CRITICALLY APPRAISED PAPER (CAP)

FOCUSED QUESTION
For at-risk middle-school youth, what is the effect of participation in a youth empowerment summer day camp program, when compared to a control group who participated in typical summertime activities, on self-reported growth in skill development and resilience?


CLINICAL BOTTOM LINE:
Clinical implications of the results of this study suggest that a summer camp experience that incorporates principles of Positive Youth Development (PYD), with an emphasis on occupation, can increase resiliency and skill development in at-risk youth. The intervention component of this study consisted of a 5-week summer day camp program that emphasized an enriched environment that adhered to the principles of PYD and occupation-based programming that allowed campers to exercise choices in activity characteristics, attitude, and behavior. Results indicate a sustained or positive growth in social skills and positive values with an increase in a positive outlook before to after summer. Successful participation in occupation-based activities also appears to positively influence skill competence and expanded positive choices.

Limitations of the study were the use of convenience samples in which the groups differed in important factors, such as school performance, a relationship with the researchers, and differences in the time and environment in which the data were collected. The high attrition rate and the lack of a measure of change attributed to maturation also are limitations to this study.

This study contributes to research aimed at exploring and understanding the benefits of an occupation-based summer camp in promoting social, emotional, and mental health in at-risk youth, which then informs clinical practice for at-risk youth. This study also provides support for the role occupational therapy in promoting healthy youth development; however, additional insight on the positive impact of an occupation-based summer camp on youth experiencing occupational deprivation and engagement may be obtained through the use of follow-up qualitative studies.
RESEARCH OBJECTIVE(S)
List study objectives.
The purpose of this study was to determine the impact of a summer camp experience on at-risk middle school youth by exploring self-reported growth in skill development and resilience.

DESIGN TYPE AND LEVEL OF EVIDENCE:
Level II: Mixed methods approach with an explanatory sequential design

Limitations (appropriateness of study design):
Was the study design type appropriate for the knowledge level about this topic? Circle yes or no, and if no, explain.

YES NO This study uses a two-group comparison, which helps to determine the impact of the intervention (summer camp) on the outcomes measures (self-reported growth in skill development and resilience) on at-risk youth.

SAMPLE SELECTION
How were subjects selected to participate? Please describe.
A convenience sample of male and female middle school students between the ages of 10 and 13 were recruited from a socioeconomically disadvantaged urban neighborhood in the Mid-Atlantic region of the U.S. Participants were recruited from four different Title I schools within this neighborhood.

Inclusion Criteria
Inclusion criteria for the experimental group required that the students be enrolled in the grant-funded after-school program, had a willingness to attend and participate in a summer camp, and had consent to participate in the program/study from a parent or guardian. Inclusion criteria for the control group required that each student be enrolled in a health/physical education class, a willingness to participate in data collection periods, and had consent to participate in the study from a parent or a guardian.

Exclusion Criteria
NR

SAMPLE CHARACTERISTICS
N = 73 children
Campers (experimental group), n = 23
Non-campers (control group), n = 50

% Dropouts The exact number of dropouts, and at which phase, was not reported. Camper participation (experimental group) ranged from 14–22 youth and typical summer activities (control group) ranged from 25–40 across all three quantitative data.
collection phases. Only the data of the youth who participated in all three data collection phases were included in the final statistical analysis: \( n = 14 \) campers (experimental) and \( n = 25 \) controls.

Experimental group:

<table>
<thead>
<tr>
<th>#/ (%) Male</th>
<th>#/ (%) Female</th>
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<tbody>
<tr>
<td>43%</td>
<td>57%</td>
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</table>

Ethnicity: 91% African American

Disease/disability diagnosis: No formal diagnosis

Check appropriate group:

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<thead>
<tr>
<th>&lt;20/study group</th>
<th>20–50/study group</th>
<th>51–100/study group</th>
<th>101–149/study group</th>
<th>150–200/study group</th>
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<td>✅</td>
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INTERVENTION(S) AND CONTROL GROUPS

*Add groups if necessary*

**Group 1: Experimental (campers)**

**Brief Description**

Attended a 5-week summer day camp on the campus of a local university. The camp focused on nutrition, fitness, and psychosocial resilience, all of which are the focus of the federally funded after-school program aimed to increase resilience and prevent obesity. Physical activities included basketball, baseball, yoga, martial arts, rock-climbing, and swimming. Occupation-based groups provided include developing a personal webpage; exploring career interests; engaging in self-regulating craft activities, such as ceramics and jewelry making; preparing healthy snacks; and completing a five-session peer pressure module.

**Setting**

The camp took place at the campus of a local university.

**Who Delivered?**

The researchers, who are occupational therapists and an occupational therapy graduate student, delivered the intervention.

**Frequency?**

NR

**Duration?**

5 weeks

**Group 2: Control Group (non-campers/typical summertime activities)**

**Brief Description**

Participated in unstructured, self-selected occupations and activities physical in nature, such swimming, playing basketball, and skating.

**Setting**

Youths’ natural home/community environment

**Who Delivered?**

N/A
<table>
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<tr>
<th>Frequency?</th>
<th>NR</th>
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<tbody>
<tr>
<td>Duration?</td>
<td>5 weeks</td>
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</table>

**Intervention Biases:** *Circle yes or no and explain, if needed.*

**Contamination**

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<th>YES/NO</th>
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**Co-intervention**

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The article does not report if the campers from the experimental group or the youth from the control group were enrolled in any other programs, such as the YMCA or other structured arts and crafts or sports programs, or if they participated in activities or occupations that were unstructured in nature within their natural home or community environments.

**Timing**

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<th>YES/NO</th>
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**Site**

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Intervention for the campers (experimental group) took place at a local university outside of their natural home and community environments. The control group maintained typical activities, with no formal intervention, within their existing natural home and community environments. This inconsistency in environments may have affected measured outcomes as the natural home and community environments in which these youth live acts as a barrier to engagement in positive occupations. Based on the nature of this study, the site intervention is not consistent among the groups. Furthermore, the site of data collection is also inconsistent. Data collection for the control group took place during a physical education class; data collection for the experimental group took place in the after-school environment. This inconsistency may have positively affected control and/or negatively affected camper measure outcomes.

**Use of different therapists to provide intervention**

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**MEASURES AND OUTCOMES**

Complete for each relevant measure when answering the evidence-based question:

Name of measure, what outcome was measured, whether the measure is reliable and valid (as reported in article – yes/no/NR [not reported]), and how frequently the measure was used.

The Camper Growth Index (CGI) is a reliable and valid self-report survey administered to assess...
factors of resilience on at-risk youth on four domains and 10 constructs: positive identity (positive identity and independence), social skills (leadership, friendship skills, insecurity, and peer relationships), physical and thinking skills (adventure/exploration and environmental awareness), and positive values (positive values and decision making). The CGI is a reliable measure of self-reported skill development. Convergent validity was determined based on the relevancy of the domains and constructs with other psychological measures such as the Social Anxiety Scale for Children ($r = 0.41—0.53$), Personal Values Scale ($r = 0.36$), and Piers-Harris Children’s Self-Concept Scale ($r = 0.26—0.51$). Construct validity was determined based on low correlations that were statistically significant among domains and constructs across the measures.

In-depth interviews were conducted with selected participants from the experimental group and the control group at 6-month post camp. Questions were formulated after reviewing and analyzing responses to the CGI with an aim at understanding the quantitative findings from an occupational perspective. This phase explored aspects of the participants’ environment and occupations that contributed to skill development and resilience for both groups.

**Frequency:** The CGI was administered at three points throughout the study: pre (1 month prior to the camp, post (1 month after camp), and follow up (6 months after the cessation of camp). Summer camp was 5 weeks in duration

**Measurement Biases**

Were the evaluators blind to treatment status? *Circle yes or no, and if no, explain.*

<table>
<thead>
<tr>
<th>YES/NO</th>
<th>N/A. The CGI is a self-reported outcome measurement in which the outcome would not be affected based on whether or not the evaluator(s) were aware of the group in which the participant was assigned.</th>
</tr>
</thead>
</table>

Recall or memory bias. *Circle yes or no, and if yes, explain.*

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<thead>
<tr>
<th>YES/NO</th>
<th>The CGI is a self-report and the data collection consisted of three phases. Recall or memory bias may have been an issue concerning the data collections phases at the 1-month post camp and the 6-month camp follow-up after the 5-week camp period.</th>
</tr>
</thead>
</table>

Others (list and explain):

The article states that the students in the experimental group had a relationship with the researchers, as the researchers provided life-skills programming and occupational therapy in the after-school program. The control participants did not have a relationship with the researchers. These factors most likely affected the overall data analysis.

**RESULTS**

List results of outcomes relevant to answering the focused question

Include statistical significance where appropriate ($p<0.05$)

Include effect size if reported

Quantitative results revealed participant self-reported skill development and factors associated
with resilience from the Camper Growth Index. Self-reported change was reported at a
significance level of \( p < .05 \). In the domain of positive identity, which is composed of the
constructs of positive identity and independence, both groups improved their self-reported mean
positive and post identity from pretest to 1-month post summer (campers: \( M = 3.16 \) vs. control: 
\( M = 3.44 \)). Both groups’ self-reported positive identity decreased at the 6-month post-camp
follow-up from the baseline (Campers: mean score pretest: 3.10 and mean score follow-up: 3.06
vs. Control: mean score pretest: 3.39 and mean score follow-up: 3.31). From pretest to post
summer, campers had statistically significant \( (p = 0.05) \) positive growth in their belief that they
“have a good life ahead” of them as compared to the control group (Campers: \( M = 0.48 \) vs.
Control: \( M = 0.04 \)). In the domain of social skills, which is composed of the constructs of
leadership, making friends, insecurity, and peer relationships, both groups improved their self-
reported social skills from pretest to post-summer (Campers: mean score pretest: 2.97 and mean
score posttest: 3.10 vs. Control: mean score pretest: 3.25 and mean score posttest: 3.32).
Campers reported increased social skills at the 6-month follow-up from baseline (mean score
pretest: 2.97 vs. mean score follow-up: 2.99), while the control group reported decreased social
skills at the 6-month follow-up from baseline (mean score pretest: 3.25 vs. mean score follow-
up: 3.09). This outcome suggests that positive growth in social skills was only maintained by the
campers. Campers reported statistically significant increased positive growth \( (p = 0.05) \) to the
statement “I worry about making new friends,” meaning they worried less from pretest to post
summer as compared to controls (Campers: \( M = 0.29 \) vs. Control: \( M = -0.28 \)). Campers also
reported statistically significant \( (p = 0.05) \) decreased positive growth in the statement “It’s hard
to keep new friends” from post summer to 6-month follow-up.

In the domain of physical thinking, which is composed of the constructs adventure/exploration
and environmental awareness, both groups improved their self-reported physical and thinking
skills related to environmental awareness \( (p = 0.05) \; \text{Campers: } M = .57 \; \text{vs. Control: } M = .21 \)
from pretest to post summer. However, scores declined for both groups lower than baseline at follow-
up.

The greatest limitation of this pilot study was attrition. It was difficult to obtain data at three
points in time with this population. In addition, there was no measure of change attributed to
maturation.

Qualitative results revealed three significant themes through analysis of individual in-depth
interviews related to successful participation in occupation-based activities: (a) engagement
influenced skill competence, (b) the camp environment expanded positive choice and availability
of positive outcomes, and (c) males developed resilience and skills from informal physical
neighborhood activity. Females did not report such skill development, which may be an
indication of continued risk for them in the summer time due to decreased opportunities to
develop their skills through informal activities within their community.

Was this study adequately powered (large enough to show a difference)? Circle yes or no, and if
no, explain.

**YES/NO**
Were appropriate analytic methods used? *Circle yes or no, and if no, explain.*

**YES/NO**

**CONCLUSIONS**
State the authors’ conclusions that are applicable to answering the evidence-based question.

This study found that summer camp experiences employing occupation-based principles were effective in increasing skill development and resilience factors in at-risk youth. The authors suggest that at-risk youth can develop skills of positive identity, social skills, physical and thinking skills, and positive values through an occupation-based approach as compared to maintaining typical activities within their home and community environments. Youth who attended the occupation-based summer program were able to make decisions in healthy occupations due to the camp environment, rich in occupation-based activities, that provided a safe haven from the streets. Occupation-based activities provide skill development and resiliency factors, and such opportunities were not available to the non-campers as they engaged in typical activities within their natural home and community environments. Such skills and resiliency factors will enable at-risk youth to thrive in their natural environments and to assist them in avoiding dangerous situations and the pull of the streets. Those who are disempowered by their environmental circumstances can benefit from occupation-based summer camp programs that promote skill development and resiliency within a safe and supportive environment.

This work is based on the evidence-based literature review completed by Nicole Santostefano, OTS, and Jennifer Garner, OTD, OTR, Faculty Advisor, Kean University, Union, NJ.


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