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Does Participation in Outreach Program Change Resilience in At-Risk Youth?

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Clinical Science Research

Prospective Cohort Study

Does Participation in Outreach Program Change Resilience in At-Risk Youth?

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Abstract

BACKGROUND: Resilience, or the ability to bounce back from adverse events, is a skill that can be taught through targeted interventions. One intervention that has not been studied to increase resilience is youth outreach. Lifting up Camden's Youth (LUCY) is an outreach program that has helped thousands of at-risk youth of the inner-city population in Camden, NJ to overcome traumatic experiences and succeed academically. The "7C's of Resilience tool" is a succinct and validated tool to measure resilience in adolescents.

OBJECTIVE: To determine the potential increase in resilience in youth after participating in LUCY, further identifying the relationship between attendance with the ability to bounce back from adversity. To demonstrate the utility of youth outreach programs in a high-risk urban community.

METHODS: Adolescents new to LUCY were recruited. A pre-post repeated measures design was used to compare resilience before and after participation in LUCY for three months. Resilience was measured using a succinct validated survey, the 7C's tool. Demographic data was also collected.

RESULTS: There were 26 participants at baseline, 12-18 years old (69% female). 12 participants completed the survey following participation in LUCY. Baseline mean resilience score was 3.77 (range 0-8, SD 2.30), and post intervention mean score was 2.50 (range 0-6 SD 1.78). The sample size was insufficient to yield enough power to detect a statistically significant difference in resilience after versus before the intervention. The post intervention score was also lower than the mean score derived from the sample population in which the tool was validated (total score of 2.98 (range 0-10, SD 2.38))

CONCLUSIONS: There is a clinically significant increase in resilience among adolescents after participation in youth outreach program.

Abbreviations

LUCY=Lifting Up Camden’s Youth YB, YRBSS=Youth Risk Behavior Surveillance System

Keywords

adolescents/adolescence, youth, outreach, resilience, adversity, inner-city, at-risk, protective factors

Introduction

What is Resilience?

As the research behind resilience continues to grow, the definition continues to change. The American Psychological Association now defines resilience as the process of adapting well in the face of adversity or more simply, the ability to “bounce back” from difficult experiences (1). There is most likely a predisposition to resilience due to genetics and neurobiology, but the environment also plays a key role. Several factors contribute to resilience, the primary factor being access to caring and supportive relationships within and outside the family (1). These relationships should not only provide love, but also provide role models for an individual. Other factors that are associated with resilience include having the capacity to make realistic plans and carrying them out, as well as the capacity to handle emotions and impulses. Viewing one’s self positively and having confidence in addition to both communication and problem-solving skills all help to foster one’s resilience (1). These factors can be summed up into the following aspects of resilience: attachment, family, peers, learning and thinking systems, executive function system, mastery motivation, rewards system, religion, cultural system, and education system (2).

Despite facing serious challenges, children and adolescents that are considered “at-risk” are succeeding. The phrase “at-risk” recognizes that these individuals have greater chances of morbidity and mortality as a result of increased internal and external stressors (3). The phenomenon of positive adaptation of young people faced with extreme adversity was first recognized in the 1970s and is still being promoted by many studies (2). Recent research on resilience in adolescents has led to theories in which interventions are being created to build resilience. Responsiveness to these interventions is thought to go hand-in-hand with the individual’s executive function skills. These skills include planning capabilities, directing attention, and inhibitory control (2).

According to the Youth Risk Behavior Surveillance System (YRBSS), there are 6 types of health risk behaviors that contribute to higher outcomes of death and disability in young adults. These include risky behaviors leading to unintentional injuries and violence, sexual behavior related to unintentional pregnancy and sexually transmitted infections, alcohol and other drug use, tobacco use, unhealthy dietary behavior, and inadequate physical activity (4). Sociocultural factors that reduce an adolescent’s vulnerability to interact with risky behaviors include positive family functioning, socioeconomic status, ethnicity, neighborhood quality, peer relationships, and school environments. As previously mentioned, these protective factors also overlap with the aspects that help contribute to resilience. It is possible that interventions that enhance these protective factors can also build resilience (3).

Many interventions to reduce risky behavior and increase resilience have occurred within the school system. However, it is thought that there is greater vulnerability for risky behavior during the after-school hours (3). A study on 33 African American students living in Youngstown, Ohio, showed that participation in the after-school program resulted in achieving

average intelligence and increased basic skills in reading and mathematics. Prior to enrolling in this study, the youth were two grade levels behind their peers, and had a history of suspension or expulsion from school with at least 20 discipline referrals within the previous year (5).

Interventions in an after-school program such as group tutoring, cultural and social activities, recreational events, and nutritional meals and snacks led to higher academic achievement and positive behavior (5). Interventions to increase resilience have also targeted parenting which shows to be the greatest predictor of resilience in children and adolescents. Many families in the inner-city lack a two-parent system (6). This may be due to increased incarceration rates within this population. Single parent-households are associated with a lower socioeconomic status and many single parents are working two or more jobs for financial stability (6). Therefore, targeting parenting for resilience building may not be as feasible in this kind of setting. While most effective interventions occur in early life, high levels of social support may be one strategy that can be implemented at any stage. Teaching skills that are necessary to improve social competence and maintain supportive social networks, enhance resilience and decrease stress-related depression (7).

It is now understood that one's level of resilience can change therefore, measuring resilience is an important aspect of positive youth based counseling. Barger et. al developed and validated a survey to measure resilience, called the "7C's tool" (8). This tool identifies that adolescents with higher 7C's scores (lower resilience) are more likely to engage in risk taking behaviors such as cigarette smoking, alcohol and drug use, high risk sexual behaviors and depressed mood. This study also confirmed that increased adverse events experienced in childhood (ACE score) correlates with increased risk-taking behaviors and it identified a correlation between high ACE scores and low resilience (8).

LUCY Outreach

The city of Camden makes up about nine square miles of the state of New Jersey, housing roughly 77,000 residents. With a homicide count of 44 fatalities and 4200 victims of violent crime in 2016, Camden is ranked as the fourth most dangerous city in the country, according to reports by the Federal Bureau of Investigation (9). Lifting Up Camden's Youth (LUCY) is a non-profit outreach program that originated as a youth ministry of St. Joseph's Pro-Cathedral in Camden, NJ in 1985. Over the past decade, LUCY underwent restructuring by creating innovative programs to address common challenges faced by Camden's youth including: teen delinquency, gang and drug involvement, substance abuse in the home, teen pregnancy, and high school drop-out/failure rate. Since April of 2016, LUCY became its own entity undergoing expansion with an increase in youth recruitment (10).

The programs focus on four integral areas of youth development: educational, social, spiritual, and service-oriented programming. Educational programs include college prep, graduate mentoring, tutoring, leadership, and job training. Social programming focuses on health workshops, group activities, and influencing healthy peer-to-peer relationships and social interactions. Some of the cultural programs offered at LUCY involve inclusivity and social justice workshops, retreats, support groups, cultural festivals and other outings. Finally, the service oriented programs include civic responsibility classes, local service days, annual immersion trip to the Mexican border, and community panels (10).

Since 2008, there has been a one hundred percent high school graduation rate in youth that participate in LUCY. Out of these 204 youth members, 195 continued their education by enrolling in college and the remaining joined the military (10). This can be contrasted to the

city's most recent high school graduation rate of 64% (11). It is apparent that LUCY is making a difference for at-risk youth in the Camden community. The majority of these youth have faced adversities and yet they continue to "make it" against all odds. The role of positive youth based counseling has been shown to increase academic success and decrease negative behavior among students of poverty (5). Additionally, social support is a strategy shown to promote resilience by enhancing executive function and prosocial behavior. This in turn, leads to stronger social skills and academic performance (7). LUCY may contribute to improvements in youth resilience which may in turn improve behavior and school performance. Using the 7C's tool, this study was conducted to determine if participation in the LUCY program improved resilience in the youth. We believe that high levels of participation in the LUCY program will raise resilience overtime, as resilience is a skill that can be learned.

Methods

Design

This was a prospective cohort study with a one group pre-post design to compare resilience before and after participation in the outreach program.

Sample

Participants were recruited from LUCY. No materials were used to recruit individuals.

Inclusion criteria were that prospective participants be male and female adolescents, 12 years and older, and newly enrolled in the LUCY outreach program. They must be able to speak and read English and willing to give informed consent if older than 18 years, or assent if 12-17 years old. Parents/guardians must also be able to speak and read English and provide informed consent.

Exclusion criteria included being under the age of 12 years, unable to provide assent or consent, unable to speak and read English, and/or previous involvement in the program. Participants were recruited verbally at the registration for the LUCY outreach program during youth nights.

Consent forms were given to the participant (if 18 or older) or parent/guardian to be completed with the other program registration forms. This study was approved by the Rowan University Institutional Review Board.

Measures

Survey

The “7C’s of Resilience tool” is a succinct and valid survey used to measure resilience. The survey was developed using the Seven C’s Model of Resilience by Dr. Kenneth Ginsburg which focuses on the following components: competence, confidence, connection, character, contribution, coping, and control (7). For each component, there are 3 statements that range from most to least resilient. These statements are assigned to a point system of 0,1,2 respectively and the participant is asked to select the statement that best describes them. After the survey is completed, a total score is calculated by adding up all of the points. The higher the total score, the lower the resilience. Participants were asked individually to complete the survey during their first week at LUCY and again three months later.

Demographic and Background Form

Participants were asked to fill out a demographic face sheet which included their name, age, gender, ethnicity, grade level, and the neighborhood in which they reside. They were also asked to provide their contact information (phone number and/or email address). Participation in the

outreach program consisted of attending weekly youth nights usually twice a week and/or weekend field trips and events. Program attendance was recorded on a daily basis for each participant.

Data Analysis

To achieve statistical significance, with a power of 20% and alpha level of $p < 0.05$, the required sample size was determined to be 22 participants. This was a pilot study as it was the first time that resilience was measured among youth of LUCY and the first time that the “7C’s tool” was used to measure resilience outside of the clinical setting. Spearman’s correlation was used to compare 7C’s score post-intervention with total number of visits between the two surveys. Spearman’s correlation coefficient was also calculated for the baseline resilience and age of participant. Other statistical analyses included Wilcoxon rank sums test, student’s t-test, sign test, and Wilcoxon signed rank test. All data analysis was performed using SPSS. Descriptive statistics were used to report demographic data.

Results

The intervention group had a total of 26 participants, however only 12 completed the post-intervention survey, falling below targeted sample size analysis. Recruited adolescents were between the ages of 12 and 18 years old. The mean age was 14.3 years and 69.2% were females. In the post-intervention group, the mean age was 15.08 years and 91.7% were females (Table 1). Table 2 includes means, standard deviations, and ranges for the resilience measured before participation in LUCY (score 1) and after 3 months (score 2). The mean score on the 7C’s at baseline was 3.77 (N=26, SD=2.30). After 3 months, the mean score on the 7 C’s was 2.50

($N=12$, $SD=1.78$). Figure 1 demonstrates the relationship between the 7C's score at baseline and the age of the participant. There is a negative correlation between score 1 and age (-0.281 , $p=0.164$), indicating that resilience increases with age. A Spearman's correlation coefficient was also calculated for score 2 and number of visits (0.331 , $p=0.293$). The Wilcoxon Rank Sums test was conducted for score 1 and score 2 using all subjects ($p=0.1170$). No difference was calculated between scores 1 and 2 using student's t-test (-1.239 , $p=0.241$), sign test (-1 , $p=0.774$), or signed rank test (-14 , $p=0.3179$). Table 3 reports the total number of visits during the intervention period for the 12 participants that completed the post-survey.

Finally, the mean pre-intervention score was higher than the mean score derived from the sample population in which the tool was validated (8). Also the mean post-intervention score was lower than the sample population total score of 2.98 (range=0-10, $SD=2.38$), however these differences were not tested for statistical significance.

Discussion

This project was a pilot study to evaluate the potential effects on resilience among inner-city adolescents after participating in Lifting Up Camden's Youth outreach program. The LUCY program is not intended to increase resilience however it was studied as an intervention for increasing resilience building off the success of the program. It has been shown to result in greater academic achievement and less negative behavior among youth that participate in the program compared to the average adolescent student in Camden, NJ. Overall, resilience is shown to improve after participation in LUCY. While the change in resilience was not statistically significant because of smaller sample size, it was clinically significant. The numbers of visits that it takes to see a change in resilience varies. This is consistent with the APA guidelines for

developing resilience. Resilience building is a personalized journey and individuals respond to intervention at their own pace (1). Future studies at LUCY with a larger sample size should be conducted to demonstrate statistical significance. It is also worth noting that as the population ages, resilience scores decline, meaning that youth acquire resilience over time. One may infer from these results that the greatest opportunities are with younger adolescents so that positive modeling may improve resilience and offset the potential for high risk-taking behaviors.

Limitations

The sample size needed to provide statistical significance was not achieved in the time frame allotted for this study. While 26 participants were recruited, only 12 of them completed the post-intervention survey. There are various reasons contributing to the loss of follow up. During the month of September, the LUCY outreach program was closed for a week until they relocated to a different neighborhood in Camden, NJ. The new site is approximately ten minutes of driving away from the original location in East Camden. This relocation is temporary while the directors of the program find a larger permanent space to allow for the program expansion. The temporary site, does not provide adequate space for the after-school program prior to youth nights and therefore some of the participants that participated in the after-school program did not return after the relocation. Two participants were permanently suspended from LUCY after repetitive violations of the rules of the program.

Conclusions

There is an increase in resilience observed among adolescents after participation in LUCY outreach. It is worth expanding upon this research further to achieve a greater sample size. This

information can be used by clinicians, teachers, counselors and parents in the Camden community when seeking interventions to help at-risk youth build resilience. Similar studies can be implemented using other after-school counseling programs for youth, especially within an urban community. Furthermore, it is evident that resilience can change with positive youth based development, mentoring, and counseling.

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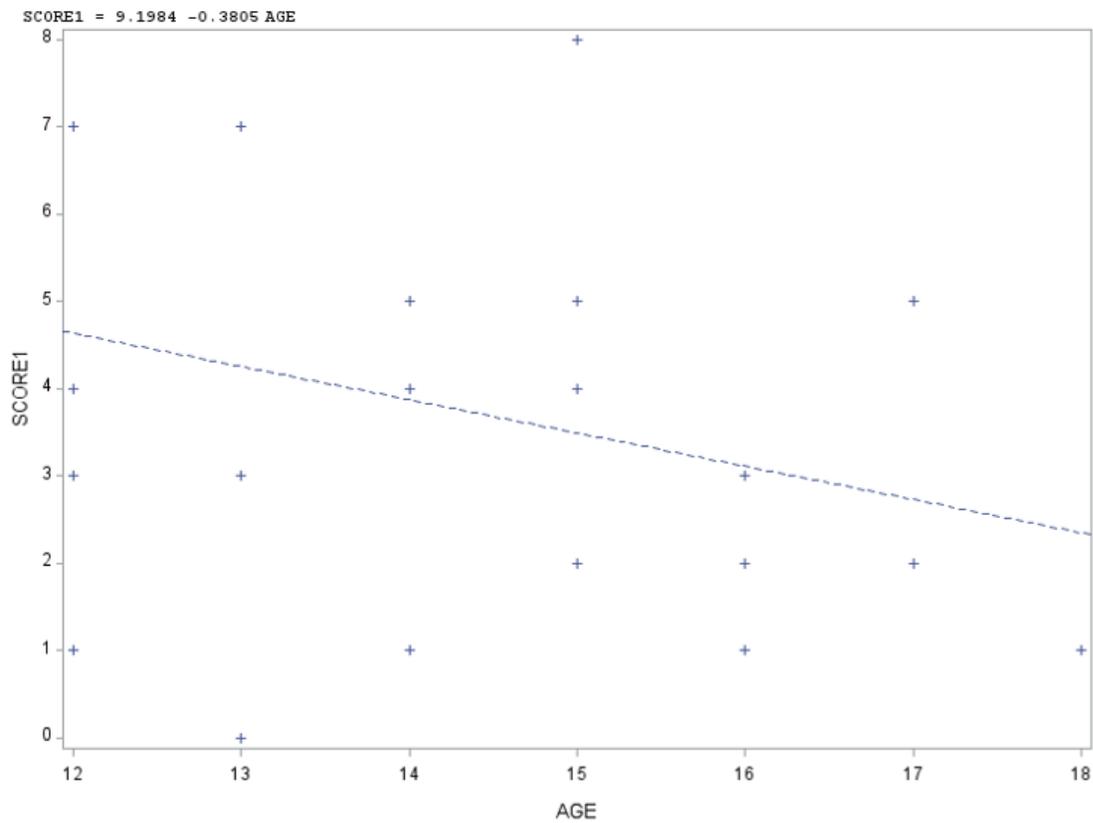
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Table 1. Participant Descriptors

	Baseline		Completes	
Age	<i>Mean</i>	<i>Range</i>	<i>Mean</i>	<i>Range</i>
	14.3	12-18	15.08	12-18
Gender	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>
Male	8	30.8%	1	8.3%
Female	18	69.2%	11	91.7%
Ethnicity				
Hispanic	23	88.5%	11	91.7%
African American	3	11.5%	1	8.3%
Grade Level				
5	1	3.8%	0	0.0%
6	5	19.2%	2	16.7%
7	2	7.7%	0	0.0%
8	3	11.5%	0	0.0%
9	6	23.1%	5	41.7%
10	4	15.4%	1	8.3%
11	3	11.5%	3	25.0%
12	1	3.8%	1	8.3%
unknown	1	3.8%	0	0.0%
Neighborhood				
Cramer Hill	4	15.4%	0	0.0%
East Camden	12	46.2%	5	41.7%
Fairview	1	3.8%	1	8.3%
North Camden	4	15.4%	3	25%
Parkside	1	3.8%	0	0.0%
Pollock	3	11.5%	3	25%
Unknown	1	3.8%	0	0.0%

Table 2: Range of Scores and Means for 7 C's

	<i>N</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Median</i>	<i>Range</i>
Score 1	26	3.77	2.30	3.00	0-8
Score 2	12	2.50	1.78	2.00	0-6

Figure 1: Spearman's Correlation of Resilience Before Participation in LUCY and Age

N	26
Correlation Coefficient	-0.281
P Value	0.164

Table 3: Scores and Number of Visits

Participants	Score 1	Score 2	Number of Visits
<i>1</i>	4	2	6
<i>2</i>	2	3	13
<i>3</i>	3	0	12
<i>4</i>	3	5	16
<i>5</i>	1	4	14
<i>6</i>	7	6	38
<i>7</i>	2	1	10
<i>8</i>	5	2	20
<i>9</i>	8	1	5
<i>10</i>	2	3	45
<i>11</i>	1	2	40
<i>12</i>	4	1	11