

**Evaluating the Impact of the Little Lions Club Program on Psychosocial Health and
Prosocial Behavior in Early Childhood: A Mixed-Methods Longitudinal Study**

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PSYC 498: External Internship

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July 3, 2025

Abstract

This study investigates the psychosocial and prosocial benefits of the Little Lions Club (LLC), a structured sports program for children aged 2–5. Using a between-subject longitudinal design, the study examines changes in emotional regulation, peer relationships, and prosocial behaviors using the Strengths and Difficulties Questionnaire (SDQ). Participants were divided into newly enrolled, long-term enrolled, and control groups. Anticipated outcomes include improved psychosocial functioning and increased cooperation and empathy among LLC participants. Preliminary findings suggest that participation in LLC may support emotional well-being and peer relationships, providing a foundation for integrating SEL into early athletic programs.

Introduction

Early childhood represents a critical developmental window for building emotional regulation, prosocial behavior, and healthy peer relationships (Denham et al., 2012). While research has consistently shown that structured group environments can foster these competencies (Logue & Harvey, 2009), many early childhood athletic programs remain focused primarily on physical outcomes, often overlooking the equally important social-emotional dimensions of early development.

The Little Lions Club (LLC) was designed to address this gap by incorporating social-emotional learning (SEL) strategies into a structured, play-based movement program. Through guided physical activity, group-based games, and consistent reinforcement of positive social behaviors, LLC promotes inclusion, emotional expression, and peer cooperation. Although informal feedback from parents and instructors points to positive outcomes, few empirical studies have systematically evaluated the psychosocial effects of such programs.

This study aims to examine whether participation in LLC results in measurable improvements in children's emotional functioning and social behavior. Using pre- and post-intervention SDQ scores, and comparing results across newly enrolled, long-term, and non-participating control groups, the study evaluates both immediate and sustained impacts of program involvement.

Research Objectives

This study examines whether participation in the Little Lions Club (LLC) – a structured sports program for children aged 2 to 5 – enhances emotional regulation, peer relationships, and prosocial behaviors such as empathy and cooperation. By assessing both short-term (newly enrolled) and long-term participants, and comparing them to a non-

participating control group, the study evaluates both immediate and sustained psychosocial benefits.

In addition to measuring developmental outcomes using the Strengths and Difficulties Questionnaire (SDQ), the study aims to provide empirical support for integrating social-emotional learning (SEL) into early athletic programs – an area often overlooked in favor of physical development.

Specific Objectives

1. Assess the impact of LLC on emotional regulation, peer relationships, and prosocial behavior.
2. Compare short-term and long-term effects of participation.
3. Evaluate outcomes by duration of program involvement.
4. Contrast LLC participants with a non-participating control group.
5. Support the integration of SEL into early physical activity initiatives.

Hypotheses

Participation in the Little Lions Club program is hypothesized to result in measurable improvements in psychosocial functioning among young children, compared to those who do not participate. The structured, socially enriched environment of the LLC program is designed to foster growth in areas such as emotional regulation, peer relationships, and prosocial behaviors including cooperation, empathy, and conflict resolution. These outcomes are expected to be particularly pronounced among children who have participated in the program for a longer duration.

More specifically, children in both the newly enrolled and long-term LLC groups are expected to exhibit increased prosocial behaviors and decreased emotional and behavioral difficulties over the study period. Long-term participants are anticipated to demonstrate the most substantial gains, due to prolonged exposure to the program's social-emotional learning

components. In contrast, minimal or no change is expected among the non-participating control group.

The study also hypothesize that these changes will be reflected in parental perceptions, as captured through more favorable post-test scores on the Strengths and Difficulties Questionnaire (SDQ). Parents of LLC participants are expected to report noticeable improvements in their children's emotional well-being, social adjustment, and behavior.

This study is guided by the following hypotheses:

- H1: Children participating in the LLC program will exhibit greater improvements in SDQ scores compared to the control group, with both newly enrolled and long-term participants showing significant changes.
- H2: LLC participants will demonstrate increased prosocial behaviors such as cooperation, empathy, and conflict resolution.
- H3: Parents of LLC participants will report noticeable improvements in their children's emotional well-being and social functioning following program involvement.

Note. H = Hypothesis.

Methodology

This study employed a between-subjects longitudinal design to assess changes in psychosocial functioning among children aged 2 to 5 over a four-week period. The study compared outcomes across three distinct groups: newly enrolled participants in the Little Lions Club (children who had joined within the two months prior to the study's start), long-term participants (those enrolled in LLC for more than two months), and a control group composed of age- and school-matched children who did not participate in the LLC program.

This design allowed for comparison of short-term and sustained program effects on social and emotional development.

To measure psychosocial functioning, the study utilized the Strengths and Difficulties Questionnaire (SDQ), a widely validated behavioral screening tool for children aged 2–17. The SDQ assesses five domains: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior. It generates a total difficulties score, as well as a prosocial behavior subscale, making it highly suitable for evaluating changes in both problematic and positive child behaviors (Goodman, 1997). The SDQ is brief (25 items), parent-reported, and has been validated for use across diverse populations and settings.

Design

The research utilized a between-subjects design that tracked pre- and post-intervention changes in psychosocial health over a six-week window, with program activities occurring during weeks 2 through 5. Pre- and post-assessments were administered to both intervention and control groups, allowing for evaluation of differences across conditions. The primary comparison focused on whether LLC participants experienced greater psychosocial improvements than their non-participating peers.

Participants

Children were recruited from local childcare centers in partnership with the Little Lions Club. Eligible participants were aged 2 to 5 and assigned to one of three groups: newly enrolled LLC participants (joined within two months of study start), long-term LLC participants (enrolled for at least two months prior to the study), and non-participating controls attending the same centers but not enrolled in LLC. The target sample size was 60 children, with approximately 20 in each group, to ensure balanced comparisons.

Data Collection Instruments

The study used the Strengths and Difficulties Questionnaire (SDQ), a validated measure of child psychosocial functioning. Parents completed the SDQ at two timepoints: once during Week 1 (baseline) and again in Week 6 (post-intervention). To streamline administration and ensure secure handling of participant data, surveys were distributed electronically using SDQplus, a web-based platform. Each child received a unique identifier to maintain confidentiality and enable accurate tracking of longitudinal responses.

Table 1

Program Phases and Timeline

Phase	Week 1	Week 2-5	Week 6
Pre-Assessment	Pre-test SDQ distributed to parents		
Intervention		LLC program participation	
Post-Assessment			Post-test SDQ distributed to parents

Note. LLC = Little Lions Club; SDQ = Strengths and Difficulties Questionnaire.

Incentives

To promote survey completion and family engagement, the study incorporated raffle-based incentives. Parents who completed the initial (pre-test) survey were entered into a drawing for one of two \$25 Amazon gift cards. Those who completed both the pre- and post-surveys were entered into a second drawing for one of two \$50 Amazon gift cards. This strategy helped boost participation rates and sustained involvement across the study duration.

Raffle-based Amazon gift card rewards:

- 2x\$25 (pre-test raffle)
- 2x \$50 (post-test raffle)

Data Analysis

Data analysis for this study involved both descriptive and inferential statistical procedures, conducted using standard social science practices. Descriptive statistics,

including group means, standard deviations, and distributions, were computed to summarize baseline characteristics of participants and assess group comparability. These measures were essential for evaluating assumptions of statistical normality and identifying any pre-intervention group differences. Baseline equivalency between intervention and control groups was assessed using independent samples t-tests (Field, 2013).

To evaluate the effectiveness of the Little Lions Club program, paired t-tests were conducted to compare pre-test and post-test SDQ scores within each group. This method is appropriate for detecting within-subject changes over time (Cramer & Howitt, 2004). Independent samples t-tests were used to compare post-test scores between intervention and control groups, assessing whether participation in LLC led to statistically significant improvements compared to non-participating peers. An additional layer of analysis compared changes between newly enrolled and long-term participants, aiming to determine whether program duration moderated outcomes.

Power analysis was conducted prior to data collection to determine the sample size necessary to detect a moderate effect size (Cohen's $d \approx 0.3-0.5$) with a statistical power of 0.80 and an alpha level of 0.05 (Cohen, 1988). Based on these parameters, a total sample size of 90 (30 children per group) was deemed sufficient. However, due to practical constraints, the final sample size was smaller. This limitation is acknowledged in the interpretation of results, and findings are considered exploratory.

SDQplus Integration

Data collection and management were conducted using SDQplus, a secure and GDPR-compliant platform designed for longitudinal mental health monitoring. Each participant was assigned a unique identifier to protect confidentiality while enabling longitudinal tracking. The SDQplus platform allows parents to complete surveys on computers, tablets, or smartphones, increasing accessibility and convenience.

The platform streamlined the aggregation of responses into exportable datasets for analysis. These spreadsheets were used for direct comparison of pre- and post-assessments and facilitated cohort-based subgroup analysis. By maintaining consistent data entry points and digital records, SDQplus reduced the risk of data loss or input error – challenges common in pen-and-paper surveys (Goodman, Ford, Simmons, Gatward, & Meltzer, 2003).

Cohort analysis further examined differential impacts based on the duration of LLC participation. Statistically significant improvements in SDQ scores among LLC participants, particularly long-term ones, would indicate the program's effectiveness in enhancing psychosocial and prosocial development. In contrast, non-significant findings would prompt consideration of other variables, including insufficient exposure length, environmental influences, or limitations in measurement sensitivity.

Discussion

Should the hypotheses be supported, the findings will provide important validation for the Little Lions Club as a vehicle for delivering social-emotional learning through physical activity. The results would suggest that integrating SEL strategies into athletic programming can yield measurable improvements in young children's emotional and social development. These insights may encourage early childhood educators, coaches, and policy makers to adopt similar approaches in other educational or recreational settings.

Additionally, the study would contribute to the broader body of literature on early childhood interventions, offering a replicable model for combining movement, group dynamics, and behavioral support. By identifying the specific SEL outcomes most responsive to program participation, future research can refine intervention strategies and further explore long-term developmental impacts.

Ethical Considerations

This study received ethical approval from the Psychology Institutional Review Board at William & Mary (IRB-2025-108). Informed consent was obtained electronically from all parents via DocuSign. To protect confidentiality, all data were de-identified and stored securely on encrypted platforms. Participation was entirely voluntary, and no risks beyond those of daily life were anticipated.

Results

1. Within-Group Comparisons

To assess the impact of the Little Lions Club (LLC) program on children's psychosocial outcomes, changes in SDQ (Strengths and Difficulties Questionnaire) scores from pre- to post-intervention were analyzed across three participant groups: long-term LLC members, newly enrolled LLC participants, and a control group not enrolled in the program. Data analysis was conducted using descriptive statistics and paired-samples t-tests to evaluate within-group changes. All analyses were conducted in Excel and interpreted using a significance threshold of $\alpha = 0.10$ (two-tailed), consistent with the exploratory nature of this pilot study.

Each participant was assigned a unique ID to ensure confidentiality, and the data was de-identified during analysis. The SDQ tool used was age-appropriate and standardized across 2–4 and 4–17 age groups. Outcome domains included: Total Difficulties, Emotional Symptoms, Conduct Problems, Peer Problems, Prosocial Behavior, Impact of Difficulties, and two composite scales—Internalizing (Emotional + Peer) and Externalizing (Conduct).

Table 2

Group Means Change and Paired t-Test (Within-Group Change)

Subscale	LLC Long- Term ΔM	LLC Long- Term t	LLC Short- Term ΔM	LLC Short- Term t	Not Enrolled ΔM	Not Enrolled t
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Total Difficulties	-0.73	-0.68	-0.14	-0.13	+1.75	+1.21
Emotional Symptoms	-0.73	-1.70	-0.43	-2.12	+0.25	+0.80
Conduct Problems	-0.20	-0.68	-0.57	-1.19	+0.25	+0.68
Peer Problems	+0.73	+2.22**	-0.43	-1.16	+1.13	+2.35**
Prosocial Behavior	-0.27	-0.81	+0.00	+0.00	-0.75	-1.21
Impact of Difficulties	-0.33	-1.70	+0.00	N/A	+0.00	+0.00
Internalizing	-0.40	-0.53	-0.86	-1.69	+1.38	+2.11**
Externalizing	+0.19	+0.20	-0.14	-0.16	+0.63	+0.78

Note. ΔM = Mean Change (Post – Pre); positive values for Total Difficulties, Emotional, Conduct, Peer, and Impact subscales reflect worsening symptoms; for Prosocial Behavior, positive values reflect improvement. Bolded t-values indicate statistically significant results at $p < .10$ (critical t-values: 1.761 for long-term group ($df = 14$), 1.943 for new to LLC ($df = 6$), and 1.895 for control group ($df = 7$)).

Interpretation by Group

LLC Long-Term Participants ($n = 15$)

Children who had been in the LLC program for at least two months showed small but consistent improvements in several domains. Total Difficulties, Emotional Symptoms, and Internalizing scores all decreased (i.e., lower difficulties = better results), though none reached statistical significance. Peer Problems increased significantly ($t = 2.22, p < 0.10$), which may suggest increased sensitivity to peer interactions or temporary disruptions from group dynamics. Importantly, Prosocial Behavior remained stable and Impact scores slightly decreased.

New to LLC Participants ($n = 7$)

This group showed promising short-term benefits. Emotional Symptoms significantly improved ($t = -2.12, p < 0.10$), while Conduct and Peer Problems showed decreasing trends, although not statistically significant. Internalizing difficulties also dropped, nearing significance. These early patterns may reflect the program's immediate influence on emotional regulation and social adjustment.

Control Group – Not Enrolled ($n = 8$)

In contrast, children not enrolled in LLC showed an overall decline in psychosocial functioning. Total Difficulties, Peer Problems, and Internalizing difficulties all increased post-test. Peer Problems and Internalizing scores rose significantly ($t = 2.35$ and 2.11 respectively), suggesting natural developmental stressors or lack of intervention support during the study period.

Summary of Within-Group Findings:

Overall, participation in LLC – particularly among newly enrolled children – was associated with meaningful decreases in emotional symptoms and internalizing difficulties. Long-term participants maintained stable scores with fewer signs of worsening than the control group. The significant rise in Peer Problems among long-term LLC members, while unexpected, warrants further investigation. These findings suggest that even brief exposure to LLC may promote short-term emotional well-being, and sustained participation might provide buffering effects against psychosocial decline.

Future iterations of this study should include larger sample sizes and longer follow-up periods to better understand longitudinal effects. Including qualitative feedback could also shed light on nuanced peer dynamics and perceived benefits from the program.

2. Between-Group Comparisons

To further evaluate the effectiveness of the Little Lions Club (LLC) program, the study conducted independent samples t-tests to compare post-test scores between groups.

Specifically, it examined differences between Short-Term participants ($n = 7$), Long-Term participants ($n = 15$), and a Control group of children not enrolled in LLC ($n = 8$). These analyses focused on the same SDQ subscales: Total Difficulties, Emotional Symptoms, Conduct Problems, Peer Problems, Prosocial Behavior, Impact of Difficulties, Internalizing, and Externalizing. A significance level of $\alpha = 0.10$ (two-tailed) was used, consistent with the pilot nature of this study.

Table 3

*Post-Test Group Mean Comparisons and Between-Group (Independent Samples *t*-Test)*

Subscale	Short-Term Mean	Long-Term Mean	Not Enrolled Mean	Short vs Not Enrolled <i>t</i>	Short vs Long-Term <i>t</i>	Long-Term vs Not Enrolled <i>t</i>
Total Difficulties (7–10 avg)	8.14	9.13	10.00	-0.95	-0.85	0.44
Emotional Symptoms (0–2 avg)	0.71	1.60	1.86	-3.18**	-2.31**	0.81
Conduct Problems (0–3 avg)	2.00	1.80	2.13	-0.13	0.28	0.38
Peer Problems (0–2 avg)	1.43	1.20	1.50	-0.11	0.40	0.64
Prosocial Behavior (7–10 avg)	8.14	7.87	8.36	-0.26	0.39	0.65
Impact of Difficulties (0 avg)	0.29	0.20	0.50	-0.45	0.27	0.74
Internalizing (0–2 avg)	2.14	2.80	3.38	-0.54	-0.99	0.94

Externalizing	6.00	6.33	6.63	-0.37	-0.29	0.18
(7–10 avg)						

Note. Lower scores on subscales like Total Difficulties, Emotional Symptoms, Conduct Problems, Peer Problems, Impact of Difficulties, Internalizing, and Externalizing indicate better outcomes. Higher scores on Prosocial Behavior indicate better outcomes. Bolded t-values indicate statistically significant results at $p < .10$.

Only the Emotional Symptoms subscale revealed a statistically significant between-group difference. Short-Term participants scored significantly better (i.e., lower difficulties) than children in the Not Enrolled group ($t = -3.18, p < 0.10$). While not statistically significant, other trends favored the LLC groups – particularly Short-Term participants – across most subscales, with lower mean scores for Total Difficulties, Peer Problems, and Internalizing Difficulties. These differences suggest a potential buffering effect of even brief program involvement against psychosocial risk factors.

Summary of Between-Group Findings

- Short-Term vs. Not Enrolled: Short-Term participants had significantly lower Emotional Symptoms. While other subscales showed no statistical significance, all were numerically more favorable among Short-Term participants, except for a slight difference in Conduct.

- Short-Term vs. Long-Term: Scores were largely comparable, with Emotional Symptoms again favoring Short-Term participants. Peer and Internalizing difficulties were slightly lower in the Short-Term group, suggesting that early program engagement may be especially impactful in emotion-related domains.

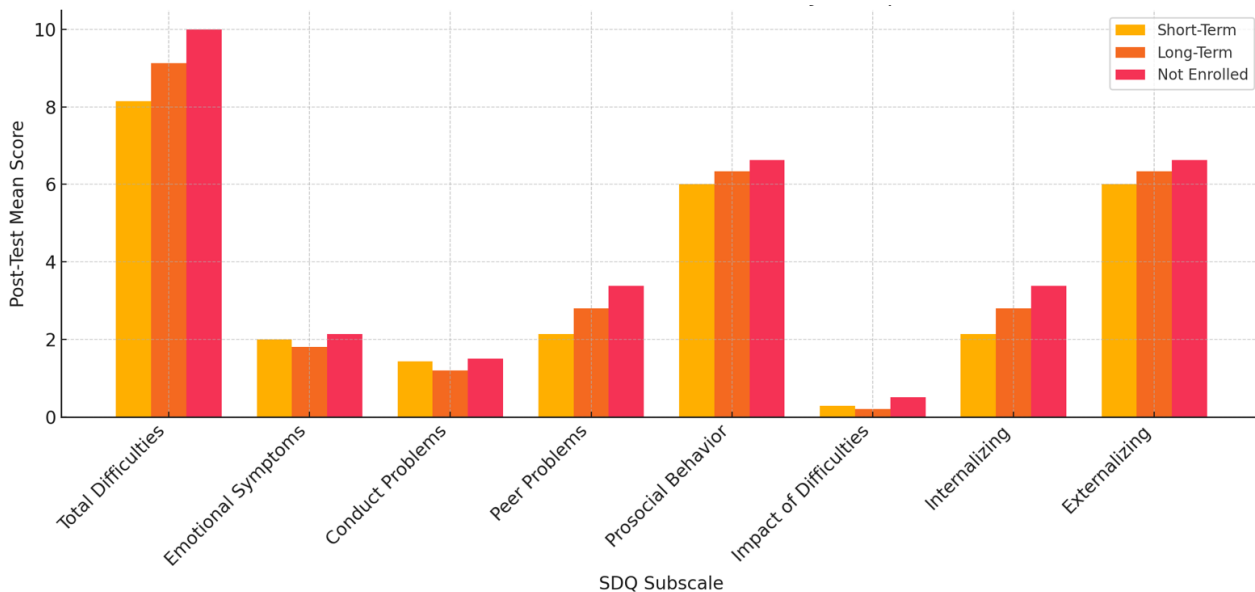
- Long-Term vs. Not Enrolled: While no differences reached statistical significance, Long-Term participants consistently scored better across Total Difficulties, Internalizing, and Peer Problems.

The independent samples t-tests revealed several meaningful patterns in post-test SDQ scores across the three groups. Most notably, children in the Short-Term LLC group scored

significantly lower on Emotional Symptoms compared to the Not Enrolled group ($t = -3.18, p < 0.10$), suggesting immediate emotional benefits from brief participation in the program. Although not statistically significant, trends favored Short-Term participants in nearly every domain. They reported the lowest mean scores for *Total Difficulties* ($M = 8.14$) and *Internalizing Problems* ($M = 2.14$), both lower than Long-Term ($M = 9.13$; $M = 2.80$) and Not Enrolled peers ($M = 10.00$; $M = 3.38$), indicating reduced emotional and peer-related stressors.

Comparisons between Short-Term and Long-Term participants revealed marginal differences, with Short-Term children again showing slightly better emotional outcomes (Emotional Symptoms: $M = 2.00$ vs. 1.80 ; Peer Problems: $M = 2.14$ vs. 2.80), even though Long-Term participants had slightly better Prosocial Behavior ($M = 6.33$ vs. 6.00). These differences suggest that Short-Term engagement may quickly improve emotional regulation, while sustained participation could support the development of social skills.

Interestingly, the Not Enrolled group consistently demonstrated the highest levels of difficulty across nearly all subscales, particularly in Peer Problems ($M = 3.38$) and Internalizing difficulties ($M = 3.38$), with both reaching statistical significance in earlier paired t-tests. These findings provide compelling preliminary evidence that the Little Lions Club may serve as a protective factor against worsening psychosocial health, especially in emotion-related areas. Continued participation may help sustain these benefits, while absence from such programming appears linked to greater psychosocial vulnerability.

Figure 1*Post-Test SDQ Subscale Scores by Group*

Note: Lower scores on subscales like Total Difficulties, Emotional Symptoms, Conduct Problems, Peer Problems, Impact of Difficulties, Internalizing, and Externalizing indicate better outcomes. Higher scores on Prosocial Behavior indicate better outcomes

Conclusion

This pilot study provides preliminary evidence that participation in the Little Lions Club (LLC) program is associated with improvements in children's psychosocial functioning, particularly in emotional domains. While statistical significance was limited – expected given the small sample size and exploratory nature of the study – the trends across both within-group and between-group analyses suggest that engagement with LLC may yield beneficial outcomes in emotional well-being, peer interactions, and overall behavioural adjustment.

Newly enrolled participants demonstrated the most notable improvements, with significant reductions in emotional symptoms and notable improvements in internalizing problems. These early gains may reflect the immediate effects of structured physical activity and social engagement on emotional regulation. Long-term participants, though not showing as many statistically significant changes, maintained stable functioning with fewer signs of

decline compared to the control group, pointing to potential protective effects of continued participation.

In contrast, children not enrolled in the program experienced worsening outcomes, particularly in peer and internalizing domains. These findings underscore the potential value of early intervention programs like LLC in preventing psychosocial deterioration during sensitive developmental periods.

Importantly, the unexpected increase in peer-related difficulties among long-term participants highlights the need for further investigation into group dynamics and how children's social experiences evolve over time in peer settings. Qualitative data in future studies may help clarify these trends.

Given these promising yet preliminary results, future research should replicate this design with a larger, more diverse sample and extended follow-up periods. Integrating child and parent feedback, observational data, and multi-informant reporting could further enrich the understanding of program impact. Overall, this study supports the feasibility of using SDQ-based measures in community-based interventions and highlights the potential of programs like Little Lions Club to promote psychosocial development in early childhood.

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