This is a pre-copyedited, author produced PDF of an article accepted for publication in the *Journal of School Psychology* following peer review. This version [citation below] is available at https://doi.org/10.1037/fam0001050

Resnick, F., Garbacz, S. A., Stormshak, E. A. & McIntyre, L. L. (2023). Family-centered prevention to enhance proactive parenting and parental self-efficacy during early elementary school. *Journal of Family Psychology,* 37 (3), 380-387. https://doi.org/10.1037/fam0001050

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This research was supported by the Institute of Education Sciences, U.S. Department of Education through Grant R305A140189 to the University of Oregon. The opinions expressed are those of the authors and do not represent the views of the Institute or the U.S. Department of Education.

Abstract

The purpose of this study was to examine the effect of a family-centered intervention delivered during early elementary school, the Family Check-Up (FCU), in supporting parents' use of proactive parenting skills and the role that parental self-efficacy has in promoting proactive parenting. We predicted both direct and mediated effects of the FCU on changes in proactive parenting. Participants were the primary caregivers of 321 kindergarten children and randomly assigned to either the FCU or to a school-as-usual control group (n = 164 assigned to intervention). Results indicated that the FCU initiated during kindergarten enhanced proactive parenting skills directly and was mediated by parental self-efficacy. These results highlight the FCU as an efficacious intervention in early elementary school in promoting proactive parenting skills and parental self-efficacy and underscore the role of parental self-efficacy as a primary pathway towards improved proactive parenting.

Keywords: parenting skills; proactive parenting; parenting self-efficacy; kindergarten

Family-Centered Prevention to Enhance Proactive Parenting and Parental Self-Efficacy during Early Elementary School

Preventative interventions that aim to improve positive and proactive parenting practices are a well-established method to reduce problem behaviors, ameliorate difficulties, and enhance well-being across youths' development (Stormshak et al., 2017). Interventions to support effective parenting are particularly needed during key transitions, such as school entry and early elementary school (Rimm-Kaufman & Pianta, 2000), when child needs can increase (McIntyre et al., 2007). Brief-targeted interventions can be effective when delivered during early elementary school. Such interventions can support parents in building their self-efficacy and implementing proactive parenting strategies designed to promote children's adjustment and reduce problems.

The Family Check-Up (FCU) is a targeted, evidence-based, family-centered intervention that utilizes tailored feedback, and adaptable support options for parents (Dishion & Stormshak, 2007). The FCU uses Motivational Interviewing (MI) as a method of communication to engage parents in the change process that is tailored to fit the strengths and goals of the family (Dishion & Stormshak, 2007). Goals targeted during the FCU can include parenting support, academic and behavior support, and home-school communication (Stormshak et al., 2010).

Previous studies during middle school have shown that engaging families in the FCU improved parenting practices and reduced problem behaviors across early childhood and adolescence (Dishion et al., 2008; Stormshak et al., 2010). Recently, the FCU was adapted for kindergarten and early elementary school (Stormshak, McIntyre, et al., 2020). The FCU was modified for this developmental period to focus on supporting parents in enhancing their skills as well as promoting proactive academic and behavior support during a time that is often challenging for children and their parents (Stormshak, McIntyre, et al., 2020). Prior research on

the FCU during early elementary school showed improved effective parenting skills using a latent parenting constructing that included limit setting, negative parenting, parent efficacy, and parent warmth during second grade (Stormshak, DeGarmo, et al., 2020). One aim of the FCU in early elementary school is to improve parental self-efficacy and proactive parenting skills as a preventative approach to reduce problem behavior and enhance child adjustment. However, previous FCU research has not examined the FCU as a school-based intervention in supporting parents' use of proactive parenting skills, nor the role that parental self-efficacy has in promoting proactive parenting.

Proactive parenting behaviors are techniques to create supportive environments in anticipation of problem behaviors and challenging situations, such as warning children before a change in activity is required and breaking tasks into small steps (Dishion & Stormshak, 2007; McEachern et al., 2012). An early focus on proactive parenting can prevent behavioral difficulties, which often occur during early elementary school and can set a trajectory that continues over time (Dishion et al., 2008; Garbacz et al., 2018). One study by Gardner et al. (2007) found that increases in proactive parenting skills in families with toddlers predicted decreases in child destructive behavior at age three. Additionally, proactive parenting is predictive of improved effortful control (Chang et al., 2015) during early childhood, and use of critical parenting techniques (e.g., parental monitoring) into adolescence (Dishion & Stormshak, 2007; Pettit et al., 2007). Research is needed that examines the role of preventative interventions, such as the FCU, on caregivers' perception of their proactive parenting skills during the critical transition to early elementary school.

Parental self-efficacy (PSE) is an individual's judgment of their ability as a parent (Bloomfield & Kendall, 2012). A parent's perception of their PSE can be impacted by contextual

changes, such as the transition to kindergarten, as well as individual changes, such as feelings about the transition or identity as the parent of a child in school (Bloomfield & Kendall, 2012). When parents feel empowered about their knowledge and skills they are more likely to use effective parenting practices (Jones & Prinz, 2005). The FCU aims to build PSE by supporting parents in identifying their goals and providing caregivers with supportive feedback to facilitate them in reaching their goals (Stormshak, DeGarmo, et al., 2020). Previous research on the FCU has examined parental self-efficacy as part of a cluster of effective parenting skills that mediate child behavior problems during elementary school (Stormshak, DeGarmo, et al., 2020). However, research on the FCU is needed that examines whether bolstering PSE impacts proactive parenting skills during the transition to elementary school.

The Present Study

The purpose of this study is to examine the effect of the FCU on use of caregivers proactive parenting behaviors in third grade. We predict both direct and mediated effects of the FCU on changes in proactive parenting. We hypothesize that the FCU, will be directly associated with increased parent-report of proactive parenting behaviors in third grade. We further hypothesize that caregivers' reports of their parental self-efficacy at second grade will mediate the effect of the FCU on proactive parenting behaviors in third grade, such that caregivers who report higher parental self-efficacy at second grade will report using greater proactive parenting behaviors in third grade.

Method

Participants and Setting

Families across five elementary schools were invited to participate when they registered for kindergarten. Schools were located in the Northwest region of the United States. Four out of

the five schools were Title I schools. See Table 1 for additional information about the schools. Primary caregivers of 321 children (46.1% female children; 53.9% male children) in early elementary school consented and enrolled in the study (see Figure 1). 49.5% of families approached agreed to participate. Primary caregivers self-identified as White (72.9%), Black (1.9%), Hispanic (13.7%), Asian (2.8%), Native American (.3%), Multi-ethnic (7.8%), and unknown (.6%). More than 60% of the primary caregivers reported they attended or completed secondary education. See Table 2 for additional participant demographic data.

Measures

Primary caregivers (89% mothers) completed survey questionnaires every year at four time points: kindergarten, first grade, second grade, and third grade. Measures were included on questionnaires to assess proactive parenting behaviors and parenting self-efficacy. Caregivers self-reported proactive parenting behaviors (e.g., plan ways to prevent problem behavior, break tasks into small steps) on the proactive parenting subscale from the Parenting Young Children measure (McEachern et al., 2012). The subscale is a seven-item measure rated on a five-point scale ranging from 0 = *never* to 4 = *very often*. With the present data, internal reliability was α = .76. A mean is computed as the average of all items, with higher means suggesting caregivers engaged in greater proactive parenting behaviors.

Caregivers self-reported PSE was measured using the Parenting Task Checklist (Sanders & Woolley, 2005). The Parenting Task Checklist is a six-item measure to assess parenting self-efficacy. Caregivers responded to different situations (e.g., your child refuses to do what he/she has been told) by rating on a five-point scale their confidence in successfully dealing with their child's behavior 0 = *not confident at all* to 4 = *very confident*. With the present data, internal

reliability was α = .93. A mean is computed as the average of all items with high means indicating greater parenting self-efficacy.

Family Check-Up Intervention Protocol

The FCU intervention protocol included two components. First, there was a FCU training for therapists. Second, after training therapists implemented FCU procedures with families. The FCU protocol was based on Stormshak et al. (2021).

Family Check-Up Training

Doctoral-level psychologists and master's level clinicians served as FCU therapists. These individuals had prior experience being trained in the FCU and working on prior projects that used the FCU. These therapists were trained to criterion in the FCU using the FCU fidelity measure, the COACH (Smith et al., 2013), and received ongoing supervision. The criterion-based training included three stages. First, therapists participated in an all-day workshop. This workshop included instruction on the FCU protocol, MI, and academic and behavioral supports (Stormshak et al., 2010). The training was led by a doctoral-level clinician who was a certified FCU therapist as well as a FCU trainer. This clinician had more than 25 years of experience with family-based and family-school interventions for children.

Following the workshop, therapists completed observations and implemented the FCU under supervision with feedback. Therapists observed three live FCUs, which included the initial interview, ecological assessment, and feedback session. Following these observations, therapists were required to meet criterion on two FCUs. The doctoral-level trainer observed therapist FCUs and rated them across the five dimensions of the COACH (e.g., session structure, motivational strategies). Criterion for each FCU was set at "satisfactory implementation" or a minimum score of a 5 out of 9. After therapists completed the criterion based FCU training, their fidelity was

monitored using the COACH, with all therapists required to maintain satisfactory implementation. While FCU therapists were implementing the FCU with participants, they engaged in weekly supervision by licensed psychologists who had experience implementing the FCU.

Family Check-Up Procedures

The FCU was offered to all families who were randomized to the FCU condition. Families at each school had access to parenting materials and resources. Families in the FCU condition who agreed to participate in the FCU were offered the FCU in three stages: initial interview and ecological assessment, feedback session, and follow-up sessions. During the initial interview, FCU therapists focused on creating a collaborative and strengths-based environment to support a positive working relationship that focuses on families and their goals. FCU therapists also gathered information about family strengths, areas of concern and goals. During the ecological assessment, families completed measures that addressed their family context, parenting practices, home-school connections, and child academic performance and behavior. In addition, during the ecological assessment videorecorded observations were conducted of parents and children engaging in structured tasks. The purpose of these recordings was to better understand the parent-child relationship, parenting skills, and child behavior.

Following the initial interview and ecological assessment, a feedback session was held. During the feedback session, data collected during the ecological assessment were reviewed with the family to establish a shared understanding of family strengths and areas of need. Using those data, the family and FCU therapist collaboratively set goals (e.g., improving positive parenting, improving social-emotional skills). After goal setting, the FCU therapist provided a tailored menu of interventions options based on family strengths and goals, as well as child

developmental level. Options often discussed during the feedback session included early learning, parenting skills, contextual stressors, and home-school planning. FCU therapists used motivational interviewing to support parents in creating goals and engaging in intervention options in a manner that is aligned with their goals (Dishion et al., 2011). If families chose to engage in follow-up sessions, those sessions were collaborative, brief, and focused on individualized family supports based on their goals. The top five topics covered during follow-up sessions were (a) child behavior, (b) child academic skills, (c) positive parenting, (d) child emotional health, and (e) peer relations (Garbacz et al., 2020). Throughout follow-up sessions, FCU therapists and families worked together to assess progress toward family goals through clinical data, such as the completion of additional measures, videorecorded observations, and time series data based on specific behaviors of focus, such as use of specific praise.

Approximately 76% of families completed an initial interview and ecological assessment. 75% of families completed a feedback session, and 50% of families completed one or more follow-up sessions after the feedback session.

Analyses

Intent-to-treat analyses (ITT) were used to evaluate intervention effects by comparing participants in the intervention group with those in the control group (Hayes & Rockwood 2017). ITT was coded 1 for FCU (65%) and 0 for controls (35%). Data analyses were performed using the car and mediation packages in R (Fox & Weisberg, 2019; Tingley et al., 2014). The Full Information Maximum Likelihood (FIML) procedure with robust standard errors, implemented as MLR, was used for imputing missing data. MLR uses maximum likelihood estimation with robust standard errors, which uses all available data and produces potentially unbiased results even with missing data (Schafer & Graham, 2002). Data analysis consisted of four steps. First,

descriptive statistics and bivariate correlations of study variables were examined as well as differential attrition rates. Second, an ANCOVA model tested the direct effect of the FCU on proactive parenting. Third, path analysis examined the direct effect of the FCU on proactive parenting at Time 4 using an ITT approach. Fourth, the mediating role of primary caregiver's perceived self-efficacy at Time 3 in the relationship between participating in the FCU intervention and proactive parenting in Time 4 was examined. The joint significance test was used to test mediation in order to balance Type I error and statistical power (Fritz & MacKinnon, 2007; MacKinnon et al., 2002). To assess mediation, the joint significance test requires both relevant path coefficients in the model to be significant (Patel et al., 2017). In this case, both the path between participating in the FCU intervention and parenting self-efficacy (Time 3) and the path between parenting self-efficacy (Time 3) and proactive parenting at Time 4 need to be significant to indicate a mediation effect. We ignored higher levels of nesting (e.g., classroom, school) because randomization and intervention delivery occurred at the family-level and there was no school component (Garbacz et al., 2020). Higher levels of nesting have no effect on the average effect estimator or its standard error for this study design (Raudenbush & Sadoff, 2008), and consequently no effect on the Type I or Type II error rates.

Results

Descriptive statistics and correlations for each study variable used in analyses are reported in Table 3. Treatment and control conditions did not significantly differ at Time 1 for proactive parenting, parenting self-efficacy, or among demographic variables. Examination of attrition revealed a low differential attrition rate (2.7%) between the intervention (25%) and control condition (22.3%), P=.57. Additionally, regression analyses conducted to detect differential rates by sociodemographic variables and schools revealed no significant differences

with respect to child's gender, child's race/ethnicity, primary caregiver's race/ethnicity, school, or intervention status (Ps> .05).

Our first goal was to test the direct effect of the FCU intervention on proactive parenting in third grade (Time 4). We first tested whether participants in the FCU condition experienced greater gains in proactive parenting than did participants in the control condition. Results of the pre–post autoregressive ANCOVA model indicated that there was a significant effect of FCU participation on reported use of proactive parenting behaviors during third grade compared to the control condition, ($F(1,245) = 9.451$, $p < .01$), and a small effect size ($d = .41$, $r^2 = .25$).

Path analysis began with an examination of a direct effect of the FCU on proactive parenting at Time 4 using an ITT approach. Results of the model are presented in Figure 2. The model demonstrated good fit [χ^2 (2) = 71.35, p <.001; RMSEA = 0.00; CFI = 1]. The direct effect of the intervention, controlling for proactive parenting at baseline, was significant (β= .20, $p < .01$). Next, we tested whether parent perceived self-efficacy at second grade (Time 3) mediated the FCUs effect on proactive parenting (presented in Figure 3). The model shows the direct effect of the FCU on proactive parenting at Time 4 with self-efficacy at Time 3 as a mediator on the effect of the FCU on proactive parenting, controlling for proactive parenting and parenting self-efficacy at Time 1. The results of the path analysis model are reported in Table 3. The model demonstrated good fit [χ^2 (7) = 105.55, p <.001; RMSEA = 0.023; CFI = .99]. The model shows that the FCU intervention was positively and directly associated with proactive parenting skills at wave 4 (β =.18, p<.01) and the FCU intervention was also associated with higher parenting self-efficacy at wave 3 (β =.23, p<.05). Parenting self-efficacy at Time 3 was positively and significantly associated with proactive parenting skills at Time 4 (β =.11, p<.01). Given the significance of both the path between participating in the FCU intervention and

parenting self-efficacy (Time 3) and the path between parenting self-efficacy (Time 3) and proactive parenting in Time 4, the joint significance approach indicates there is evidence for mediation.

Discussion

Early elementary school is a pivotal timepoint to provide preventative parenting interventions since child needs often increase during this developmental transition (Rimm-Kaufman & Pianta, 2000). Preventative interventions that aim to improve parenting practices, such as the FCU, are associated with many positive effects for caregivers and their child (Chang et al., 2015; Dishion & Stormshak, 2007). This study examined the effect of the FCU on proactive parenting, as well as the role of PSE as a mediator on the effect of the FCU on proactive parenting.

Main findings of this study suggest that the FCU initiated during kindergarten enhances proactive parenting skills directly and is mediated by parental self-efficacy. As hypothesized, the FCU was directly associated with increased caregiver-report of proactive parenting behaviors at third grade. Also, in line with expectations, caregivers' reports of their PSE at second grade mediated the effect of the FCU on proactive parenting behaviors in third grade, such that caregivers who reported higher parental self-efficacy when their child was in second grade reported using greater proactive parenting behaviors when their child was in third grade.

These results highlight the FCU as an efficacious intervention in early elementary school in promoting PSE and proactive parenting and underscore the role of PSE as a primary pathway towards improved proactive parenting. When caregivers feel they have the knowledge, skills, and support, they are more likely to utilize proactive parenting skills. There is a need for brief and accessible interventions, such as the FCU, during early elementary school that can target

specific parenting skills and lead to behavior change. The early elementary school time period may be a pivotal opportunity to influence caregivers' PSE (Rimm-Kaufman & Pianta, 2000), which as shown in the present study can have downstream impacts of effective parenting behaviors.

Study Limitations and Future Research Directions

The present study provided important information about effects of the FCU during early elementary school on PSE and proactive parenting. However, several limitations should be considered when interpreting findings. One limitation of the study is the use of self-report measures for proactive parenting and PSE. Although each measure had adequate internal consistency reliability, it can be challenging for caregivers to objectively report about their parenting skills. Future research using both self-report measures and observational methods may help clarify implications on changes in parenting behavior. Additionally, this study focused only on primary caregivers. Including additional caregivers in future research may increase understanding of the FCU on their PSE and use of proactive parenting strategies designed to promote children's adjustment and reduce problems. Furthermore, this study focused on parental self-efficacy and proactive parenting skills. Yet, future research should include child outcome measures since bolstering parenting skills is a preventative approach to reduce problem behavior and enhance child adjustment. Another limitation concerns the study sample and setting. Participants in this study were from one school district in the Northwest Region of the United States with similar demographics. Future research is needed to examine similar variables with the FCU in other school districts and regions with different demographics as the setting and demographics may impact generalizability. Finally, future research should include additional strategies to promote parental self-efficacy beyond the strategies already included in the FCU

intervention since the role of parental self-efficacy is a key mechanism on promoting proactive parenting.

Implications

Several implications emanate from the study findings. The present study underscores the importance of the early elementary school years as pivotal for intervening with families to provide positive and family-centered support (McIntyre et al., 2007). Schools are an effective setting to reach and engage families, yet family-centered support is rarely a focus of school clinicians (Stormshak et al., 2010). It would be useful for schools to consider broadening the role of school clinicians, such as school counselors, school social workers, and school psychologists so that they have as part of their job description a key responsibility on working directly with families to develop PSE and positive parenting through the FCU. Such a process could be established within a family-centered schoolwide framework (Stormshak et al., 2010). As findings from this study suggest, such investments in resources at the kindergarten transition can have positive implications for later elementary school years, providing further support for the FCU as a prudent investment in school resources.

The role of PSE in the present study suggests PSE is an important proximal target for family-centered support in the FCU, and a key mechanism in promoting proactive parenting. These findings suggest that clinicians who focus purely on the mechanistic aspects of parenting may be missing an important dimension to promoting proactive parenting for parents of children in early elementary school. Rather, clinicians should also focus their efforts on building PSE. Within the FCU this is accomplished through several key processes. For example, focusing on strengths helps empower parents and establish a sense of confidence and ownership over their behavior. Similarly, the infusion of MI in the FCU places the focus on parents' goals and

emphasizes their goals. In addition, family-centered supports, such as positive regard and validation, can further strengthen parents' sense of self in their role as a parent. These features of the FCU combined with a focus on supporting the developing of parenting skills may be a key combination of strategies to support parents during the early elementary school years.

The present study began to establish the important role of PSE in promoting proactive parenting within the FCU, yet additional research is needed. In particular, to maximize implications for practice, research should examine specific aspects of the FCU process and clinician–parent interactions that might promote PSE. Research on clinician–parent interactions during FCU meetings might focus on coding elements of the relational process to better understand key drivers of improvements of PSE. Similarly, research could systematically manipulate features of MI within the FCU to determine which elements or which combination of elements are most promotive of PSE and positive parenting. Such research might allow for further tailoring of the FCU and could provide additional guidance for clinicians about where to focus their efforts and how to most effectively interact with parents at certain stages of the FCU.

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Table 1

Characteristics of Schools

School	Total Students (Grades KG-5)	Demographics (Race/Ethnicity)							Eligibility for free or reduced-price lunch
		American Indian/ Alaska Native	**Asian**	**Black**	**Hispanic**	**Native Hawaiian/ Pacific Islander**	**White**	**Two or More Races**	
1	435	0%	4%	3%	21%	0%	63%	9%	52%
2	353	1%	2%	2%	27%	<1%	59%	9%	66%
3	304	0%	2%	5%	21%	7%	58%	7%	66%
4	546	<1%	13%	3%	15%	1%	58%	10%	35%
5	416	1%	3%	3%	43%	<1%	43%	6%	>95%

Table 2

Demographic Characteristics of Participants

	% Total (N = 321)	% FCU (n = 164)	% Control (n = 157)
Primary caregiver race/ethnicity			
White	72.9	72.6	73.2
Black	1.9	1.8	1.9
Hispanic	13.7	13.4	14.0
Asian	2.8	2.4	3.2
Native American	.3	0	.6
Multi-ethnic	7.8	8.5	7.0
Other	.6	1.2	0
Primary caregiver highest education			
No formal schooling	.6	.6	.6
7th grade or less	3.1	3.0	3.2
Junior high completed	3.4	3.0	3.8
Partial high school (at least one year)	6.2	3.7	8.9
High school graduate (or GED)	25.2	24.4	26.1
Partial college (at least one year) or specialized training	24.6	26.8	22.3
Junior college/Associate's degree (2 years)	10.6	12.8	8.3
Standard college or university graduation (4 years)	17.4	20.1	14.6
Graduate professional training, graduate degree	8.7	5.5	12.1
Child gender			
Female	46.1	46.3	45.9
Male	53.9	53.7	54.1
Child race/ethnicity			
White	58.9	59.8	58.0
Black	1.9	2.4	1.3
Hispanic	13.4	13.4	13.4
Asian	2.2	1.8	2.5
Native American	.3	0	.6
Multi-ethnic	22.1	20.7	23.6
Other	1.2	1.8	.6

Table 3

Means, Standard Deviations, and Correlations Among Variables Used in Analyses

Variable	FCU treatment condition	Proactive Parenting (Time 1)	Proactive Parenting (Time 4)	Parenting Self-efficacy (Time 1)	Parenting Self-efficacy (Time 3)
FCU treatment condition	—				
Proactive Parenting (Time 1)	.04	—			
Proactive Parenting (Time 4)	.20**	.47***	—		
Parenting Self-efficacy (Time 1)	.05	.23***	.19**	—	
Parenting Self-efficacy (Time 3)	.14*	.14*	.21**	.27***	—
M		2.876	2.884	4.34	3.85
SD		.59	.60	.75	.87

* p<.05 ** p<.01 *** p<.001.

Table 4

Standardized path estimates for the hypothesized model

Direct Paths	*β*	S.E.
FCU → Proactive Parenting (Time 4)	.18**	.07
Parenting Self-efficacy (Time 3) → Proactive Parenting (Time 4)	.11**	.04
Proactive Parenting (Time 1) → Proactive Parenting (Time 4)	.45***	.06
FCU → Parenting Self-efficacy (Time 3)	.23*	.10
Parenting Self-efficacy (Time 1) → Parenting Self-efficacy (Time 3)	.31***	.01

* p<.05 ** p<.01 *** p<.001.

Figure 1

Participant Enrollment

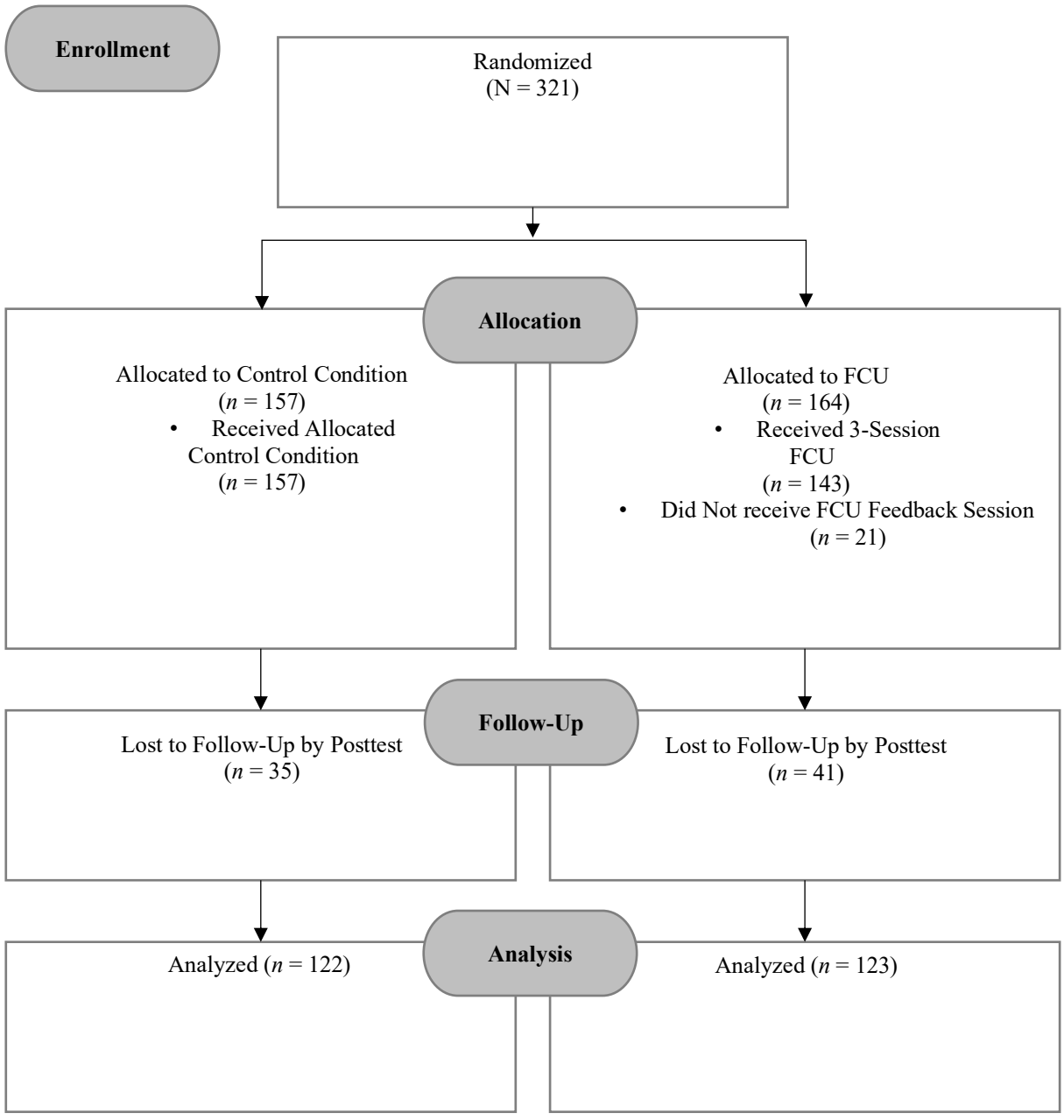
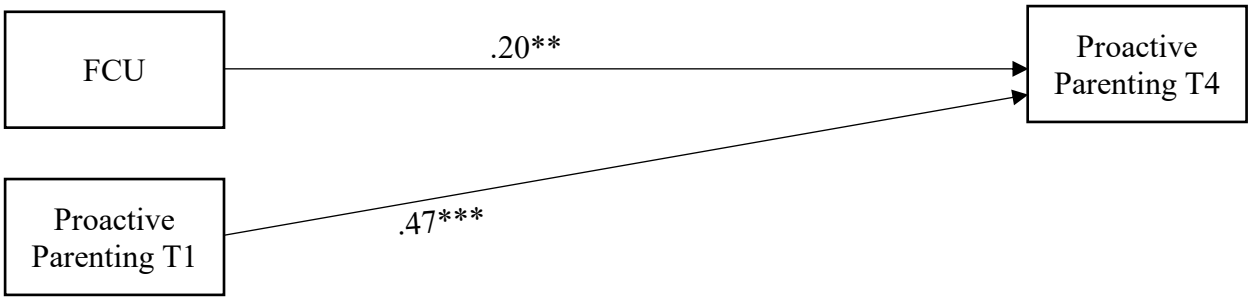


Figure 2

Path Analysis Examining the Direct Effect of the FCU on Proactive Parenting

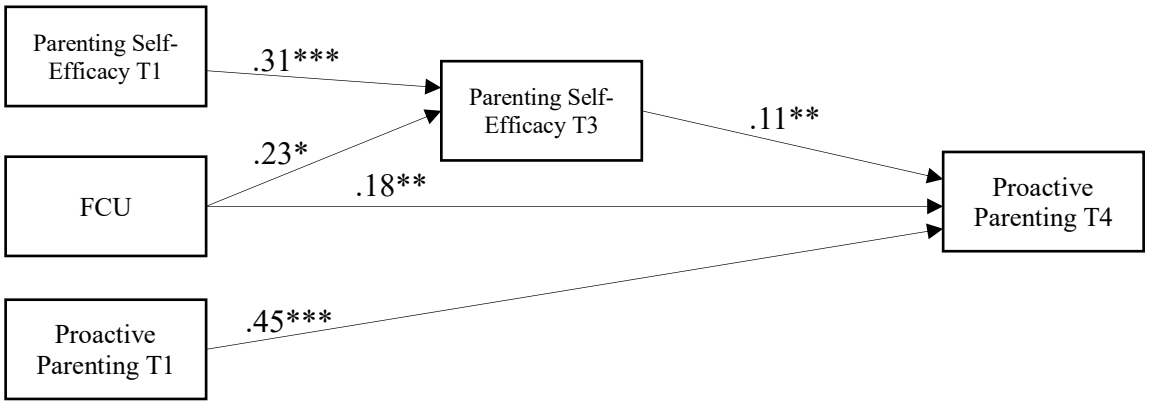


Note. Path analysis with the direct effect of the FCU on proactive parenting at Time 4, controlling for proactive parenting at Time 1. Coefficients presented are standardized linear regression coefficients.

* p<.05 ** p<.01 *** p<.001.

Figure 3

Path Analysis Examining Self-Efficacy as a Mediator the FCU on Proactive Parenting



Note. The path analysis shows the direct effect of the FCU on proactive parenting (Time 4) with self-efficacy (Time 3) as a mediator on the effect of the FCU on proactive parenting, controlling for proactive parenting and parenting self-efficacy at Time 1. Coefficients presented are standardized linear regression coefficients.

* p<.05 ** p<.01 *** p<.001.