from a more cohesive marketing strategy that makes sure student parents are aware of the childcare services on campus.

Although the differences seen between CGCC parents based on funding status were not significant, they were trending in a way that implies that funding assistance to help pay for childcare impacts student success outcomes. Recommendations would include providing funding for the children of student parents to pay for childcare. Programs like the SUNY Parent Empowerment Program currently being piloted at the Children's Garden Childcare Center, are doing just that. Along with funding for childcare, the program also includes counseling services for the student parents. Research that highlights the benefits of on-campus childcare will likely result in more programs like SUNY Parent Empowerment Program that will help student parents achieve their educational goals.

Recommendations for Future Research

Future research into the impact of on-campus childcare on student success in a community college setting would benefit from a more precise indicator of parent status. There is limited information gathered in the admissions process regarding a student's parental status. The FAFSA indicator used in this study is a good start but it has drawbacks. First the indicator is only present for students that completed a FAFSA. Even though a large percentage of NYCC students complete a FAFSA, over 6,000 records were excluded from this analysis because they did not have an indicator. Second, the indicator does not contain any information about the age of the student parent's child. Parents of school age children have more childcare options available than parents of toddlers and infants, served by the CGCC. Collecting parental status information at the application level would be beneficial in that the college would be able to better identify student parents for research purpose and to help guide them towards specialized services, like childcare.

Considering the limited population of student parents with children attending on-campus childcare, future research including data from other community college's with on-campus childcare would be a good way to increase the power in the analysis. There are several community colleges in the area that also have childcare centers also supported by the New York State Block Grant. Data from student parents in these centers would be a great way see if the increase in sample size would provide enough power to make conclusions about funding status and academic success.

Childcare takes many forms. Another area of research could compare other community college childcare options with on-campus versions to investigate if the differences in the impact on student success. For example, some community colleges that have multiple small campuses offer students childcare vouchers to use at participating centers. Since there is no central campus, this model allows students to select childcare services in a location closest to them. This decentralized model may provide necessary childcare services but does it also increase the student parent's ability to spend time on campus and take better advantage of the services available to them? More research in this area would be beneficial for higher education administrators interested in providing meaningful childcare services for their student parent populations.

Conclusion

Student parents have been historically underserved in higher education. This study provides insight into how on-campus childcare and financial assistance can help support his population. There is value to having on-campus childcare centers on community college campuses. Student parents with access to these centers attempt more credits and show higher rates of persistence. Increasing capacity and the ages of children in these centers will provide more opportunity for student parents to succeed in higher

education. Furthermore, this study offers insight in how financial assistance is provided for student parents. The results show that financial assistance could play a larger role in student parent academic outcomes. More funding opportunities targeting support to student parents' usage of on-campus childcare centers could have an impact on their success. The investments made in student parents will uplift not only the parent but will have a multi-generational impact on the family and to community where they live.

APPENDIX A ST. JOHN'S IRB APPROVAL

Date: 4-25-2022

IRB #: IRB-FY2022-352
Title: IMPACT OF ON-CAMPUS CHILDCARE ON STUDENT PARENT SUCCESS IN A COMMUNITY COLLEGE SETTING
Creation Date: 4-13-2022
End Date:
Status: Submitted
Principal Investigator: Jessica Dillon
Review Board:
Sponsor:

Study History

Submission Type	Review Type	Decision
Initial	Unassigned	

Key Study Contacts

Member Erin Fahle	Role Co-Principal Investigator	Contact fahlee@stjohns.edu
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APPENDIX B NCC IRB APPROVAL

Dillon, Jessica

Subject: IRB Committee Review Update

From: Lausch, Mark C.
Sent: Monday, April 18, 2022 3:42 PM
To: Dillon, Jessica <Jessica.Dillon@ncc.edu>
Subject: RE: IRB Committee Review Update

Hi Jessica,

The NCC IRB Committee has approved your request. Congratulations!

The group asked that I ask you to share St. John's IRB response to us at the appropriate time.

The group also asked that I wish you great success in your research and doctoral studies!!!

Mark

NASSAU COMMUNITY COLLEGE

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