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Exploring the Impact of a Wilderness-Based Positive Youth Development Program for Urban Youth

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Abstract

Young people today face a multitude of challenges, especially when growing up in an urban environment. Risk factors such as poverty, exposure to gangs, drugs, and community and family violence threaten healthy development. The positive youth development (PYD) approach attempts to combat these personal and environmental challenges by providing youth with positive, asset-building experiences and meaningful, supportive relationships. There is a need for creative youth development programming that brings these two elements together in a structured and voluntary context, such as a wilderness-based program. This study explored the impact of a PYD program that utilizes mentor-supported wilderness expeditions to build developmental assets among a diverse sample of 159 urban youth in the United States. The Developmental Assets Profile was administered pre- and post-program, as well as 90 days post-program. Quantitative findings show that this type of programming can be an asset-building experience for youth facing multiple risk factors.

Keywords

positive youth development, developmental assets, wilderness, mentoring

Young people today face a multitude of challenges, especially when growing up in an urban environment. Risk factors such as poverty, exposure to gangs, drugs, and community and family violence threaten healthy development (Li, Nussbaum, & Richards,

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2007). If left alone, these risk factors can impede healthy development and functioning and have negative consequences on an individual, familial, and community level. There have been many different approaches to addressing these risk factors through multisystemic interventions; however, a cohesive, research-based framework is needed for program development and evaluation in service delivery to youth exposed to multiple risk factors. The positive youth development (PYD) approach attempts to create this type of framework by providing youth with positive, asset-building experiences and meaningful, supportive relationships to develop resilience and coping skills in the face of risk factors.

Though there are promising studies that shed light on how wilderness-based programs aid in PYD (Passarelli, Hall, & Anderson, 2010; Thurber, Scanlin, Scheuler, & Henderson, 2007; Whittington & Mack, 2010), other than Russell's (2006) study of young offenders, there is little research that examines outcomes of "wilderness-based youth development programs" for youth experiencing multiple risk factors, such as living in poverty, in single-parent households with little education, and in dangerous neighborhoods with low-quality schools (Larson, 2006). Nor is there research examining programs that utilize mentor-supported wilderness expeditions to build developmental assets among urban youth.

To address this disparity in the research and further the goal of positioning outdoor and adventure programs within the PYD framework (Sibthorp, 2010), this study explores the impact of a PYD program that utilizes mentor-supported wilderness expeditions to build developmental assets among urban youth. This study also examines the impact that race and gender have on youth development outcomes.

Review of the Literature

PYD

PYD has become an important perspective in child and adolescent development and is based on the notion that young people are capable of healthy growth and functioning if they develop and are provided with the appropriate internal and external resources, or assets. PYD emerged from criticism that interventions with youth were only responding to crises and doing little in the area of prevention (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004). However, PYD expanded the traditional prevention framework to include longitudinal research that identified multiple and interrelated predictors of youth problem behavior, as well as protective factors that contribute to healthy youth behavior and development (Catalano et al., 2004).

Developmental assets. The Search Institute's (SI) research on PYD (Scales & Leffert, 2004) identified these specific building blocks of healthy development—known as developmental assets. Developmental assets are grounded in developmental systems theory and divided into external and internal assets (Benson, 2007). According to Scales and Leffert (2004), external developmental assets include the youth's support systems, as well as how they view responsibility and constructively use their time;

whereas, internal developmental assets include a youth's personal commitments, values, and competencies.

Support is an external asset that includes family support, positive family communication, other adult relationships, a caring neighborhood, a caring school climate, and parent involvement. Empowerment is an external asset that examines how much a community values youth, sees youth as resources, provides opportunities for service to others, and is safe. Boundaries and expectations look at the external boundaries in families, schools, and communities, as well as the level of positive peer influence and high expectations in a young person's life. Constructive use of time is an external asset that includes the amount of creative activities, youth programs, and religious involvement a young person has, as well as the time spent at home.

Internal assets include values and competencies internal to a young person (Benson, 2007), such as commitment to learning, positive values, social competencies and positive identity. Commitment to learning includes achievement motivation, school engagement, homework completion, connection to school and reading for pleasure. Positive values encompass caring, equality, justice, integrity, honesty, responsibility, and restraint. Social competencies focus on planning and decision making, interpersonal and cultural competence, resistance skills, and peaceful conflict resolution. Finally, positive identity includes a young person's sense of personal power, self-esteem, sense of purpose, and a positive view of one's future.

Both internal and external developmental assets can be strong predictors of future success (i.e., reduction in violence, drug use, likeliness to stay in school) because avoiding risky, delinquent behaviors in adolescence decreases the risk for these same types of behaviors in adulthood (Benson, Scales, Hawkins, Oesterle, & Hill, 2004). The SI (2012b) reaffirms this strong relationship between the amount of assets in a youth's life and healthy, positive development. Results show that the more Developmental Assets young people have, the less likely they are to engage in high-risk behaviors such as drug and alcohol use, unsafe sex, and violence. The PYD approach creates a comprehensive framework for understanding what youth need to thrive, and research in this area clearly shows the importance of developing developmental assets in young people in order to build a healthy future.

The PYD framework is especially important for low-income youth living in urban environments in which there are numerous external risk factors (Roffman, Pagano, & Hirsch, 2001). According to Roffman et al. (2001), young people living in high-risk urban environments need both the provision of opportunities for growth and the presence of caring, stable adults. Programs that focus on building protective factors are often "more successful in engaging children than efforts that target the prevention of specific problems" (Roffman et al., 2001, p. 86). This strengths-based approach takes away the stigma of labeling youth as "at-risk" and allows for opportunities to develop self-esteem and positive identity.

For young people from marginalized social groups, growing up among the multiple risk factors found in poor, urban environments, positive identity development, particularly in the area of racial identity, is a crucial protective factor linked to PYD. As Caldwell, Kohn-Wood, Schmeelk-Cone, Chavous, and Zimmerman (2004) point out,

positive racial identity can be a protective factor against violence and racial discrimination. Though the PYD framework does include positive identity development, there needs to be ongoing attention given to issues of race, ethnicity, and gender as they relate to youth identity.

Youth development programming. Though identifying developmental assets is important, research has shifted from solely looking at specific assets to looking at what types of programs, experiences, and relationships can actually build these assets. According to Scales, Benson, and Mannes (2006), there are a few common ingredients that are necessary in whatever context developmental assets are being built. One of these ingredients is the presence of consistent, caring adult relationships both inside and outside of the youth's family (Scales et al., 2006). Heinze, Jozefowicz, and Toro (2010) report that by pairing caring and supportive relationships with opportunities for youth to increase skill building, strength identification, and personal growth, programs can enhance overall youth competencies. Though Larson (2006) originally described PYD as emerging primarily through the youth's own self-motivation, current research shows that a youth's self-motivation is increased through structure and nurture provided by adults who support the youth's positive developmental endeavors (Larson, 2006).

There are many factors that play into PYD but it seems increasingly clear that the presence of positive adult relationships in the lives of youth is a crucial component. The question then becomes how to best develop these relationships. One study found three specific relational strategies that service staff can use to develop relationships with youth. The strategies include minimizing relational distance, active inclusion, and attention to proximity of the relational ties (Jones & Deutsch, 2011). They indicate that youth-staff relationships serve as the foundation for youth engagement in programs as well as positive developmental outcomes (Jones & Deutsch, 2011). However, many youth programs are understaffed and cannot meet the complex needs of youth without enlisting the help of caring volunteers. Often, volunteers take on the role of mentors for youth, which can be another consistent, caring adult relationship in the young person's life.

Mentoring. According to Scales et al. (2006), "Caring adults outside of young people's own families play significant roles in providing a number of the developmental assets and, therefore, in the promotion of adolescent well-being" (p. 402). According to Rhodes, Reddy, Roffman, and Grossman (2005), supportive nonparent adult relationships can greatly influence the course and quality of a youth's life, but many youth never have this type of relationship. In the absence of these positive relationships, many young people must learn to cope with such problems as delinquent behaviors or poor academic performance (Mano, 2007). These problems can be reduced when innovative and effective mentoring relationships and activities are provided that support "at-risk" adolescents (Mano, 2007).

In a meta-analysis of 55 mentoring program evaluations, DuBois, Holloway, Valentine, and Cooper (2002) found significant associations between youth involved

in mentoring relationships and positive developmental outcomes, particularly in the areas of emotional/psychological well-being, involvement in problem or high-risk behavior, and academic outcomes. Program effects are enhanced significantly, however, when more theory based and empirically based "best practices" are utilized, and when mentors and youth form strong relationships (DuBois, Holloway, et al., 2002). When programs support relationship development and the connections are both close and consistent, the results increase systematically (Rhodes & DuBois, 2008). DuBois and Silverthorn (2005) reported that respondents from their national study who reported having a mentoring relationship were more likely to demonstrate positive outcomes in a variety of areas. This includes positive outcomes in education/work (completing high school, college attendance, working ≥10 hr a week), reduced problem behavior (gang membership, hurting others in physical fights, risk taking), psychological well-being (heightened self-esteem, life satisfaction), and health (physical activity level, birth control use). Findings suggest a broad and multifaceted impact of mentoring relationships on adolescent health (Dubois & Silverhorn, 2005). Similar reports show mentoring can be used as a valuable tool to increase positive youth outcomes across many different areas of a youth's development. DuBois, Portillo, Rhodes, Silverthorn, and Valentine (2011) indicate the effectiveness of mentoring across outcomes including behavioral, social, emotional, and academic domains.

Though there is empirical support for youth mentoring programs, there is a general need to address and analyze different models, practices, and unique contexts in which the mentor/mentee relationship can develop (DuBois, Portillo, et al., 2011). These contexts must provide enriching life experiences, which are both structured and voluntary, that the youth and mentor can share, such as community service projects, religious activities, recreational activities, wilderness and adventure programs, and creative and/or educational programs (Larson, 2000). These life experiences can help youth (a) build coping skills and initiative and (b) become more engaged in their communities by forming a positive relationship with a caring adult (Scales et al., 2006). Though Larson (2000) acknowledges that wilderness and adventure programs may provide the life experiences and appropriate developmental context in which mentor/youth relationships can develop, none of the aforementioned research on mentoring outcomes is based on youth participation in wilderness programs. This study seeks to address that gap, as well as to examine the PYD impact of these types of programs, in particular for urban youth.

Wilderness-based programs. Wilderness-based programs for youth have a rich history in the United States. Outdoor adventure programs like Outward Bound, which has been in existence in the United States since 1963, utilize a wilderness environment, challenge and adventure activities, and cooperative peer and adult relationships to promote leadership and character development (Goldenberg, McAvoy, & Klenosky, 2005; Kellert & Derr, 1998). Meta-analyses of programs in the United States and Australia that examined the aggregate findings of numerous studies found that adventure programs have a significant impact on self-control, self-efficacy, assertiveness,

internal locus of control, and decision making (Cason & Gillis, 1994; Hattie, Marsh, Neill, & Richards, 1997). According to Larson (2000), "This research on adventure programs is clearly the most compelling body of evidence that structured voluntary activities can have powerful, sustainable, positive effects on development, including what looks like development of initiative" (p. 176).

Current studies have affirmed the theory that PYD occurs in outdoor and adventure programs (Passarelli, Hall, & Anderson, 2010; Russell, 2006; Thurber, Scanlin, Scheuler, & Henderson, 2007; Whittington & Mack, 2010). Passarelli et al. (2010) report that employing an educational, strength-based approach to this work will enhance these positive developmental outcomes. The activities experienced in outdoor and adventure education involve incremental challenges that can lead to self-efficacy and personal growth. The group atmosphere of these programs also creates reciprocity, group cohesiveness, interpersonal relationships, and a balance between belonging and individual autonomy (Passarelli et al., 2010). In this type of context, youth participating in a mentor-supported wilderness program have the opportunity to form authentic relationships with nonfamilial adults, as well as to develop themselves personally.

Thurber et al. (2007) identify developmental growth in areas including positive identity, social skills, physical and thinking skills, and positive values and spirituality. Wilderness and adventure-based programs also have the potential to increase physical and expressive courage and develop moral courage (Whittington & Mack, 2010). The authors described physical courage as the drive to physically push through tough experiences. Expressive courage refers to feeling confident to speak up, talk through feelings, and increase overall expressive behaviors. Moral courage applies to developing values and choosing to do the right thing in one's life. Russell (2006) adds that coping skills can be developed through structured experiential and adventure-based curricula and can have a positive impact on outcomes. Research recommends following best practices that support the development of social skills, awareness, and coping and allow for participant reflection on successes and growth (Passarelli et al., 2010; Russell, 2006; Thurber et al., 2007; Whittington & Mack, 2010). All of these aspects of wilderness-based programs create opportunities create an authentic context in which relationships can develop between youth and nonfamilial adults, such as mentors, as well as promote PYD.

Method

This study utilized a pretest, posttest, and 90-day posttest design to assess the impact of a wilderness-based program on developmental assets. A convenience sample of all adolescent program participants was selected based on the following criteria: (a) they completed all three phases of the program, (b) they consented to the research study, and (c) they completed both the pretest and posttest assessments. Due to the limitations posed by Biglan, Ary, and Wagennar (2000), a control group was not deemed feasible for this study, in part because of the lack of a wait-list for the wilderness-based program.

Program

The program from which the sample for this study was drawn is the Relate Expedition, a weeklong wilderness program for underresourced teens led by Big City Mountaineers (BCM) in several different regions of the United States. BCM provides wilderness opportunities to underresourced urban teens aged 13 to 18 years and cultivates relationships between teens and caring adult mentors who serve as one-on-one volunteers during the wilderness program. This unique 1-to-1 ratio of adults to teens in the context of a wilderness expedition was created to increase developmental assets in the youth participants by providing *both* outdoor experiential opportunities and positive, caring adult relationships. Program activities during the wilderness expedition include backpacking, hiking, camping, and canoeing, as well as small group activities that promote teamwork, communication and problem-solving skills, all of which may contribute to PYD. The expeditions include three distinct phases: pre-expedition, wilderness phase, and post-expedition. Pre-expedition is a time for youth and families, adult mentors and staff to meet and orient themselves to one another and the program. Volunteer adult mentors are recruited from the community and attend an informational session, undergo background checks and mentor training before interacting with youth. They are expected to have some level of physical fitness and prior experience in an outdoor setting so they can serve as competent, positive role models for youth. The wilderness phase is the 7- to 8-day expedition in which youth, adult mentors and staff travel through the backcountry together via backpacking or canoeing. The post-expedition is a time for youth to reflect on the wilderness phase and transfer the lessons learned in the wilderness back home, and includes opportunities for follow-up between mentors and youth.

Participants

The 2010 BCM DAP pre- and post-program survey results were returned by 159 teens ($N = 159$). These teens were 37.7% Hispanic, 24.5% African American, 11.3% Asian, 8.8% Caucasian, 2.5% Native American, 1.9% Middle Eastern/North African, and 9.4% Other/Mixed ethnicity. The teens ranged in age from 13 to 22 with an average age of 15.97 years, and the sample was 56.6% male and 42.1% female. While 18.2% of participants' parent/guardian education levels were "unknown," only 37.1% of the sample responded as having parents/guardians with a high school diploma, while only 20.1% reported parents/guardian's who attended 2- or 4-year colleges. Though our study did not track the following demographics, according to overall program data, BCM (2012) also report that many of their youth face multiple risk factors, evidenced by the statistics below:

- 71% are from single-parent or guardian-led households;
- 83% are from families living below the poverty line;
- 62% have never traveled beyond their county of residence.

This study only surveyed the youth participating in the program; as such, demographics for the adult volunteer mentors were not collected.

Measures

To assess the impact of BCM's Relate Expedition on PYD, this study analyzed pre-to-post-to-90 days posttest data using the SI's (2012a) 40 Developmental Assets Profile (DAP). The DAP is a quantitative survey that is appropriate for youth in Grades 6 to 12 and measures all eight asset categories (Support, Empowerment, Boundaries and Expectations, Constructive Use of Time, Commitment to Learning, Positive Values, Social Competencies, and Positive Identity). For a more detailed description of how the DAP operationalizes each of these assets, see Benson (2007). The DAP is a reliable and valid measurement of these assets, and has been normed on an adolescent population in numerous studies (Haggerty, Elgin, & Woolley, 2011; SI, 2012a). Furthermore, the DAP is a strengths-focused assessment tool with strong psychometric properties (Haggerty et al., 2011).

Data Collection and Analysis

This study was approved by the Institutional Review Board (IRB) at Texas State University, and all youth participants provided assent, but also gained parent/guardian consent to participate in the study. All data were coded anonymously so that participants' identifying data was protected. Participants completed the Developmental Assets Profile 1 week prior to the wilderness expedition at the Pre-Expedition meeting, on the final day of the expedition and approximately 90 days post-program. Postprogram surveys were mailed out 90 days post-program to participants who were provided with a self-addressed, stamped envelope in which to mail back the survey. Survey responses were categorized on an Excel spread sheet and then converted into SPSS files. Out of the initial sample of 159 participants, 158 (99.4%) completed the first posttest and 60 completed some/all of the 90-day posttest (37.7% response rate). Statistical analysis of data via SPSS tested for significant mean differences and comparisons utilizing *independent* and *paired* samples *t* tests and ANOVAs.

Results

The results of the DAP surveys consistently showed that BCM had a positive impact on Internal and External Assets, with statistically significant changes in all eight Internal and External Assets pre-to posttest, as well as continued improvement in mean scores from pre-to-post to 90-day posttests ($p \leq .001$). While all assets increased at a statistically significant level, some assets increased more than others. This is important information for programs to consider to determine what specific assets that the program is developing. Results reveal the largest increases for the assets of Positive Identity, Use of Time, and Learning. The smallest increase was seen for Boundaries.

Table 1. Paired Sample *t* Tests of Pre–Post Increases in Assets for Males and Females.

	Mean difference	*SE* Mean	Significance
Males-support pre–post	−2.73	0.76	***
Females-support pre–post	−1.83	0.64	**
Males-empowerment pre–post	−2.38	0.88	**
Females-empowerment pre–post	−1.54	0.81	*ns*
Males-boundaries pre–post	−2.49	0.79	**
Females-boundaries pre–post	−0.52	0.90	*ns*
Males-use of time pre–post	−4.11	1.09	***
Females-use of time pre–post	−3.75	1.15	**
Males-learning pre–post	−3.83	0.78	***
Females-learning pre–post	−1.75	0.86	*
Males-positive values pre–post	−4.21	0.76	***
Females-positive values pre–post	−0.94	0.69	*ns*
Males-social competency pre–post	−3.85	0.81	***
Females-social competency pre–post	−1.41	0.87	*ns*
Males-positive identity pre–post	−4.00	0.94	***
Females-positive identity pre–post	−5.31	1.01	***

Note. ns = not statistically significant.
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$ (statistically significant improvements).

The follow-up DAP survey results collected 90 days post-program were only returned by approximately 25% to 30% of participants; however, even 90 days after the program, there was statistically significant overall improvement in Internal and External Asset scores from the pretest scores. Likewise, the DAP survey results also showed that internal and external asset posttest scores increased slightly 90 days post-program, though not at a statistically significant rate. Still, we do not see assets decreasing, but rather increasing, 3 months after the program ended, which is hopeful.

Results also reveal that BCM programming tends to increase assets in most categories in both males and females. Table 1 shows that males had statistically significant changes in all asset categories, and females had statistically significant changes in Support, Constructive Use of Time, Commitment to Learning, and Positive Identity.

The results show that males fared a bit better than females, especially in improvements in internal assets. These differences were statistically significant in internal assets overall and in Positive Identity, Positive Values, and Social Competencies (see Table 2).

Table 3 shows the racial and ethnic differences that were also present in the findings of this study. Hispanic teens increased in all asset categories at a statistically significant level; whereas, African American teens showed statistically significant improvements after their BCM trips in two asset categories (Commitment to Learning and Positive Identity).

Table 2. Comparison of Asset Change for Males and Females (Independent Samples *t* Tests).

	Mean difference males–females	*SE* difference	Significance
Internal pre–post	−9.53	3.69	**
External pre–post	−2.56	4.46	*ns*
Support pre–post	−0.91	1.05	*ns*
Empowerment pre–post	−0.85	1.19	*ns*
Boundaries pre–post	−1.97	1.20	*ns*
Use of time pre–post	−0.36	1.59	*ns*
Learning pre–post	−2.08	1.16	*ns*
Positive values pre–post	−3.28	1.02	**
Social competency pre–post	−2.55	1.05	*
Positive identity pre–post	1.31	1.38	*ns*

Note. ns = not statistically significant.
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$ (statistically significant improvements).

Table 3. Paired Sample *t* Tests of Pre–Post Increases in Assets for Hispanic and African American Youth.

	Mean difference	*SE* mean	Significance
Hispanics support pre–post	−4.26	0.89	***
African Americans-support pre–post	−0.89	0.64	*ns*
Hispanics empowerment pre–post	−3.86	0.89	***
African Americans empowerment pre–post	0.74	0.81	*ns*
Hispanics boundaries pre–post	−3.72	0.93	***
African Americans boundaries pre–post	0.00	0.90	*ns*
Hispanics use of time pre–post	−6.21	1.38	***
African Americans use of time pre–post	−1.00	1.15	*ns*
Hispanics learning pre–post	−3.87	1.14	***
African Americans learning pre–post	−2.37	0.86	*
Hispanics positive values pre–post	−5.91	0.82	***
African Americans positive values pre–post	−2.05	0.69	*ns*
Hispanics social competency pre–post	−4.81	1.00	***
African Americans social competency pre–post	−0.11	0.87	*ns*
Hispanics positive identity pre–post	−5.60	0.99	***
African Americans positive identity pre–post	−3.18	1.01	*

Note. ns = not statistically significant.
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$ (statistically significant improvements).

Table 4. Comparison of Asset Change for Hispanic and African American Youth (Independent Samples *t* Tests).

	Mean difference Hispanic-AA	*SE* difference	Significance
Internal pre–post	−9.18	5.56	*ns*
External pre–post	−16.65	6.04	**
Support pre–post	−3.37	1.21	**
Empowerment pre–post	−4.60	1.69	**
Boundaries pre–post	−3.73	1.56	*
Use of time pre–post	−5.21	2.13	**
Learning pre–post	−1.50	1.59	*ns*
Positive values pre–post	−1.96	1.54	*ns*
Social competency pre–post	−3.61	1.73	*
Positive identity pre–post	2.42	1.62	*ns*

Note. ns = not statistically significant.
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$ (statistically significant improvements).

Overall, Hispanic teens showed more improvement than African American teens, with statistically significant differences mainly in External Assets, but specifically in the categories of Support, Empowerment, Boundaries, Constructive Use of Time, and Social Competencies (Table 4).

Discussion

The results of the DAP surveys consistently show that BCM's Relate Expedition has a positive impact on both Internal and External Assets, even across gender and race/ethnicity. These are important findings, given that the Relate Expedition is a brief "intervention," including pre-expedition, wilderness phase, and post-expedition. Though the program encourages follow-up between mentors and youth, the program has not traditionally offered formal follow-up for participants. Despite this, the Relate Expedition has had an impact on both types of developmental assets in the past (BCM, 2008), as well as in this study.

Based on Thurber et al.'s (2007) study that showed that wilderness and adventure programs increase positive identity, social skills, physical and cognitive skills, and positive values, we would expect to see increases in internal assets in this study. However, it is the change in external assets that is most striking. Unlike past research conducted by BCM (2008), the mean scores continually improved in the realm of external assets: Support, Empowerment, Boundaries and Expectations, and Constructive Use of Time. This could be due to improvements in follow-up, such as phone calls, emails and social media contact between mentors/youth, and post-expedition dinners or hikes (BCM, 2012). Some BCM hubs have organized follow-up outings during which mentors and youth can reconnect, and mentors are also encouraged to continue the correspondence and relationship on their own (BCM). This type of follow-up programming allows for

the wilderness phase of the program to continue to positively impact community life, and is a critical element in any wilderness program for youth (Kaplan, 1979). It also facilitates the movement beyond youth programs and situates PYD efforts within the larger collaborative effort of creating caring communities in which "members of all generations are asset-builders" (Lerner, 2005, p. 46).

The findings of this study also provide compelling evidence that wilderness and adventure programs can foster both internal *and* external developmental assets in diverse youth who are facing obstacles that are considered risks to positive development. Given that most wilderness-based programs target Caucasian youth (Bandoroff & Scherer, 1994; Russell, Gillis, & Lewis, 2008; Wilson & Lipsey, 2000), this study provides important empirical support for wilderness programming with Hispanic and African American youth as well. Though this study cannot account for the differences in outcomes between Hispanic and African American youth, both groups demonstrated significant gains in both internal and external assets. This is especially true in the areas of Positive Identity, Constructive Use of Time, and Social Competencies—three asset categories that exemplify not only prosocial behavior and empathy, but also a positive view of oneself. This type of program influences not only how young adults make choices but also how a young person sees him or herself, which may impact their emotional stability, how they build relationships, and develop a sense of future (Hay & Ashman, 2003).

In a review of research findings on evaluations of PYD programs, there were few studies that revealed statistically significant gender differences in PYD outcomes (Catalano et al., 2004); however, this study revealed that males had statistically significantly better outcomes in overall internal asset categories, specifically, Social Competencies and Positive Values. While this study cannot provide a rationale for these differences, it is interesting to note that wilderness-based programs have been historically structured for boys (Warren, 1996). One has to wonder whether more gender sensitivity could be incorporated in wilderness-based programs in order to equalize the PYD effects on both girls and boys. Though this is only one such study, more gender-based research is needed in youth development and outdoor and adventure education. Despite these gender differences, however, males and females in this study both had significant improvements in asset categories over time.

The overall findings in this study indicate that this type of PYD programming can play a key role in addressing the needs of underserved youth of both genders through a new type of "wilderness-based youth development program" that pairs adult mentors with youth one-on-one in the context of wilderness expeditions. This combination provides an authentic context in which mentors and youth can form meaningful relationships and build life skills. According to Vance (2012),

> Authentic activities are challenging for youth and connect to real life experiences . . . Skill building activities are those that provide opportunities for youth to hone or develop new skills. Activities that broaden horizons expose young people to new experiences, people, places and ideas. (p. 42)

Given the unfamiliar natural environment, the new context of challenge and adventure activities, wilderness-based programs may provide new experiences, people, places, and ideas more than other types of youth activities. This has deep implications for youth development research, practice, and programming, as this type of programming may prove to be a viable and replicable program model that provides both the personal growth experiences and positive relationships necessary to foster PYD.

Limitations

Though this study demonstrated positive outcomes, there are several limitations that must be addressed. The Developmental Assets Profile gathers information based on adolescent self-report, which certainly has its limits (Smith, Pelham, Gnagy, Molina, & Evans, 2000). Furthermore, utilizing the same measurement in pretest and posttest, post-90 days format subjects the results to test–retest bias. The low response rate 90-days post-program is also a limitation. Furthermore, this study only examines outcome variables and does not effectively isolate process variables or program fidelity. Hence, we do not know whether it is the power of the wilderness experience or the power of having adult mentors participate and support youth before during and after the wilderness experience. To determine which process variables are most connected to PYD outcomes, a control group would be needed. Likewise, higher level statistical modeling could yield more predictive information about the development of specific asset categories in relation to moderating variables.

Summary

The results of the DAP surveys consistently show that BCM's Relate Expedition has a positive impact on Internal and External Assets, with statistically significant changes in Internal and External Assets pre- to posttest. Findings also show continued improvement in mean scores from pre-to-post to 90-day posttests. BCM programming tends to increase assets in most categories in both males and females, though males tend to fare a bit better than females, especially in improvements in internal assets. Overall, Hispanic teens increased in more asset categories than African American teens, with statistically significant differences occurring in the category of Social Competencies. These findings reiterate Lerner and Theokas' (2012) summary of Scales, Benson, Leffert, and Blyth's (2000) research, which found,

> Time spent in youth programs was the developmental asset that appeared to have the most pervasive positive influence . . . predicting . . . thriving outcomes . . . Good youth programs provide young people with access to caring adults and responsible peers, as well as skill-building activities than can reinforce the values and skills that are associated with doing well in school and maintaining good physical health. (p. 10)

Clearly, there is a need for more research and theory building on the impact of wilderness-based programs on PYD, especially as it pertains to specific program

components like mentoring. Despite the need for further research in this area, it seems clear that wilderness-based PYD programs can be a powerful tool for enhancing developmental assets in youth.

Declaration of Conflicting Interests

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