

Abstracts from the Coalition for Education in the Outdoors Twelfth Biennial Research Symposium

Held at

Indiana University's Outdoor Center
Martinsville, Indiana
January 10-12, 2014

Compiled by

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Coalition for Education in the Outdoors

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Preface

Welcome to the 12th Biennial Coalition for Education in the Outdoors Research Symposium. Whether you are using this compilation as an attendee or reading it after the event, we are glad to include you in the work of the Coalition and to brief you about CEO and some exciting things that lie ahead.

The Coalition for Education in the Outdoors (CEO) is a network of organizations, businesses, institutions, centers, agencies, and associations linked and communicating in support of the broad purpose of education in, for, and about the outdoors. The Coalition was established in 1987 at the State University of New York at Cortland by a group of outdoor educators from around the country.

The founders of CEO envisioned it could play an important role in addressing the research needs of the field. In its early years, CEO formed a research committee, which led to the organization of these biennial research symposia and the refereed publication, *Research in Outdoor Education*. Indiana University's Bradford Woods was chosen as the site of the first symposium in 1992 and every one since then.

Twenty years later, the CEO Research Symposium has more than doubled in attendance and in the number of papers presented. Fortunately, the event is still not too large and retains the informal and highly interactive atmosphere that people valued from the start. It attracts scholars and practitioners from a wide variety of academic disciplines and outdoor education professional settings. The purpose has remained the same.

The aim of the CEO Biennial Research Symposium is to assist outdoor educators in advancing the philosophical, theoretical, and empirical bases of outdoor education. It does so in several ways. First, the symposium enables scholars to present their work to one another and, through this book of abstracts and *Research in Outdoor Education*, to others in the field. Second, the symposium fosters conversation and builds a sense of community among researchers in outdoor education. Many on-going research partnerships were formed at a CEO symposium. Third, the symposium provides a forum to address areas of new or ongoing concern to researchers and scholars in outdoor education.

This symposium coincides with the formation of a new partnership between CEO and Sagamore Publishing. Sagamore is a major publisher of books and journals in recreation, parks, tourism, therapeutic recreation, sport management, and outdoor education. We are honored that Sagamore has chosen CEO publications, *Taproot* and *Research in Outdoor Education (ROE)*, as their professional and research journals of outdoor education. The immediate goal is to move *ROE* from being a biennial publication to becoming a journal published twice a year. The partnership should greatly expand the audience for CEO publications. We anticipate that many of the studies abstracted in this compilation will be among the articles appearing in the upcoming issues of *ROE*. Instructions for submitting to *ROE* will be provided at the symposium and available through the CEO and Sagamore websites.

We owe thanks to many people who make this event possible. The CEO Research Committee and the authors, all listed later, are the ones who bring this program to life. Andrew Bobilya, Montreat College, Ryan Howard, Brock University, and Karen Paisley, University of Utah, helped greatly in the initial stages of putting the program together. Keith Russell, Western Washington University, did yeoman's work in coordinating the reviews of abstracts. Shay Dawson and his staff at Bradford Woods make getting there and being there so comfortable. Special thanks go to Tim Street, whose work with this event began months before our arrival. Bradford Woods is an extension of the Department of Recreation, Park, and Tourism Studies at Indiana University. We thank that department and its chair, Bryan McCormick, for their continued support of Bradford Woods and the CEO Research Symposium. They generously host our evening socials. Three publishers, Sagamore, Human Kinetics, and Venture, have donated books for our raffle, the proceeds of which fund scholarships for graduate-student authors of outstanding research presented at the symposium. Finally, our thanks go to SUNY Cortland President, Erik Bitterbaum, and Provost, Mark Prus, for their continued support of the Coalition for Education in the Outdoors and to Charles Yapple, who keeps it going.

Sharon Todd and Anderson Young
For the CEO Research Committee

Coalition for Education in the Outdoors Research Committee

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American Camp Association

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Michael Gass
University of New Hampshire

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*Emeritus Committee Members

Table of Contents

Preface	2
CEO Research Committee	3
Table of Contents	4
Symposium Schedule of Events.....	6
 Research Presentation Session I	
Social Climate and Peer Interaction on Wilderness Courses.....	9
Benjamin Mirkin, Lyndon State College	
A Multilevel Model of the Influence of Leadership Consideration and Goal Conflict on Group Cohesion.....	12
Jeremy Jostad and Jim Sibthorp, University of Utah; Mandy Pohja and John Gookin, The National Outdoor Leadership School	
Situational Leadership of Outdoor Pursuits Trip Leaders: Self-Perceptions vs. Others' Perceptions of Dominant Styles, Adaptability, and Appropriate Style Choices.....	15
Sharon L. Todd ¹ , Anderson Young ¹ , Timothy O'Connell ² , Garrett Hutson ² , Lynn Anderson ¹ , and Mary Breunig ² ¹ SUNY Cortland and ² Brock University	
 Poster Session and Evening Social	
Reading and Writing and Boys' Camp: Lessons for Schools and Camps.....	18
Lauren Arend and Mary Rogers, Saint Louis University	
Measuring Outcomes of Girls' Participation: Creating Statistically Tested Scales.....	21
Anja Whittington and Jeffery Aspelmeier, Radford University; Nadine Budbill, Vermont Works for Women	
Examining How a Wilderness Experience Might Influence At-risk Youths' Alcohol, Tobacco and Other Drugs Attitudes and Behaviors (a pilot study).....	24
LisaMarie P Miramontes, Prevention Research Center	
Management Trends in the Delivery of Outdoor Education Programs for Persons with Mental Impairments.....	26
Alison Voight, Indiana University	
Measuring Youth Development Outcomes of Camp and a Camp-Themed After-School Program.....	29
Shaina Stewart and Kendra Liddicoat, University of Wisconsin-Stevens Point	
 Research Presentation Session II	
The Outdoor Orientation Benchmarking Survey.....	32
Brent Bell and Christopher Nafziger, University of New Hampshire	
A Moderational Analyses of Change in Participants' Biophilic Expressions Following an Outdoor Orientation Program.....	35
Nathan Meltzer ¹ , W. Brad Faircloth ² , Andrew Bolilya ² and Denise Mitten ¹ ¹ Prescott College and ² Montreat College	
Relationship Between Outdoor Experience and Body Image in Female College Students.....	38
Chiara D'Amore and Denise Mitten, Prescott College	
The Perceived Significant Life Experience of a University Outdoor Education Course: Quantitative Findings.....	41
Jennifer Wigglesworth, Queen's University and Paul Heintzman, University of Ottawa	

Research Presentation Session III

Growing Girls' Leadership through Outdoor Programming: Findings about What Matters from Girl Scouts of the U.S.A..... 44
Kallen E. Tsikalas, Girl Scout Research Institute, NY, NY and Karyn L. Martin, Girl Scouts of Eastern Massachusetts

Participant Profiles, Antecedent Predictors, and Developmental Outcomes of Rural Youth Involvement in Outdoor Activities throughout Adolescence: A Longitudinal Study..... 48
Jayson Seaman, Erin Sharp and Sean McLaughlin, Corinna Tucker, Karen VanGundy, and Cesar Rebellon, University of New Hampshire

Evaluation of the Hero's Journey Adventure Program for Adolescents with Serious Illness..... 51
Ann Gillard and Matthew Cook, The Hole In The Wall Gang Camp

Outdoor Education Outcomes of Young Cancer Survivors and Fighters Experiences..... 54
Marni Goldenberg and Liz Gill, California Polytechnic State University
San Luis Obispo, Trevor Waage and Karen Paisley, University of Utah;
John Gookin, The National Outdoor Leadership School

Research Presentation Session IV

Creativity and Divergent Thinking in Outdoor Adventure Education..... 56
Dan Richmond, Rachel Collins and Jim Sibthorp, University of Utah;
Mandy Pohja and John Gookin, The National Outdoor Leadership School

Examining Adventure and Mindfulness and Their Relation to Outcome in Adventure Therapy..... 60
Keith Russell, Western Washington University; Whitney L. Heppner and Lee Gillis, Georgia College

Natural Environments and Stress: Mitigation of Cortisol through Visitation to an Outdoor Setting..... 63
Alan Ewert, Jim Klaunig, Zemin Wang and Seann Conklin, Indiana University

Backcountry Energy Needs 2.0..... 66
Mandy Pohja and John Gookin, The National Outdoor Leadership School

Research Presentation Session V

Exploring Profound Place Relationships: The Extension of Place Attachment to Place Allegiance..... 69
Ryan Howard, Brock University

Developing Familial Relationships through Adventure Experiences..... 72
Jill Overholt, Warren Wilson College

Teach Your Children Well: The Role of Parental Socialization in the Transformation of Children's Play in Wild Nature..... 75
Penny A. James, Karla A. Henderson, and Aram Attarian, North Carolina State University

Green Relationships Model: Toward a Conceptual Framework Detailing the Impact of Green Exercise on Relationship Satisfaction..... 78
Matthew Miller, University of Minnesota

Coalition for Education in the Outdoors

Twelfth Biennial Research Symposium at

Bradford Woods

Indiana University's Outdoor Center

SCHEDULE OF EVENTS

2:00 Check-in at Bradford Woods – *Bradford Manor*

Note: Shuttle service is available between the residence areas (Bradford Manor, Agape Lodge, and Baxter Village Cabins) and the meeting and dining areas (Carr Center and Baxter Dining Hall).

3:00 Meet and Greet - *Carr Center*

4:15 Opening Session – *Carr Center*

Words of welcome	Sharon Todd, CEO Research Committee Bryan McCormick, Indiana University Shay Dawson, Bradford Woods
Logistics	Tim Street, Bradford Woods
Symposium Overview	Sharon Todd

5:30 Dinner - *Baxter Dining Hall*

6:40 Featured Topic: Human Development in Outdoor Education - *Carr Center*
John Gookin and Mandy Pohja, The National Outdoor Leadership School

Following a NOLS-hosted research retreat earlier in the day, we will share our discussion around developmentally appropriate needs for different age groups in outdoor education. If possible, we will also offer suggested metrics for measuring developmental growth.

7:30 Issues and Challenges: Setting Our Agendas at CEO - *Carr Center*
Facilitators: CEO Research Committee

7:40 Research Presentation Session I – *Carr Center*
Presider: Kendra Liddicoat, University of Wisconsin- Stevens Point

Each research-presentation session features several papers and ample time for discussion. These sessions, like the entire symposium, are intended to be highly constructive and interactive. Each presenter is allotted 20 minutes and asked to reserve about 5 minutes for discussion. The schedule permits additional discussion of the papers and their implications before adjournment.

7:45 Social Climate and Peer Interaction on Wilderness Courses
Benjamin Mirkin, Lyndon State College

8:05 A Multilevel Model of the Influence of Leadership Consideration and Goal Conflict on Group Cohesion
Jeremy Jostad and Jim Sibthorp, University of Utah; Mandy Pohja and John Gookin, The National Outdoor Leadership School

Friday, January 10, 2014 (Research Presentation Session I - continued)

- 8:25 **Situational Leadership of Outdoor Pursuits Trip Leaders: Self-Perceptions vs. Others' Perceptions of Dominant Styles, Adaptability, and Appropriate Style Choices**
Sharon L. Todd¹, Anderson Young¹, Timothy O'Connell², Garrett Hutson², Lynn Anderson¹, and Mary Breunig²
¹SUNY Cortland and ²Brock University
- 8:45 General Discussion
- 8:55 **Poster Session and Evening Social – *Baxter Dining Hall***
- Reading and Writing and Boys' Camp: Lessons for Schools and Camps**
Lauren Arend and Mary Rogers, Saint Louis University
- Measuring Outcomes of Girls' Participation: Creating Statistically Tested Scales**
Anja Whittington and Jeffery Aspelmeier, Radford University; Nadine Budbill, Vermont Works for Women
- Examining How a Wilderness Experience Might Influence At-risk Youths' Alcohol, Tobacco and Other Drugs Attitudes and Behaviors (a pilot study)**
LisaMarie P Miramontes, Prevention Research Center
- Management Trends in the Delivery of Outdoor Education Programs for Persons with Mental Impairments**
Alison Voight, Indiana University
- Measuring Youth Development Outcomes of Camp and a Camp-Themed After-School Program**
Shiana Stewart and Kendra Liddicoat, University of Wisconsin-Stevens Point

Saturday, January 11, 2013

- 7:30 Breakfast – *Baxter Dining Hall*
- 8:25 **Research Presentation Session II – *Carr Center***
Presider: Garrett Hutson, Brock University
- 8:30 **The Outdoor Orientation Benchmarking Survey**
Brent Bell and Christopher Nafziger, University of New Hampshire
- 8:50 **A Moderational Analyses of Change in Participants' Biophilic Expressions Following an Outdoor Orientation Program**
Nathan Meltzer¹, W. Brad Faircloth², Andrew Bolilya² and Denise Mitten¹
¹Prescott College and ²Montreat College
- 9:10 **Relationship between Outdoor Experience and Body Image in Female College Students**
Chiara D'Amore and Denise Mitten, Prescott College
- 9:30 **The Perceived Significant Life Experience of a University Outdoor Education Course: Quantitative Findings**
Jennifer Wigglesworth Queen's University and Paul Heintzman, University of Ottawa
- 9:50 General Discussion
- 10:00 Refreshment Break
- 10:20 **Research Presentation Session III – *Carr Center***
Presider: Jill Overholt, Warren Wilson College
- 10:25 **Growing Girls' Leadership through Outdoor Programming: Findings about What Matters from Girl Scouts of the U.S.A.**
Kallen E. Tsikalas, Girl Scout Research Institute, NY, NY and Karyn L. Martin, Girl Scouts of Eastern Massachusetts
- 10:45 **Participant Profiles, Antecedent Predictors, and Developmental Outcomes of Rural Youth Involvement in Outdoor Activities throughout Adolescence: A Longitudinal Study**
Jayson Seaman, Erin Sharp and Sean McLaughlin, University of New Hampshire
- 11:05 **Evaluation of the Hero's Journey Adventure Program for Adolescents with Serious Illness**
Ann Gillard and Matthew Cook, The Hole in the Wall Gang Camp
- 11:25 **Outdoor Education Outcomes of Young Cancer Survivors and Fighters Experiences**
Marni Goldenberg and Liz Gill, California Polytechnic State University San Luis Obispo
- Trever Waage and Karen Paisley, University of Utah; John Gookin, The National Outdoor Leadership School
- 11:45 General Discussion

Saturday, January 11, 2013

- 12:00 Lunch and Free Time – *Baxter Dining Hall*
- 1:25 Research Presentation Session IV – *Carr Center*
Presider: Marni Goldenberg, California Polytechnic State University San Luis Obispo
- 1:30 Creativity and Divergent Thinking in Outdoor Adventure Education
Dan Richmond, Rachel Collins and Jim Sibthorp, University of Utah; Mandy Pohja and John Gookin, The National Outdoor Leadership School
- 1:50 Examining Adventure and Mindfulness and Their Relation to Outcome in Adventure Therapy
Keith Russell, Western Washington University; Whitney L. Heppner and Lee Gillis, Georgia College
- 2:10 Natural Environments and Stress: Mitigation of Cortisol through Visitation to an Outdoor Setting
Alan Ewert, Jim Klaunig, Zemin Wang and Seann Conklin, Indiana University
- 2:30 Backcountry Energy Needs 2.0
Mandy Pohja and John Gookin, The National Outdoor Leadership School
- 2:50 General Discussion
- 3:00 Refreshment Break - *Baxter Dining Hall*
- 3:15 Breakout Group Discussions on Issues and Challenges in Outdoor Education – *Baxter Dining Hall and other locations*
- 4:45 Research Presentation Session V – *Carr Center*
Presider: Benjamin J. Mirkin, Lyndon State College
- 4:50 Exploring Profound Place Relationships: The Extension of Place Attachment to Place Allegiance
Ryan Howard, Brock University
- 5:10 Developing Familial Relationships through Adventure Experiences
Jill Overholt, Warren Wilson College
- 5:30 Teach Your Children Well: The Role of Parental Socialization in the Transformation of Children’s Play in Wild Nature
Penny A. James, Karla A. Henderson, and Aram Attarian, North Carolina State University
- 5:50 Green Relationships Model: Toward a Conceptual Framework Detailing the Impact of Green Exercise on Relationship Satisfaction
Matthew Miller, University of Minnesota
- 6:10 General Discussion
- 6:30 Dinner – *Baxter Dining Hall*
- 7:45 Evening Forum – *Location TBA*
Raffle Drawings
Brief highlights of afternoon breakout discussion groups
About *Research in Outdoor Education*
Symposium summary and evaluation – CEO Research Committee
- 9:00 Social – *Location TBA*
Socials sponsored by the Indiana University Department of Recreation, Park, and Tourism Studies

Sunday, January 12, 2013

Continental breakfast available from 5:00 - 8:00 a.m. – *Baxter Dining Hall*

*Thank you for being here. See you in 2016.
Travel safely.*

Social Climate and Peer Interaction on Wilderness Courses

Benjamin J. Mirkin
Lyndon State College

A primary focus of outdoor courses has long been to create positive group experiences that build social competence among members (Todd, O'Connell, Breunig, Young, Anderson, & Anderson, 2008; Walsh & Golins, 1976). Broader educational research suggests that developing social competence creates a positive orientation toward the social world that spurs adaptive beliefs and behaviors that facilitate adjustment in a variety of contexts (Mouratidis & Michou, 2011; Ryan & Shim, 2006, 2008). This research also strongly shows that individuals' motivations are influenced by elements of the classroom climate (Patrick, Ryan, & Kaplan, 2007). In contrast, it is not well understood how various contextual features like social climate interact with and influence individual's social motivations and outcomes on outdoor courses, even though these are often crucial claims of program effectiveness. Better understanding how the social climate on wilderness expedition courses relates to youths' social motivations could therefore improve programs abilities to facilitate more adaptive forms of peer interaction.

The current study explored how adolescents' perception of the social climate on wilderness expedition courses related to changes in how they approached peer interactions. This research contributes to knowledge of how the social climate on outdoor education courses facilitates adaptive shifts in social motivations for youth.

Conceptual Framework

Peer interactions were investigated in this study through students' *social achievement goals* for their relationships. Social achievement goal theory derives from the larger framework of achievement goal theory (Ames, 1992), which focuses on the types of goals individuals pursue and views behavior as intentionally focused toward the attainment of certain goals (Meece, Anderman, & Anderman, 2006). Applied to the social domain, it is believed that some individuals are motivated to *develop* relations with others, while others seek to *demonstrate* their social competence in order to obtain status or avoid rejection (Ryan & Shim, 2006, 2008). Adoption of one or the other may determine how individuals interact with their peers (Mouratidis & Sideridis, 2009). Moreover, because of the influence of 'climate' on students' social goals, the design of educational environments ideally should emphasize *development* rather than *demonstration* goals. In an outdoor education context, 'the group' constitutes a significant element of the climate in which social goals are fostered.

The aim of this research was to examine relationships between participants' perception of the social climate on extended wilderness courses and any changes in their social motivations. The practical aim was to identify practices and elements of the social climate that best foster *social development goals*, as these are more desirable than the less adaptive *demonstration* goals. This knowledge can inform effective program design and help establish appropriate social climates in various youth settings.

Method

Participants. This sample consisted of 251 students in 45 separate NOLS courses that occurred during the summer of 2012 in the Rocky Mountain Region, the Pacific Northwest, and Alaska. Courses had a mean duration of 28.6 days, students' ages ranged from 14 – 20, with a mean age of 17.43, 150 of these students were male, with 101 female participants.

Measures. Participants were sent a pretest using Ryan and Shim's (2006) Social Achievement Goals (SAG) survey assessing social goal orientation. To assess participants'

experience of the social climate and the potential changes in social achievement goals, participants post-course were given the Group Environment Scale (GES) (Moos, 2002) along with the SAG survey. Multi-level modeling was then used to analyze the relationship of social climate to peer interaction.

Results

Social development goals. The average trip-level change in social development goal orientation score was $-.11$ ($p < .05$), meaning contrary to expectations, the average course level social development goal orientation change score had a decrease of $.11$ from pre to post course, and, the average change in social development goal orientation was not systematically different across courses. Essentially, there was a significant average decrease in change of social achievement goal orientation score and no significant variability across courses. This means, on average, participants social development scores declined similarly across all 45 courses. However, the fact the within-course random effect was statistically significant means variability may be understood using individual level predictors.

Social climate. The best fit model of individual predictors of perceptions of the social climate contained individual perception of cohesion and task orientation, which positively related to increased social development goal orientation change scores, as well as perceived leader control which was negatively related. According to this model, courses where students had (a) higher perceptions of group cohesion and task orientation combined with (b) lower perceptions of leader control were more likely to have higher positive changes in their social development goal orientations.

Discussion

The findings here indicate universal claims about high quality outdoor education courses promoting interpersonal development deserve some refinement and should be made cautiously. In this study, the beneficial social growth might be anticipated as a result of outdoor adventure education courses did not uniformly occur. Instead, multilevel modeling revealed key elements of social climate – namely group cohesion, task orientation, and leader control – should be adjusted in order to achieve these outcomes more consistently.

It is also important to interpret findings in their organizational context. NOLS has historically aimed at training future outdoor leaders and conservation advocates. At present time NOLS is also running general courses for adolescents. It cannot be assumed, however, that youth participants in outdoor courses are looking to become outdoor instructors; instead, they may simply be seeking and exciting and growthful experiences. Meanwhile, parents might be seeking more general developmental outcomes. Achieving outcomes such as helping youth develop more adaptive social orientations might require a shift from historical emphases and practices. For instance, the manner in which the social climate is constructed and maintained may not be as appropriate for youth as it is for adults, who are likely more focused on learning the technical competencies as an end in themselves as opposed to younger participants who might view the ‘adventure’ skills as simply a means to making new friends and learning more about themselves.

It appears that what is emphasized by an organization does make differences in what outcomes are achieved (Costello, Toles, Spielberger, & Wynn, 2001). Importantly, NOLS does not presently purport to emphasize group cohesion and clearly states as their primary goals teaching wilderness skills and leadership. But, evidence from this study shows that when NOLS instructors emphasized a combination of group cohesion, tasks, and low levels of control, courses were more supportive of adaptive changes in student social motivation, and do not appear to have compromised NOLS’s core mission. On the one hand, the lack of variability

between courses shows consistency in how NOLS realizes its mission, but on the other hand, the social aspects of these courses may be further expanded so as to maximize their general developmental benefit for youth.

References

- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*, 261 - 271.
- Costello, J., Toles, M., Spielberger, J., & Wynn, J. (2001). History, ideology, and structures that shape youth. In P. L. B. K. J. Pittman (Ed.), *Trends in Youth Development: Visions, Realities and Challenges* (pp. 191-230). Chapin Hall Center for Children, University of Chicago: Klumer Academic Publishers.
- Meece, J. L., Anderman, E. M., & Anderman, L. H. (2006). Classroom goal structure, student motivation, and academic achievement. *Annual Review of Psychology, 57*(1), 487-503.
- Moos, R. H. (2002). *A Social Climate Scale; Group Environment Scale Manual; Development, Applications, Research* (Third ed.). Redwood City, CA: Mind Garden, Inc.
- Mouratidis, A., & Michou, A. (2011). Self-determined motivation and social achievement goals in children's emotions. *Educational Psychology, 31*(1), 67-86.
- Mouratidis, A. A., & Sideridis, G. D. (2009). On social achievement goals: Their relations with peer acceptance, classroom belongingness, and perceptions of loneliness. *Journal of Experimental Education, 77*(3), 285-308.
- Patrick, H., Ryan, A. M., & Kaplan, A. (2007). Early adolescents' perception of the classroom social environment, motivational beliefs, and engagement. *Journal of Educational Psychology, 99*(1), 83-98.
- Ryan, A. M., & Shim, S. S. (2006). Social achievement goals: The nature and consequences of different orientations toward social competence. *Personality and Social Psychology Bulletin, 32*, 1246 - 1265.
- Ryan, A. M., & Shim, S. S. (2008). An exploration of young adolescents' social achievement goals and social adjustment in middle school. *Journal of Educational Psychology, 100*(3), 672 - 687.
- Todd, S. L., O'Connell, T., Breunig, M., Young, A., Anderson, L., & Anderson, D. (2008). *The effect of leadership style on sense of community and group cohesion in outdoor pursuit trip groups*. Paper presented at the Coalition for Education in the Outdoors Ninth Biennial Research Symposium, Bradford Woods, Indiana University's Outdoor Center, Martinsville, IN.
- Walsh, V., & Golins, G. (1976). *The exploration of the Outward Bound process*. Denver, Colorado: Colorado Outward Bound School.

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Group Cohesion in Outdoor Adventure Education: The Roles of Leadership Consideration, Goal Conflict, and Time

Jeremy Jostad & Jim Sibthorp: University of Utah

Mandy Pohja & John Gookin: The National Outdoor Leadership School

Background

Group cohesion is an important aspect of outdoor adventure education (OAE) because working in small groups is an inherent part of the experience. Adventure experiences have been shown to develop group cohesion (Glass & Benshoff, 2002), however, students' experiences and learning outcomes on such OAE courses can be negatively impacted when groups are not cohesive (McKenzie, 2003; Sibthorp, Paisley, & Gookin, 2007).

The instructor is one of the main components on an OAE course and the interpersonal interactions they have with others is highly influential (McKenzie, 2000). Leadership consideration refers to the ability of the leader to maintain close relationships with students that are characterized by concern, respect, and the expression of appreciation and support for students (Judge, Piccolo, & Ilies, 2004). Leadership consideration has been shown to positively influence team effectiveness, but needs further research on "team performance outcomes such as cohesion" (Burke et al., 2006, p. 301).

Another aspect of OAE that may influence group cohesion is goal conflict. Goal setting theory posits that challenging and specific goals will lead to improved group performance through four mechanisms; goals should direct attention, energize action, affect persistence, and lead to arousal or knowledge (Locke & Latham, 2002). However, these mechanisms may not be activated when individuals possess goal conflict, which is the difference or non-alignment of organizational/leader goals with individual based goals (Locke & Latham, 2002). Goal conflict has been shown to influence performance (Slocum, Cron, & Brown, 2002), however, it remains unclear how it affects group cohesion.

Group cohesion has been shown to increase over time due to OAE experiences (Glass & Benshoff, 2002), however, most studies use a pre-test-post-test design. The trajectory of group cohesion throughout a multi-week course is less understood. Therefore, the purpose of this study is to examine the role and importance of leadership consideration, goal conflict, and time on group cohesion among 30-day courses from the National Outdoor Leadership School (NOLS).

Methods

Data were collected from 22 groups participating in 30-day backpacking courses at the National Outdoor Leadership School (NOLS) during the summer of 2013. Groups ranged from 8-14 students ($n = 214$, age range 14 and 23 years). Group cohesion, leadership consideration, and goal conflict were measured at approximately 10, 20, and 30 days (end of the course) with a five point Likert-type scale, ranging from strongly disagree to strongly agree. Group cohesion was measured using a four item sub-scale of The Group Identification Scale (Henry, Arrow, & Carini, 1999). Leadership consideration was measured using a three item sub-scale of the Leader Behavior Description Questionnaire (LBDQ-XII; Stogdill, 1963). Goal conflict was measured with two items that were written by the authors that assessed if a student's goals were in conflict with other students on the course and their instructors.

Multilevel modeling was used as the main statistical analysis because of the ability to account for sources of statistical dependence that are inherent in the nested structure of these data (Raudenbush & Bryk, 2002). In this study a three-level model was used with time nested within individuals, who are nested within groups. The following hypotheses were tested:

- H1: Time will have a significant positive relationship with group cohesion.
H2: Goal conflict of others will have a significant negative relationship with group cohesion at the person level.
H3: Goal conflict of instructors will have a significant negative relationship with group cohesion at the person level.
H4: Leadership consideration will have a significant positive relationship with group cohesion at the group level.

Results

The first step in the analysis was to run the null model to obtain the variance components among the three levels, which showed 41% of the variance at level one, 47% of the variance at level two, and 12% of the variance at level three. These variance components substantiated the need for a three-level model. The above hypotheses were assessed with time centered on zero at level one, goal conflict with others and instructors was person-mean centered at level two, and leadership consideration was grand-mean centered at level three.

The results suggest that time had a significant negative influence on group cohesion ($p < .05$). An individual's perception of group cohesion decreased from day ten to day 30 on the course. At level two, two types of goal conflict were tested. Goal conflict with *other students* had a significant negative relationship with group cohesion ($p < .05$). Goal conflict with *instructors* also had a significant negative relationship with group cohesion ($p < .05$). As the level of goal conflict with other students and instructors increased for an individual, their perception of group cohesion decreased. The level three predictor, leadership consideration, had a significant positive relationship with group cohesion ($p < .05$). An individual's perception of group cohesion increased as their perception of leadership consideration increased.

Discussion

The purpose of this study was to examine the influence of leadership consideration, goal conflict, and time on group cohesion among 30-day OAE courses. Group cohesion is a critically important concept considering the natural and social environments of OAE (Ewert & McAvoy, 2000). While the results of this study do not support hypothesis one, it may provide further insight about group development. A slight decrease in group cohesion may not be surprising considering the first administration was at day 10 of the course. A substantial amount of development occurs at the beginning of a group's life and can set the trajectory of future performances (Hackman & Katz, 2010). The groups in this study may have already developed social norms and roles by the first administration. Furthermore, the changes that we see in group cohesion are small. Therefore, group cohesion may not increase much after day ten, or after completing one-third of the course.

Goal conflict has often been researched in association with task outcome measures and has shown that higher conflict leads to decreased performance (Slocum et al., 2002). Crane, Hattie, and Houghton (1997) specifically used an adventure experience to study the effect of goals on a course and found that lower levels of goal conflict provided higher ratings of success. Hypotheses two and three suggest that goal conflict with instructors and other students may negatively influence an individual's perception of group cohesion. Most instructors uphold the goals or mission of the program, so it may be that students sometimes have different goals than those targeted by the program. While OAE programs may have vague and unclear goals (Crane, et al., 1997), programs may need to better construct their goals to make them appear more attainable. Similarly, students also need to have clear and specific goals to which their behavior

can be oriented. In doing so, this may reduce the goal conflict students have with one another and provide a common goal that interpersonal interactions can be coordinated toward.

Instructors play a critical role in shaping and maintaining the social environment of OAE courses. When instructors build rapport with students it leads to higher levels of communication (Sibthorp, Paisley, & Gookin, 2007) and stronger interpersonal relationships with students has been shown to lead to higher levels of learning (McKenzie, 2003). The findings from this study suggest that higher levels of consideration, that is, providing support and showing care and concern for the students, may lead to a higher sense of group cohesion. This research provides further insights into the importance of the mechanisms that support positive group functioning. Further research is needed that elucidates how these different mechanisms operate together to produce positive group functioning.

References

- Burke, S.C., Stagl, K.C., Klein, C., Goodwin, G.F., Salas, E., & Halpin, S.M. (2006). What type of leadership behaviors are functional in teams? A meta-analysis. *The Leadership Quarterly*, 17, 288-307.
- Crane, D., Hattie, J., & Houghton, S. (1997). Goal setting and the adventure experience. *Australian Journal of Psychology*, 49(1), 6-13.
- Ewert, A. & McAvoy, L. (2000). The effects of wilderness settings on organized groups: A state of the knowledge paper. *USDA Forest Service Proceedings*, 3, 13-26.
- Gersick, C. (1988). Time and transition in work teams: Toward a new model of group development. *Academy of Management Journal*, 31(1), 9-41.
- Glass, J.S. & Benschoff, J.M. (2002). Facilitating group cohesion among adolescents through challenge course experiences. *Journal of Experiential Education*, 25(2), 268-277.
- Hackman, J. R., & Katz, N. (2010). Group behavior and performance. In S.T. Fiske, D.T. Gilbert, & G. Lindzey (eds.), *Handbook of Social Psychology* (pp. 1208–1251). San Francisco, CA: John Wiley & Sons, Inc.
- Henry, K.B., Arrow, H., & Carini, B. (1999). A tripartite model of group identification: Theory and measurement. *Small Group Research*, 30(5), 558-581.
- Judge, T.A., Piccolo, R.F., & Ilies, R. (2004). The forgotten ones? The validity of consideration and initiating structure in leadership research. *Journal of Applied Psychology*, 89(1), 36-51.
- Locke, E.A., & Latham, G.P. (2002). Building a practically useful theory of goal setting and task motivation. *American Psychologist*, 57(9), 705-717.
- McKenzie, M. (2000). How are adventure education program outcomes achieved?: A review of the literature. *Australian Journal of Outdoor Education*, 5(1), 19-28.
- McKenzie, M. (2003). Beyond “The Outward Bound process:” Rethinking student learning. *The Journal of Experiential Education*, 26(1), 8-23.
- Raudenbush, S.W., & Bryk, A.S. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods, Second Edition*. New York, NY: Sage Publications.
- Sibthorp, J., Paisley, K. & Gookin, J. (2007). Exploring participant development through adventure-based programming: A model from the National Outdoor Leadership School. *Leisure Sciences*, 29, 1-18.
- Slocum, J.W., Cron, W.L., & Brown, S.P. (2002). The effect of goal conflict on performance. *The Journal of Leadership and Organizational Studies*, 9(1), 77-89.
- Stogdill, R.M. (1963). *Manual for the Leader Behavior Description Questionnaire, Form XII*. Columbus, OH: Bureau of Business Research, Ohio State University.

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Situational Leadership of Outdoor Pursuits Trip Leaders: Self-Perceptions vs. Others' Perceptions of Dominant Styles, Adaptability, and Appropriate Style Choices

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Background

Members of outdoor pursuits trip groups often find themselves placed in unfamiliar and/or uncomfortable environments, faced with physical and emotional challenges, and focused on basic outdoor living skills. Given these situations, the leader of an outdoor pursuits trip group is in a unique position to influence the dynamics and performance of that group (Martin, Cashel, Wagstaff & Breunig, 2006). For example, O'Connell, Todd, Breunig, Young, Anderson, and Anderson (2009) found that leadership style impacts outdoor pursuits trip groups' sense of community and cohesion. Outdoor pursuits leadership "best practices" often suggest implementing situational models of outdoor leadership (Bass, 1990). In particular, Hersey and Blanchard's Situational Leadership Model (Hersey, Blanchard & Johnson, 1996) has been adapted for outdoor pursuits and outdoor adventure education settings (Martin, et al., 2006; Priest & Gass, 1997). Hersey, et al. suggest that situational leadership is based on the amount of direction a leader gives (task behavior), the amount of socio-emotional support a leader provides (relationship behavior), and how ready followers are to perform a specific task. Four leadership styles emerge: *Telling* (high task and low relationship), *Selling* (high task and high relationship), *Participating* (high relationship and low task), and *Delegating* (low relationship and low task). Theoretically, leaders choose the style that is appropriate for the demands of the situation and the group context. However, in practice, leaders often have a preferred style of leadership for most situations (Hersey & Blanchard, 1973). Additionally, how a leader intends to come across to others may not be how others perceive that behavior. Therefore, the purpose of this study was to compare outdoor pursuits leaders' self-perceptions with their followers' perceptions of their leadership tendencies, including dominant leadership styles, style adaptability, and the appropriateness of style choices given varying situations.

Methods

In 2010, seven senior staff members of a 13-day outdoor education practicum served as the focus of this study. For the course, 47 undergraduate students were assigned to one of seven trip groups, each led by one of these staff members. With an emphasis on developing outdoor living skills and building sense of community, all participants spent five days in a residential camp setting, six days on a wilderness canoe trip, and two days back in the camp setting. After the canoe trip, each staff member evaluated his or her own leadership tendencies using the Leader Effectiveness and Adaptability Description (LEAD-Self) instrument, while the 5 to 7 undergraduate students assigned to that leader's trip group each completed the LEAD-Other questionnaire to record their perceptions of their staff member's leadership styles. In each case, the LEAD instrument depicted a total of 12 scenarios, where three situations were constructed for each of four different levels of follower readiness. Each situation had four possible alternative actions representing the four leadership styles. Thus, all possible combinations of leadership style and follower readiness were represented. While no style choice is "right" or "wrong" per se, some styles are deemed more appropriate or effective given the followers' maturity, willingness, and readiness.

From these instruments, the staff member's preferred styles of leadership were determined by identifying which ones were chosen most often. Style adaptability, or the degree to which the leader varies his or her style appropriately based on the followers' readiness in specific situations, was also calculated. These adaptability scores ranged from 0 to 36, with 0-23 scored as *low*, 24-29 as *moderate*, and 30-36 as *high*. Appropriateness of leadership style was further represented by calculating how often staff members chose the style that best matched the situation versus one, two or three styles away from that best match. Staff's self-perceptions were compared to students' perceptions for each of the above measures. Finally, while the LEAD-Self and LEAD-Other measured perceptions of what leaders would do given 12 hypothetical situations, students were asked to indicate their perceptions of what styles their leaders actually did utilize on the 6-day canoe trips. The four styles were described and measured on a 4-point scale as being *rarely* (1), *sometimes* (2), *often* (3), or *almost always* (4) like the leader during the canoe trip.

Results

First, given the 12 scenarios on the LEAD instruments, both staff and students perceived that staff members would use *Selling* as their primary leadership style followed by *Participating* as the preferred supporting style. In fact, the aggregated LEAD-Self profile of 7 staff members was nearly identical to the aggregated LEAD-Other profile of the staff as recorded by the 47 students. On average, both staff and their followers perceived that staff members would select a *Selling* style 45% of the time (i.e., this style was chosen for 5.3 or 5.4 of the 12 scenarios by staff and students, respectively), *Participating* style 37% of the time (chosen for 4.4 of the 12 scenarios), *Telling* style 11% of the time (chosen for 1.3 of the 12 scenarios), and *Delegating* style 8% of the time (chosen for 1 vs. 0.9 of the 12 scenarios by staff and students, respectively). Second, both staff and students rated the staff members as having moderate style adaptability. Staff members perceived themselves as being slightly more adaptable on average than their students perceived them to be (27.6 vs. 26.4 on a scale of 0 to 36), but not significantly so ($t = .967, p > .05$). Third, both staff and students perceived that staff members would use leadership styles that would be most appropriate (i.e., the best match for the readiness of the group in a given situation), or just one style away from the best match, approximately 90% of the time. Specifically, both groups believed that staff would choose the best match 45% of the time and just one style away from the best match 49% or 44% of the time (staff vs. student perception, respectively). Finally, students perceived that their leaders actually did choose to use a *Selling* style *often* to *almost always* on their 6-day canoe trips (mean = 3.40 on the 4-point scale), and the other three styles *sometimes* on the trip (*Delegating* = 2.38, *Participating* = 2.22, and *Telling* = 1.98).

Discussion

When compared to similar research, the profile of leadership styles preferred by this study's outdoor pursuits staff members seems quite typical. For example, this study's profiles closely resemble the LEAD-Self profile of leaders of voluntary workers in Slovenian non-governmental sports organizations (Jurak & Bednarik, 2010). In that context, leaders also choose the *Selling* style most often (42% of the time compared to this study's 45%), followed by *Participating* (37% for both studies), *Telling* (12% vs. this study's 11%), and *Delegating* (9% vs. 8%). However, unlike this study where staff members would use appropriate leadership styles (or just one style away from the best match) approximately 90% of the time, Jurack and Bednarik found that leaders in non-governmental sports organizations are less apt to select suitable leadership styles that best match circumstances and follower readiness.

Comparisons of leaders' LEAD-Self with their followers' LEAD-Other measures are not prolific in the literature. Silverthorne and Wang (2001) did use these instruments to compare adaptability scores of managers from high technology companies in Taiwan with their subordinates' perceptions of them. High-performing managers received higher adaptability scores on the LEAD-Self and LEAD-Other than low-performing managers did; they were also perceived as being more effective and their organizations more successful. The current study, however, had a different focus. Instead of comparing the effectiveness of leaders who are low and high on adaptability, all leaders in this study were moderately adaptable; the emphasis was instead on direct comparisons of leaders' self-ratings with their followers' perceptions.

In sum, based on the findings of this study, outdoor pursuits trip group leaders' perceptions of their leadership tendencies closely match their followers' perceptions of those tendencies. Furthermore, although leaders are moderately adaptable and tend to choose appropriate styles given various situations, trip leaders tend to choose styles that incorporate high relationship behaviors (*Selling* and *Participating*). In actual practice, leaders rely on *Selling* most often, focusing on both high task and high relationship behaviors. This finding seems appropriate given the moderate level of maturity and readiness of the students in this course, the need to accomplish tasks of basic survival, and the focus on building sense of community as a course objective. By examining their leadership style profiles as perceived by themselves and others, outdoor pursuits trip leaders can become more effective leaders by increasing their self-awareness, understanding leadership tendencies, and identifying strengths and areas for development.

References

- Bass, B. M. (1990). *Bass and Stogdill's handbook of leadership: Theory, research, and managerial applications* (3rd ed.). New York: Free Press.
- Hersey, P., & Blanchard, K. (1973). *LEAD self*. Escondido, CA: Center for Leadership Studies.
- Hersey, P., Blanchard, K., & Johnson, D. E. (1996). *Management of organizational behavior: Utilizing human resources* (7th ed.). Upper Saddle River, NJ: Prentice Hall.
- Jurak, G., & Bednarik, J. (2010). Leadership in non governmental sports organisations in Slovenia. / Vůdcovská role v nevládních sportovních organizacích ve Slovinsku. *Acta Universitatis Palackianae Olomucensis. Gymnica*, 40(4), 41-51.
- Martin, B., Cashel, C., Wagstaff, M., & Breunig, M. (2006). *Outdoor leadership: Theory and practice*. Champaign, IL: Human Kinetics.
- O'Connell, T. S., Todd, S., Breunig, M., Young, A. B., Anderson, L., & Anderson, D. (2009). The effect of leadership style on sense of community and group cohesion in outdoor pursuits trip groups. In J. Hinton, J. Sibthorp, A. B. Young, & M. A. Anderson (eds.), *Research in Outdoor Education*, 9, 43-59. Cortland, NY: The Coalition for Education in the Outdoors.
- Priest, S., & Gass, M. (1997). *Effective leadership in adventure programming*. Champaign, IL: Human Kinetics.
- Silverthorne, C., & Wang, T. (2001). Situational leadership style as a predictor of success and productivity among Taiwanese business organizations. *The Journal of Psychology*, 135(4), 399-412.

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Reading and Writing and Boys' Camp: Lessons for schools and camps
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"When you read with somebody it feels like you are not alone at all...and then if you read together you feel like y'all are in the same imagination because books will take you on a journeytogether." -3rd grade boy

Sherwood Forest Camp, founded in 1937, is a St. Louis–area youth development agency that serves children, primarily from low-income families and under-resourced communities. Its programs are centered on a resident camp program with school year “continued contact” follow-up activities. Over the last four summers, the camp has developed a reading program to address a critical area of concern: the issue of “summer learning loss,” especially regarding reading skills for children from socioeconomically disadvantaged communities.

In the Sherwood Forest Camp reading program, campers meet for 1 ¼ hour sessions on most days in a specially designated reading cabin. The boys focused their reading on the book *Hatchet* by Gary Paulsen. The reading sessions included hands-on activities related to *Hatchet*, writing practice, and vocabulary games.

Over the past four years, program evaluations have documented several promising results for campers who participate in the reading program at Sherwood Forest. One of the most interesting results is that while the program benefits all campers, changes in behaviors and attitudes about reading are particularly significant for boys (Arend & Rogers, 2013).

In the mid-1990s there was a shift in the research on education and gender from studying outcomes for girls, to focusing on boys (Weaver-Hightower, 2003). The shift in research has pervaded into popular culture with titles such as *Raising Cain* read by audiences much broader than educational practitioners, similar to works such as *Reviving Ophelia* a few decades ago. This “boy turn” in the research remains contentious: questions about implications for schools and feminist reactions to this shift suggest that for those adults that work with boys in a variety of capacities, there is still no clear mandate for what boys need, if their needs are truly different than girls, and what this research means for practitioners (Epstein, Elwood, Hey, & Maw, 1998; Kindlon & Thompson, 2000; Pollack, 1998; Sommers, 2000).

Much has been written about working with boys in the camp setting and the particular needs of boys (e.g., Thompson, 2007). School research remains mixed on how boys learn best and whether there is a gender bias in schools (e.g., Gurian, 1996; Mead, 2006). What is less contentious, is that for certain groups of boys (poor, Black, Hispanic, or low reading ability) there is a concerning gap in literacy skills. Robinson & Lubienski (2011) found that although girls do perform higher in reading in the early elementary grades, this gender gap was minimal for highly competent readers by the end of fifth grade. But for students reading at the low end of the distribution (like these campers), boys fall farther and farther behind their female peers.

Methods

This study analyzed three years (2011-2013) of evaluation data from Sherwood Forest Camp’s reading program to investigate the outcomes for boys: how these outcomes are different and the same as outcomes for girls; and how the results from the reading program at Sherwood Forest fit within existing frameworks in the literature on boys and schools, boys and literacy, and boys and camp.

The data analyzed in this study included:

- Changes in camper reading recreational and academic reading attitudes as measured by the Elementary Reading Attitudes Survey (McKenna & Kear, 1990).
- Changes in camper vocabulary knowledge as measured by vocabulary tests related to the books read in the camp reading program.
- Writing ability measured at several points throughout the summer using the 6 Point Writer's Rubric (Education Northwest, 2010).
- Camp library usage data, including comparisons of participants and nonparticipants in the reading program.
- Qualitative sources including focus groups, interviews, and observations.

Findings

- In 2011, boys entered camp with lower vocabulary test scores and lower recreational and academic reading attitudes. Boys' scores (as well as girls) improved on all of these measures. Analysis of library usage indicated that reading program participants checked out significantly more books from the camp library than nonparticipants and the magnitude of difference between the two groups was greater for boys than girls.
- In 2012, boys entered camp with lower recreational and academic reading attitudes. Boys' increases in reading attitudes and vocabulary scores were statistically significant with a larger effect size than the magnitude of change for girls. Boys' writing ability was lower at the beginning of camp than girls', and remained lower by the end of camp. However, the effect size for the change in boys' writing skills was much larger than that of the girls.
- In 2013, boys increased their recreational and academic reading attitudes statistically significantly with large effect sizes. Girls saw little to no change in reading attitudes. Girls and boys increased their vocabulary scores, but the effect size for that change was higher for boys.
- In 2013, an analysis of current reading program participants, campers who never participated in the reading program, and campers who participated in the reading program in either 2011 or 2012, led to several interesting findings. The difference for girls in each of the three groups was marginal – girls who currently or previously participated in the program had slightly higher academic and recreational reading attitudes than girls who never participated in the program. Recreational and academic reading attitudes for boys who currently or previously participated in the reading program were much higher than for boys who never participated in the program.

The trends in the Sherwood Forest Camp reading program data suggest that the impact of reading at camp is powerful for this sample of boys, the majority of whom qualify for free and reduced lunch and are performing below grade level when they enter the reading program. Boys in the reading program consistently talk about camp as a place where they can be “relaxed.” Observations and photo documentation show boys sprawled across the floor and each other in the reading cabin, with “Crazy Creeks” on their heads, hiding out in the corner of the reading tent, or snuggled next to a teacher in an armchair. In all of these instances, the boys were *reading*, but their physical behaviors may have precluded them from reading in a typical elementary classroom.

Implications for Camps and Schools

There are opportunities and perhaps responsibilities for camps to create connections with what happens during the school year. There is a growing call for camps to be involved in the education reform movement (Tyrrell, 2012). Documenting the promising outcomes at camp for boys who have typically been underachieving in schools is one way camps can exhibit influence

in educational reform. There remains ambivalence about a gender bias in schools. However, elementary schools are primarily staffed by women, elementary teachers are more likely to identify boys as exhibiting behavioral problems, twice as more likely to refer boys for special education services because of reading difficulties, and research suggests that elementary teachers equate behavior with cognitive ability (Robinson & Lubienski, 2011). This implies that the experiential, less-rigid, learning environment at camp might allow boys, especially “low-performing” boys, to learn to read and like it.

In her seminal works on school and community relationships, Epstein (2011) writes about the “over-lapping spheres of influence” on children. She argues that we should be striving to create *school-like homes* and *home-like schools* for a holistic support of children’s development. Borrowing from this framework, perhaps *camp-like schools* and *school-like camps* can be places where boys *and* girls are able to engage with literacy in authentic ways.

References

- Arend, L. & Rogers, M. (April, 2013). The perfect place to read: Encouraging the love of reading at camp. *Camping Magazine*, 86 (2), pp.40-45.
- Epstein, J. (2011). *School, family, and community partnerships, 2nd ed.* Boulder, CO: Westview Press.
- Epstein, Elwood, Hey, & Maw. (1998). Schoolboy frictions: Feminism and “failing” boys. In D. Epstein, J. Elwood, V. Hey, & J. Maw (Eds.) *Failing boys? Issues in gender and achievement* (pp. 3-18). Buckingham, UK: Open University Press.
- Gurian, M. (1996). *The wonder of boys: What parents, mentors and educators can do to shape boys into exceptional men.* New York, NY: Penguin Books.
- Kindlon & Thompson. (2000). *Raising Cain: Protecting the emotional life of boys.* New York: Ballantine Books.
- McKenna, M. and Kear, D. (1990). “Measuring attitude toward reading: A new tool for teachers.” *The Reading Teacher*, May, 626-639.
- Mead, S. (2006, June). *The truth about boys and girls.* (Research brief) Retrieved from: http://www.educationsector.org/sites/default/files/publications/ESO_BoysAndGirls.pdf
- Pollack, W. (1998). *Real boys: Rescuing our sons from the myths of boyhood.* New York: Random House.
- Robinson, J. & Lubienski, S. (April, 2011). The development of gender achievement gaps in mathematics and reading during elementary and middle school: examining direct cognitive assessments and teacher ratings. *American Educational Research Journal*, 48 (2), pp. 268-302.
- Sommers, C.H. (2000). *The war against boys: How misguided feminism is harming our young men.* New York: Simon & Schuster.
- Thompson, M. (2007). One camp, two ways of teaching boys. *Camping Magazine*. Retrieved from <http://www.acacamps.org/campmag/0705thompson>
- Tyrrell, D. (Jan/Feb, 2012). The academic edge: Connecting camp with education. *Camping Magazine*. Retrieved from <http://www.acacamps.org/campmag/1201/20-20-toolbox-acadmeic-edge>
- Weaver-Hightower, M. (Winter, 2003). The "boy turn" in research on gender and education *Review of Educational Research* , 73 (4), pp. 471-498

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Measuring Outcomes of Girls' Participation: Creating Statistically Tested Scales

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Purpose

The purpose of this pilot study was to examine the feasibility of developing a standardized scale to measure outcomes of girls' resiliency in adventure/experiential programs. Traditionally, organizations that use adventurous activities or experiential-based programming to support girls' development, rely on survey instruments that have been created internally by their staff and have unknown psychometric properties (e.g., reliability and validity). Researchers in the field have examined the outcomes of girls' experiences but methods were primarily qualitative (Budbill, 2008; Whittington & Budbill, 2013) or lacked an instrument with known psychometric properties (Whittington & Mack, 2010).

While survey instruments have been created that measure resiliency, many are expensive, challenging to interpret, focused on both girls and boys and are not conducted in adventure/experiential settings. For example, the comparison scale used for this pilot study, the Resiliency Scales for Children and Adolescents (RSCA)[®] asked a total of 64 questions, costs approximately \$6.00 to implement pre and post program participation (Pearson, 2012), was developed for a clinical setting and requires someone with extensive knowledge in statistical software to analyze.

The researchers propose the development of a scale that: a) measures several dimensions b) has known psychometric properties, c) can be used across multiple adventure/experiential programs, and d) focuses on girls. This pilot study showed evidence that these goals can be met and ongoing research is currently being conducted.

Method

Participants in this pilot study included 54 girls who completed a one-week adventure program called Dirt Divas. Dirt Divas is one of several programs offered through Vermont Works for Women, a non-profit organization founded in 1987 to help women and girls recognize their potential and explore, pursue, and excel in work that leads to economic independence. Dirt Divas uses mountain biking as the adventurous activity and creates intentionally designed programming to support positive girls' development. A self-designed scale titled 'Confidence' was developed by the researchers and included 15 questions which were created to assess important aspects of girls' development, such as how they feel about their body, doing activities which people think girls shouldn't do, and speaking their minds. Participants rated each statement using a 4-point numerical scale (1 = *not at all confident*, 2 = *somewhat confident*, 3 = *confident* and 4 = *very confident*). Responses to all items were averaged to form a single Confidence total score. Also, an exploratory principle-components factor analysis with an obliminal rotation identified three factors that accounted for 53% of the variance: Personal Competence, Self Evaluation, and Approach to Challenge. Scores for each factor were obtained by averaging items that had factor loadings of .30 or higher on their respective factors.

Convergent validity data for the Confidence Scale was obtained by evaluating correlations between the Confidence Scale and the established Resiliency Scales for Children and Adolescents[®] (RSCA; Prince-Embury, 2007). The RSCA consists of three self-report

scales, Sense of Mastery (20 items), Sense of Relatedness (24 items) and Emotional Reactivity (20 items). Both the self-designed (Confidence) and the RSCA® scales were implemented pre and post (n=54) participation in a Dirt Divas program. Cronbach’s alpha for the self-designed scale ranged between .71 and .92 across the two administrations. With one exception, the alphas for the RSCA® ranged between .88 and .95 across the two administrations of the three subscales. Post participation the alpha for emotional reactivity was .62.

Results

The Confidence total score showed strongest convergence with the Sense of Mastery and Sense of Relatedness scales, with correlations ranging between $r(54) = .53, p < .05$ and $r(54) = .71, p < .05$ across the two time points. Convergence with the Emotional Reactivity scale was modest, ranging between $r(54) = -.23, p < .10$ and $r(54) = -.29, p < .05$. This pattern is not surprising given that the items comprising the self-designed scale were not selected to specifically address issues of emotional regulation. The three Confidence factors—Personal Competence, Self Evaluation, and Approaching Challenge—showed similar convergence. However, Self Evaluation was more modestly correlated with Sense of Mastery at the two time points, with $r(56) = .31, p < .05$ and $r(54) = .37, p < .01$.

Further analysis of the self-designed scale was conducted using paired sample *t*-tests.

Scale/Item	Time Point		Correlation	Paired-Samples Tests	
	Pre Participation	Post Participation		<i>t</i> (<i>df</i>)	Effect Size <i>d</i> ^a
Confidence Total Score	3.10 (.4349)	3.45 (.3929)	.69	-7.85*** (53)	-.84
Personal Competence	3.01 (.5158)	3.42 (.4026)	.63	-7.42*** (53)	-.89
Self Evaluation	3.14 (.6838)	3.44 (.5300)	.68	-4.45*** (53)	-.49
Approaching Challenge	3.09 (.5218)	3.42 (.4854)	.59	-5.35*** (53)	-.65

Note. *** $p \leq .001$.

Standard deviations appear in parentheses below means.

a. Value represents proportion of the differences between averages of the pretest and post test scores relative to the pooled standard deviation of the pretest and post test scores.

Scores on the self-designed scale after participating in the Dirt Divas program were significantly higher than the pre-participation scores. Examination of individual Confidence factors demonstrated a similar pattern. The observed increases in confidence were substantial (as indicated by the moderate to large effect size estimates; $d = .49$ and above) and uniformly experienced by participants (as indicated by the relatively strong correlations between the pre-test and post-test scores).

Future Research

This pilot study showed evidence that the creation of a tool (or series of tools) that measure outcomes of girls' participation is feasible. Ongoing research is being conducted and a more extensive scale was created by the authors. The new measure focused on facets particularly relevant to adventure programming: positive approach to challenge; resiliency; feelings of self-efficacy; and trust, comfort, and support within peer relationships (a total of 44 questions). These are all individual characteristics that girls' adventure programming focuses on improving. This scale was recently completed by 197 girls, at two different organizations, and in five separate locations. Analysis of this data is currently being conducted and initial findings suggest that the authors have developed a reliable measure that taps the facets of resilience most amenable to change: Confidence, Self-Efficacy and View of Relationships. The pilot study and the recent data collection is aiding the researcher's in meeting their goals of measuring several dimensions (resiliency, self-efficacy, and relationship building with other girls); creating an instrument with known psychometric properties that can be used across multiple adventure/experiential programs; and focused on girls. Continued data collection and analysis will most likely be conducted for several years to develop an instrument that meets these goals.

References

- Budbill, N. W. (2008). *Dirt Divas: An examination of an outdoor adventure program's impact on the development of adolescent girls*. Unpublished Master's Thesis, Prescott College.
- Pearson. (2012). *Resiliency scales for children & adolescents - A profile of personal strengths (RSCA)*. Retrieved August 25, 2013 from <http://www.pearsonassessments.com>
- Prince-Embury, S. (2007). *Resiliency scales for children and adolescents: Profiles of personal strengths manual*. San Antonio, TX: Harcourt Assessments
- Whittington, A., & Budbill, N. (2013). Breaking the mold: Impacts of adventure education on girls. *Journal of Outdoor Recreation, Education and Leadership*, 5(1), 37-53.
- Whittington, A., & Mack E. N. (2010). Inspiring courage in girls: An evaluation of practices and outcomes. *Journal of Experiential Education*, 33(2), 166-180.

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Examining How a Wilderness Experience Might Influence At-risk youths' Alcohol, Tobacco and Other Drugs Attitudes and Behaviors (A pilot study)

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Students at risk for many social and behavioral problems often attend non-traditional schools. One element of these schools is sometimes outdoor education. It is often assumed that these experiences in outdoor education will steer at-risk youth to healthier behavior especially in their attitude toward self. This pilot project will start to examine the extent to which a wilderness experience influences at-risk youths' health behaviors, particularly their attitudes and practices of alcohol, tobacco, (ATOD), including risky behaviors such as binge drinking, and how long that influence persists.

Universal prevention programs in schools often do not reach the most at-risk students, regardless of their effectiveness on the general student population (Marsiglia et al, 2012). Further, many of the youth most at-risk have left school (by their means or others) or are attending non-traditional schools. California Healthy Kids Survey reports that nearly 10% of the public school population enroll in community education or community day schools, and results from the 2008-1010 survey results (available at kidsdata.org) demonstrate this population is at greater risk for alcohol and other drug use. These students, identified as non-traditional, report higher rates of ATOD use than students in traditional public schools. For example, in California 81% of non-traditional students reported lifetime use of alcohol, compared to 45.7% of 9th graders and 61.6% of 11th graders. For drinking in the last month, 14.9% of non-traditional students reported having drunk alcohol 10 or more times compared 5.1% of 9th graders and 6.2% of 11th graders. For marijuana use, 72.7% of non-traditional students reported lifetime compared to 38.6% of 11th graders and 26.6% of 9th graders, and nearly 20% of non-traditional students reported using marijuana more than 20 times during the last month.

In general, non-traditional schools focus on students earning credits to complete high school. Some non-traditional schools offer unique programs, such as a local wilderness class which focuses on experiential learning and community activities. An important component of the program is a 10-day wilderness experience where students learn by doing and reflecting, while learning with others, to develop a more positive sense of self, community, and leadership. It takes place in the beginning of each semester in order for students to form their own community from which they will work together for the rest of the school.

There is reason to believe that these wilderness experiences might have an impact on alcohol, tobacco, and other drug use. During a trip, students have a unique opportunity for self-reflection in a natural environment without any artificial resources. Unpublished data previously collected by the author includes students desire to change healthy behaviors such as physical exercise, smoking tobacco, and nutrition. Further, the learning is designed to apply to their normal lives after the experience. Studies have demonstrated that students improve on their perspective and attitude toward self and others, such as self-esteem (i.e., Dresner & Gill, 1994; Skipper, 1974), self-efficacy (Davis-Berman & Berman, 1989; Miramontes, 1996) and attitude towards others (Miramontes, 2007, 2012) as well as behavioral changes (Davis-Berman & Berman, 1989) and positive life skills (Hanna, 1996). Transfer of learning has been more difficult to measure but has been found in studies such as my own which included following up with students five years later. It is the intent of this study to learn whether students think of healthy choices during a wilderness

experience and if open discussion can influence students to reflect on making healthier choices related to ATOD and if they continue after a wilderness experience.

The program of focus for this study is a wilderness school located in an urban area in California. Youth enroll in the program for one or more semesters, often referred for “credit recovery”, and many have dropped out or have been kicked out, pushed out of traditional public school. Pilot data will include interviews with current students and alumni students, and artifact data from current students final Presentation of Learning, both a written and verbal presentation focusing on what they learned during the entire semester.

California Healthy Kids Survey (2013) *Emotional and behavioral health*. Retrieved from <http://www.kidsdata.org/topic#cat=27>.

Davis-Berman, J., & Berman, D. S. (1989). The wilderness therapy program: An empirical study of its effects with adolescents in an outpatient setting. *Journal of Contemporary Psychotherapy*, 19(4), 271-281.

Dresner, M., & Gill, M. (1994). Environmental education at summer nature camp. *Journal of Environmental Education*, 25(3), 35-41.

Hanna, R. V. (1996). *Process of change and adaptation of adolescent wilderness therapy graduates: A qualitative analysis*. Unpublished doctoral dissertation: Brigham Young University, Provo, UT.

Marsiglia, F. F., Ayers, S., Gance-Cleveland, B., Mettler, K., Booth, J. (2012). Beyond primary prevention of alcohol use: A culturally specific secondary prevention program for Mexican heritage adolescents. *Prevention Science* 13, 241-251.

Miramontes, L. M. P. (1996). *The Influence of a Wilderness Experience on Adolescents' Self-Efficacy and Desire for Control*. MA thesis, California State University, Chico, Chico CA.

Miramontes, L. M. P. (2007). *Exploring At-Risk Youths' Personal and Social Development During Wilderness Experiences*. Unpublished doctoral dissertation, University of Northern Colorado, Greeley, CO.

Miramontes, L.M.P. (2012). Student learning and development in the wilderness: using ethnography to capture students' growth during ten-day backpacking experiences. In: M. Lengeling, I.M. Pablo & J. Ashley-Shanahan *Qualitative Research and Interpretation: Selection of articles from the Third International Qualitative Research Conference*. Guanajuato, México: Ediciones Universitarias. pp 365-388

Management Trends in the Delivery of Outdoor Education Programs for Persons with Mental Impairments

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Introduction

This paper addresses the popularity of outdoor education programs, and the issues often associated with the growing number of diverse participants wishing to participate. Outdoor education programs, and the activities they provide, continue to attract participants with an increasingly varied background of skills, level of development, and interests every year (Outdoor Industry Foundation, 2012; Gilbertson, Bates, McLaughlin, & Ewert, 2006). Whether these programs take the form of adventure education, camps, interpretive programs, or environmental education, participants continue to seek the rewarding outcomes that are proffered through the unique venue of outdoor education (Voight, Ewert, & Wolfe, 2010). These outcomes range from documented changes in self-systems (such as increases in self-esteem or self-confidence), to increased ability for stress and coping, as well as increases in environmental ethics, outdoor skills, the ability to meet challenges, character development, enhanced interpersonal skills, and leadership (Bandura, 1986; Ewert, van Puymbroeck, & Frankel, 2009; Roggenbuck & Driver, 2000).

The attributes and outcomes of outdoor education programs continue to draw participants in accumulating numbers, often as an alternative experience to a more complicated and technology-laden world, as an antidote to unsatisfying lifestyles, or as an alternative (e.g., adventure therapy) to more traditional medical treatments (e.g., drugs, psychotherapy, counseling, etc.) which have not yielded the results intended. Despite the specific reason, outdoor education programs in general, as opposed to specialized or segregated therapeutic programs, are drawing more divergent participants than in previous decades (Voigt et al. 2010). This reflects not only a more diverse society in today's world, but also a response to a significant event. One of the most singular reasons for the growing diversity of participants has come from not only a changing and more diverse population in the United States, but also from the legacy and mandate of the Americans with Disabilities Act, signed into law in 1990 (Americans with Disabilities Act, 1990). The last marginalized group of citizens in the United States has finally earned its rights to equal opportunity in all things that most other Americans take for granted and enjoy—including outdoor education.

Inclusion as a Concept vs. Practice

As the mandate for inclusion first unfolded over 20 years ago, slowly and progressively, more persons with varying abilities have become involved in outdoor activities. This has most notably been expressed through high profile activities that draw national as well as international media attention. Examples include a wheelchair user climbing Mt. Everest (see Huggler, 2006), and other groups who have visual impairments that have hiked the Grand Canyon, and also climbed Mt. Everest. These extreme examples illustrate the desire of those, despite certain limitations, to pursue outdoor endeavors for the personal sense of achievement and accomplishment afforded by them and yet has historically often been denied to them. Now, with legal legislation to protect a person's right to engage in outdoor pursuits, people who have disabilities or limitations are

becoming an escalating presence in outdoor programs. In particular, participation in outdoor adventure activities by those with specific limitations (i.e., physical, cognitive, PTSD, etc.) has increased and become more acceptable—both to fellow group members as well as outdoor instructors (Gilbertson et al., 2006; Smith, Austin, Kennedy, Lee, & Hutchinson, 2005). As a result of this increased inclusion, outdoor instructors may find themselves engaging in the delivery of outdoor activities or outdoor adventure with persons who have certain limitations, and with whom they may not feel comfortable instructing due to these limitations. While there are segregated programs that serve to provide outdoor adventure activities for participants, more and more persons are choosing to participate in non-segregated programs, alongside abled-bodied or non-disabled participants (Voight et al., 2010). As such, these circumstances can present special challenges for an outdoor instructor in integrated circumstances (Gilbertson, et al.; Sugerman, 2001). In particular, this presentation addresses the current trends and issues associated with the instruction, management and leadership of persons who have mental impairments.

Outdoor Instructing with Persons Who Have Mental Impairments

While physical disabilities can often be accommodated with specialized equipment (skis, specialized paddles for canoeing, or outdoor-fitted wheelchairs, etc.), persons who have mental impairments can present involved and challenging situations for outdoor instructors in terms of their variability, accommodation, and risk management. In particular, participants who have experienced traumatic brain injury (TBI), autism, learning disabilities, or other cognitive disabilities, may have varied methods of understanding instructions, or perceiving risk in outdoor situations (Personal communication with author; Voight & Kim, 2012). “Every year, at least 1.7 million TBIs occur either as an isolated injury or along with other injuries” (Centers for Disease Control and Prevention, 2013). In addition, returning veterans have become a population cohort that has experienced TBIs as one of the singular, stand-out casualties from recent wars in the Middle East, second to PTSD. This specific type of mental impairment has become a much greater presence in the last decade. As a result, issues related to instruction and communication become paramount when interacting with groups that present with TBIs, and other cognitive limitations. As each individual with a mental impairment, or TBI can vary considerably, being able to communicate effectively with persons who have these challenges can be a critical factor in the delivery of outdoor programs (Bullock & Mahon, 2001; Gass, Gillis, & Russell, 2012). As outdoor education programs continue to become more integrated and inclusive, specific challenges related to the instruction of persons with mental or cognitive limitations will be more pervasive. Examples for outdoor leaders which may occur when instructing persons with mental health issues may include anger management, crisis intervention, managing risk, behavioral and emotional capacities, and level of engagement for participation (Bullock & Mahon, 2001; Voight et al., 2010). Strategies and/or approaches with wide application to outdoor adventure leadership for persons who have mental impairments are listed in Table 1.

References

- Americans with Disabilities Act. (1990). See <http://www.ada.gov/>
- Bandura A. (1986). *Social foundations of thought and action: A social cognitive theory*: Upper Saddle River, NJ: Prentice-Hall.
- Bullock, C. & Mahon, M. (2001). *Introduction to recreation services: A person-centered*

approach (2nd ed.). Champaign, IL: Sagamore.

Centers for Disease Control and Prevention. (2013). *Traumatic Brain Injuries*. Retrieved from <http://www.cdc.gov/search.do?queryText=traumatic+brain+injury+2013+statistics&action=search&searchButton.x=38&searchButton.y=11>

Ewert A., van Puymbroeck M., Frankel J. (2009). *The impact of outward bound on returning veterans: A pilot study*. Golden, CO: Indiana University, Faculty Sponsored Research Funds.

Huggler, J. (2006, May). *Climber who lost both legs reaches summit of Everest*. Retrieved from <http://www.independent.co.uk/news/world/asia/climber-who-lost-both-legs-reaches-summit-of-everest-478517.html>

Gass, M., Gillis, L., & Russell, K. (2012). *Adventure therapy: Theory, research, and practice*. NY: Routledge.

Gilbertson, K., Bates, T., McLaughlin, T., & Ewert, A. (2006). Understanding participants (Chapter 4). *Outdoor Education: Methods & Strategies*. Pp. 43-58. Champaign, IL: Human Kinetics.

Outdoor Industry Foundation. (2012). *Outdoor Recreation Participation Report 2011*. Boulder, CO: The Outdoor Foundation.

Roggenbuck, J., & Driver, B. L. (2000). Benefits of nonfacilitated uses of wilderness. *USDA Forest Service Proceedings, RMRS-P-15-VOL-3*.

Smith, R.W., Austin, D., Kennedy, D., Lee, Y., & Hutchinson, P. (2005). *Inclusive and special recreation opportunities for persons with disabilities*. New York, NY: McGraw-Hill.

Sugerman, D. (2001). Inclusive outdoor education: Facilitating groups that include people with disabilities. *Journal of Experiential Education*, 24(3), 166-172.

Voight, A., Ewert, A., & Wolfe, B. (2010). Inclusive adventure and challenge courses. In Human Kinetics (Eds., pp. 303-316), *Inclusive recreation: Programs and services for diverse populations*. Champaign, IL: Human Kinetics.

Voight, A., & Kim, K. (2012). *Understanding Motivational Factors Relevant to Leisure Participation Experienced by Parent Caregivers of Children with Autistic Spectrum Disorder (ASD)*. Unpublished research study conducted summer, 2012. Indiana University, Bloomington, IN.

Table 1. Strategies for Integrative Approaches to Outdoor Adventure Regarding Mental Impairments

<u>Recognition of Characteristics</u>	<u>General Strategies*</u>	<u>Application Forms</u>
<ul style="list-style-type: none"> ▪Behavioral issues; psychomotor agitation; aggression; withdrawn ▪Mood swings; depression ▪Thinking; judgment; memory ▪Fatigue ▪Reduced attention span ▪Sensitivity to noise & textures ▪Difficulty w/communication, both receptive & expressive ▪Unexpected reaction to medications ▪Slower reaction time ▪ Slower pace if needed 	<ul style="list-style-type: none"> ▪“Transitioning phases” are highly important. Knowing what to expect next is very beneficial ▪Allow time! ▪Provide modeling behaviors; or use appropriate peer behavior ▪Use frequent feedback & reminders ▪Facilitate decision-making when needed ▪Ensure risk is understood by demonstration or questions ▪Set Expectations ▪Allow for dignity of risk but ensure safety ▪Be flexible 	<ul style="list-style-type: none"> ▪Non-therapeutic forms for general outdoor activities may not include areas for specific mental health issues ▪Participants may not always disclose mental health issues; some are not readily apparent; you may have to ask about any specific issues if warranted ▪Medication knowledge & management is essential

*Strategies are based on client information, specific situations, and context of activities at the time.

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Measuring Youth Development Outcomes of Camp and a Camp-Themed After-School Program

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Background

Within the past 40 years, the field of youth development has undergone several major paradigm shifts in an effort to better understand – and provide – what young people need to become happy, healthy, and successful adults (Pittman, Irby, Tolman, Yohalem, & Ferber, 2003). Early strategies that simply focused on minimizing the problematic behaviors that got youth into trouble evolved into later strategies that focused instead on developing the beneficial behaviors that helped youth succeed. Today, the theory of positive youth development broadly represents a social science framework that identifies the external supports, structures, and opportunities that young people need to become successful, contributing adults in society (Witt & Caldwell, 2005). Effective youth development programs can therefore promote positive behaviors that intrinsically reduce negative outcomes (Pittman et al., 2003).

Summer camps and after-school programs are ideal sites for facilitating positive youth development. Summer camp experiences are associated with growth in self-esteem, independence, leadership, and social skills (American Camp Association, 2005). After-school program attendance, meanwhile, is associated with heightened academic achievement, self-confidence, and leadership abilities, as well as a reduction in anxiety and depression, substance use and abuse, and truancy (reviewed in Eccles & Templeton, 2002).

Introduction

The Central Wisconsin Environmental Station (CWES) is an environmental education center that fosters environmental awareness, appreciation, and engagement through year-round programming that includes overnight summer camps and monthly camp-themed after-school programs. The purpose of this study was to evaluate whether youth perceived growth in outcomes related to the development of friendships, openness to new experiences, and emotional connections to the natural world after attending one of CWES' summer camps or participating in its after-school programs.

Methods

This study followed a quasi-experimental retrospective pretest design (Riddick & Russell, 2008; Sibthorp, Paisley, Gookin, & Ward, 2007). Data were collected at the conclusion of the after-school program or camp using the American Camp Association's Youth Outcome Battery, a published scale with high reliability and validity scores (Sibthorp, Bialeschki, Morgan, & Browne, 2013) that measures gains in eight common youth development areas: friendship skills, independence, teamwork, family citizenship, perceived competence, interest in exploration, responsibility, and affinity for nature (American Camp Association, 2009). Each outcome-specific survey asks respondents to consider how much their participation in the program being evaluated changed them in a variety of ways. Answers are scored on a five-point scale ranging from "*Decreased*" to "*Increased a Lot, I am Sure.*" One hundred forty-eight youth ages 7 to 13 completed a Friendship Skills survey, an Interest in Exploration survey, and an Affinity for Nature survey in either April or June 2013.

Twenty-three students provided the study’s after-school program data. The sample was 61% female and had a mean age of 9.5 years. One hundred twenty-five campers provided the study’s summer camp data. The sample was 56% female and had a mean age of 10.4 years.

Results

Preliminary results are consistent with norms calculated for a national sample of 1757 youth campers (Sibthorp et al., 2013). Both after-school and camper participants perceived growth in all three outcomes measured, with means for each outcome equal to or exceeding 3.5 on a scale of 1-5 (Table 1).

Independent t-tests were conducted to compare outcome scores between after-school and camp participants. On average, after-school participants perceived significantly more growth in the Interest in Exploration ($t(146) = 2.264, p = 0.025$) and Affinity for Nature ($t(142) = 2.840, p = 0.005$) areas than summer camp participants. There was no significant difference in Friendship Skills development between after-school and camp participants.

Table 1. Descriptive statistics for battery norms (Sibthorp et al., 2013), CWES camp-themed after-school program (ASCP), and CWES summer camp.

	Friendship Skills			Interest in Exploration			Affinity for Nature		
	Norm	ASCP	Camp	Norm	ASCP	Camp	Norm	ASCP	Camp
N	1620	23	126	1673	23	125	1629	22	122
Mean	3.8	3.8	3.5	3.9	4.3	3.9	3.8	4.6	4.0
St. Dev	0.93	0.7	0.8	0.85	0.7	0.8	1.06	0.6	1.0

Discussion and Conclusion

Our results demonstrate that camp activities foster youth development in both after-school and residential settings. The camp-themed after-school program featured in our study brought the benefits of camp to a population of children who had limited, if any, prior camp-related experience. After taking part in the program, 18 participants chose to enroll in summer camp sessions at CWES. Therefore, in addition to bringing positive outcomes to new communities, this program also serves as a novel and unique recruitment technique to help camps reach underserved populations.

Forming meaningful relationships, exploring new situations, and connecting to the surrounding world are all key components of a person’s development and wellbeing. Quality friendships are associated with benefits ranging from social competency to self-esteem; inquisitiveness is associated with benefits ranging from a sense of self-worth to heightened academic achievement; and attachment to nature is associated with benefits ranging from positive environmental attitudes to pro-environmental behaviors (reviewed in Sibthorp et al., 2013). These assets may also lead to further involvement in the outdoors – and subsequent environmental stewardship – which has become increasingly important in the face of global pollution, habitat degradation, and climate change.

References

- American Camp Association. (2005). *Directions: The youth development outcomes of the camp experience*. Martinsville, IN: American Camping Association, Inc.
- American Camp Association. (2009). *Camp youth outcomes battery: Measuring developmental outcomes in youth programs*. Martinsville, IN: American Camping Association, Inc.

- Eccles, J.S. & Templeton, J. (2002). Extracurricular and other after-school activities for youth. *Review of Research in Education*, 26, 113-180.
- Pittman, K., Irby, M., Tolman, J., Yohalem, N., & Ferber, T. (2003). *Preventing problems, promoting development, encouraging engagement: Competing priorities or inseparable goals?* Based upon Pittman, K. & Irby, M. (1996). *Preventing problems or promoting development?* Washington, DC: The Forum for Youth Investment, Impact Strategies, Inc.
- Riddick, C.C. & Russell, R.V. (2008). *Research in recreation, parks, sports, and tourism* (2nd ed.). Champaign, IL: Sagamore Publishing, L.L.C.
- Roth, J.L. & Brooks-Gunn, J. (2003). What exactly is a youth development program? Answers from research and practice. *Applied Developmental Science*, 7(2), 94-111.
- Sibthorp, J., Bialeschki, M.D., Morgan, C., & Browne, L. (2013). Validating, norming, and utility of a youth outcomes battery for recreation programs and camps. *Journal of Leisure Research*, 45(4), 514-536.
- Sibthorp, J., Paisley, K., Gookin, J., & Ward, P. (2007). Addressing response-shift bias: Retrospective pretests in recreation research and evaluation. *Journal of Leisure Research*, 39(2), 295-315.
- Witt, P.A. & Caldwell, L.L. (2005). 10 principles of youth development. In P.A. Witt & L.L. Caldwell (Eds.), *Recreation and Youth Development* (pp. 3-24). State College, PA: Venture Publishing.

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Assessment of Outdoor Orientation Programs Using The Outdoor Orientation Benchmarking Survey

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The focus of this study is an analysis of 12 college outdoor orientation programs using a new survey instrument, The Outdoor Orientation Benchmarking Survey (TOOBS). This survey was developed referencing student development literature and two previous beta tests (2011 & 2012). The survey is designed to measure variables such as trust, social support, and social norms between outdoor orientation programs, allowing for program comparison. This is important in helping to understand the practices and the impacts of the 191 outdoor orientation programs, enrolling over 25,000 participants, in the United States (Bell & Starbuck, 2013). This study focused on the following questions:

1. Is TOOBS a statistically reliable measure of trust and social support (i.e., Chronbach's α)?
2. Do the variables trust, social support, and pluralistic ignorance vary by program?
3. Is there a relationship between trust and perception of social norms involving alcohol?

Review of Literature

The literature on outdoor orientation programs is composed of 25 peer-reviewed articles and 11 doctoral dissertations. This literature largely bases itself on psychological and sociological theories adapted from a larger literature on student transition and student development. The student development literature is comparatively immense, with more than 2,600 peer-reviewed articles. Two reviews of this literature have been conducted by Pascarella and Terenzini (1991, 2005), focusing on theories based in typology, student developmental stages, moral development, identity formation, etc. The outdoor orientation program literature has been influenced by the student development literature researching variables such as social support (Bell, 2005), Chickering's theory of student development (Gass, 1987; Vlamis, Bell, & Gass, 2011), and pluralistic ignorance (misperception of social norms) (Oliver, 2010).

In developing this survey, researchers sought validated tests of variables with evidence of positive impacts on student transition such as trust (characterized by two distinct factors: reliance and disclosure), social support, and reduction of pluralistic ignorance. Two beta-tests of the TOOBS survey were conducted (2012, $N = 102$ & 2013, $N = 62$) exploring the efficacy of the TOOBS survey.

Method

Participants

Participants were first-year students at least 18 years of age who participated in an outdoor orientation program at one of 11 residential colleges in the United States or one university in Canada. The number of participants invited to participate was 2,197 students, or approximately 9% of the students involved in college outdoor orientation programs.

Materials

Survey questions included 10-12 demographic questions, followed by 63-65 survey questions, varying by college and question logic. The survey was a mix of Likert scale and short-answer questions developed using validated surveys (with permission), including Gillespie's Behavioral Trust Inventory (BTI) (Gillespie, 2012), and The Campus Focused Social Provisions

Scale (Bell, 2005), adapted from the Social Provisions Scale (Cutrona & Russell, 1987). The survey also used a social norming scale influenced by the work of Oliver (2010). Some questions were based upon the higher education literature. For example, students' interaction with a faculty member predicts whether students will "devote greater effort to other educationally purposeful activities during college" (Kuh & Hu, 2001), so a TOOBS question asked students to estimate the number of times they have spoken with one of their faculty members outside of class.

Procedure

The survey was administered between October 11 and November 11, 2013. A link to the survey was emailed to outdoor orientation program directors asking them to forward the email with the survey link to outdoor orientation participants in order to ensure anonymity.

Results

The survey had an overall response rate of 18% ($n = 413$). Response rate varied by college (7%-79%). The Chronbach's Alpha exceeded .7 for Social Provisions ($\alpha > .75$) and the BTI ($\alpha > .95$). A purpose of this study was to explore the variations between programs. An ANOVA resulted in no significant differences by school for the variable Social Provisions. All programs had relatively high scores of Social Provisions ($M = 7.49$, $SD = 1.49$).

The trust variable explored the sub-factors of Overall Trust, Reliable Trust, and Disclosure Trust. These sub-factors showed significant differences between the 12 programs ($p < .001$). Post hoc tests revealed one program significantly different ($p < .05$) from eight of 11 programs on Overall Trust, Reliable Trust, Disclosure Trust, Trust of Participants, and Trust of Leaders. A model of homogenous subsets revealed a three-subset model, but only one subset was significant ($p < .05$), meaning one program had significantly lower trust scores than eight other programs. The data also revealed a strong correlation ($r = .89$) between Trust of Participants and Trust of Leaders.

A weak, but significant negative correlation was reported between Overall Trust of Leaders and the students perception of the number of drinks (alcohol) leaders consumed on average ($r = .11$, $p < .05$). This relationship was weaker, but consistent with findings from the 2012 study. As trust in leaders decreased, the perception of the amount alcoholic drinks leaders consumed on average increased.

Discussion

Outdoor orientation programs are linked to social support as measured by the social provisions in this study and previous research (Bell, 2005). Bell found statistically significant differences of social provisions between the types of college pre-orientation programs (wilderness, service, no pre-orientation) at two universities, but not between the outdoor orientation programs. This study found no statistical differences between the 12 outdoor orientation programs on measures of social support. Outdoor orientation programs may provide social provisions relatively equally across different college outdoor orientation programs, but it is not known if this outcome is the result of the programs or a lack of statistical power in this study. This question needs further research.

Trust was defined in this study as a two-factor variable of disclosure trust or reliable trust (Gillespie, 2012). Participants on new outdoor orientation programs (existing less than one year) reported lower amounts of disclosure trust and reliable trust of leaders.

Leaders who had lower scores for both reliable trust and disclosure trust were perceived as drinking more alcoholic beverages on an average week. Determining how these variables are associated is work for the future. Do students assume those they do not trust drink more? Or do leaders' overt actions (such as talking about drinking) lead to lower levels of trust? Although this was a weak correlation, it raises an interesting issue for student peer leaders that perception of alcohol use and trust may be linked.

References

- Bell, B. J. (2005). *College students' development of social support and its relationship to pre-orientation experiences*, Unpublished doctoral dissertation. Durham: University of New Hampshire.
- Bell, B. & Starbuck, J.D. (2013). Outdoor orientation program trends at colleges and universities. *Journal of Outdoor Recreation, Education, and Leadership*, 5(2), 112-114.
- Cutrona, C. E. & Russell, D. W. (1987). The provisions of social relationships and adaptation to stress. *Advances in Personal Relationships*, 1, 37-67.
- Fields, A. (2010). *Leadership self-efficacy in university co-curricular programs*. Unpublished doctoral dissertation. University of the Pacific, Stockton, CA.
- Gass, M. A. (1987). The effects of a wilderness orientation program on college students. *Journal of Experiential Education*, 10(2), 30-33.
- Gillespie, N. (2012). Measuring trust in organizational contexts: an overview of survey-based measures. In Lyon, F., Mollering, G. and Saunders, M.N.K (Eds.) *Handbook of Research Methods on Trust*. Pp. 175-188. Northampton, MA: Edward Elgar.
- Kuh, G.D. & Hu, S. (2001). The effects of student-faculty interaction in the 1990's. *The Review of Higher Education*, 24(3), 309-322.
- Oliver, B. (2010). *Talking about alcohol: Outcomes of a social norms training for outdoor orientation program leaders*. Unpublished masters thesis, University of New Hampshire, Durham.
- Pascarella, E. T. & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research*. San Francisco: Jossey-Bass.
- Pascarella, E. T. & Terenzini, P. T. (2005). *How college affects students; A third decade of research*. Vol. 2. San Francisco, CA: Jossey-Bass.
- Vlamiš, E, Bell, B.J., & Gass, M.A. (2011). Effects of a college adventure program on student development behaviors. *Journal of Experiential Education*, 34(2).

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Moderators of Change in Biophilia Following an Outdoor Orientation Program

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Background

Researchers have acknowledged the natural world as a powerful component of Wilderness Experience Programs (WEP), often serving as both a teacher and classroom (Friese, Hendee, & Kinziger, 1998; Herdman, 1994; Mitten, 2009). Yet, the human-nature relationship has not always been emphasized within adventure education (AE), and many programs (e.g. Outward Bound; OB) have focused primarily on interpersonal relationships (Hayllar, 1990; Miles, 1995; Priest, 1986). Some have argued for greater acknowledgement of the human-nature relationship in a definition of AE (Beringer, 2004; Henderson, 1999). Biophilia provides a theoretical framework for describing how people relate to the natural world, serving as a lens through which to better understand the human-nature relationship. Biophilia is “the innate tendency to affiliate with life and lifelike processes” (Wilson, 1984, p. 1), and the nine *biophilic expressions* (Kellert, 1997) illustrate unique ways of relating to the natural environment. Biophilia is believed to be evolutionarily ingrained and expressed across humanity, yet one’s individual pattern of biophilic expression is directly influenced by the interplay of social learning, direct experience in the natural world, and cultural context (Kellert, 1997; Shorb & Schnoeker-Shorb, 2010).

Previous research exploring change in participants’ scores on the Kellert-Shorb Biophilic Values Indicator (KSBVI) in a WEP (Meltzer, Bobilya, Mitten & Faircloth, 2013) revealed statistically significant change from pre to post in eight of the nine biophilic expressions: scientific, aesthetic, naturalistic, moralistic, humanistic, negativistic, symbolic, and utilitarian (no change in dominionistic). However, no research has explored moderators of change in participants’ biophilic expressions. Therefore, the purpose of this study was to examine the effects of various moderators of change in participants’ biophilic expressions over the course of a WEP.

Methods

This paper presents findings from a study conducted with the Prescott College New Student Orientation program in the fall of 2012. The program is a 21-day OB-type trip including backpacking, a solo experience, and an academic component. This quantitative investigation utilized data from a larger mixed-methods study (Creswell, 2009) of participants’ pre and post KSBVI surveys. The KSBVI is a 99-point questionnaire consisting of a series of statements on a four-point Likert scale (strongly agree to strongly disagree; Shorb & Schnoeker-Shorb, 2010). This survey reveals each person’s *biophilic profile*, or their relative expressions of each of the nine biophilic responses at a given moment in time. Data were removed listwise for the purpose of analyses, resulting in a sample of 85 participants with complete data. Three moderators were identified and tested using ANCOVA models: a) prior WEP experience, b) prior summer camp experience, and c) preference for time spent in nature. Pre scores were included as covariates in each model (Rausch, Maxwell, and Kelly, 2003) allowing for an investigation of the influence of prior experience in the natural world on observed changes in participants’ biophilic expressions.

Results

Table 1 presents the results of ANCOVA models testing the moderating effects of prior WEP and prior camp experiences on eight of the KSBVI subscale scores. Participants' preferences for time spent in nature (alone or with others) did not moderate any outcome effects on the KSBVI. In other words, the Prescott WEP had the same effect despite participants' preference for solitude or companionship. Prior camp (yes, $n = 56$; no, $n = 24$) and prior WEP (yes, $n = 36$; no, $n = 44$) experience variables were both treated as dichotomous. Prior WEP experience moderated outcomes on the aesthetic, negativistic, humanistic, and moralistic subscales. Prior summer camp experience moderated outcomes on the aesthetic and moralistic subscales. In other words, individuals with prior camp experience reported higher aesthetic and moralistic expressions than their no camp counterparts. By contrast, individuals with no prior WEP experience reported higher expressions on the aesthetic, moralistic and humanistic indicators than their prior WEP counterparts. Additionally, individuals with no prior WEP experience reported lower negativistic expressions than their counterparts.

Table 1

Means, standard deviations, and F-values examining moderators of KSBVI post scores

Subscale	μ_{camp}	$\mu_{\text{no camp}}$	F	μ_{WEP}	$\mu_{\text{no WEP}}$	F
Aesthetic	33.36	33.33	3.23*	32.83	33.78	4.13*
Negativistic	22.82	23.23	.03	23.58	22.43	4.15*
Humanistic	33.52	32.63	.77	32.47	33.89	4.37*
Naturalistic	38.62	36.83	.64	38.44	37.78	.58
Symbolic	20.45	20.25	.62	20.31	20.45	.62
Scientific	32.49	31.39	.70	31.86	32.40	2.37 [†]
Utilitarian	25.27	25.24	1.22	25.31	25.22	.78
Moralistic	40.06	39.17	3.39*	39.13	40.33	5.21**

[†] = .10; * $\leq .05$; ** $\leq .01$

Note. df for all F tests were (2,85); μ = Mean

Discussion

These results show that both prior WEP and prior camp experiences moderated some biophilic expressions, while preference for time spent in nature did not have any effect. Participants with prior WEP experience exhibited smaller increases in the aesthetic, humanistic and moralistic expressions, and a smaller decrease in the negativistic expression, indicating less change on these subscales. Participants with prior camp experience exhibited greater increases on the aesthetic and moralistic expressions. It is unclear why prior WEP experience resulted in decreased change in expression, while prior camp experience caused increased change. These results show that the prior WEP and prior camp experiences continued to have some effects on participants' biophilic expression during the Prescott WEP. In other words, these prior program experiences affected participants' ongoing relationships with the natural world. These findings support that the human-nature relationship is a fundamental part of AE programs (Beringer, 2004) and is worthy of continued study. The results continue to raise questions about the influence of "repeated reinforcement" on one's biophilic expressions (Kellert, 1996, p. 37). Some expressions were moderated by prior WEP or prior camp experiences, while others were not.

Previous results indicated significant change for all participants on eight of the nine KSBVI indicators (Meltzer, et al., 2013). The current study intended to explore in more detail the effects

of participants' characteristics on this change. Practitioners and researchers should explore the influence of program components on individuals' biophilic expression (e.g., curriculum, course components, staff training). In addition, continued analysis of KSBVI outcome data may indicate additional moderators of program effects (e.g. duration of program and program type). Finally, continued use of the KSBVI on AE programming may deepen our understanding of the influence of WEP course components on the human-nature relationship.

References

- Beringer, A. (2004). Toward an ecological paradigm in adventure programming. *Journal of Experiential Education*, 27(1), 51-56.
- Creswell, J. (2009). *Research design: qualitative, quantitative, and mixed methods approaches*. (3rd ed.). CA: Sage.
- Friese, G., Hendee, J. C., & Kinziger, M. (1998). The wilderness experience program industry in the United States: Characteristics and dynamics. *Journal of Experiential Education*, 21(1), 40-45.
- Hayllar, B. (1990). Adventure education. In McRae, K. (Ed.), *Outdoor and environmental education: Diverse purposes and practices* (pp. 54-74). South Melbourne, Australia: Macmillan.
- Henderson, R. (1999). The place of deep ecology and ecopsychology in adventure education. In Miles, J. & Priest, S. (Eds.), *Adventure Programming* (pp. 439-444). State College, PA: Venture.
- Herdman, P. (1994). When wilderness becomes a classroom. *Educational Leadership*. 52(3), 15-19.
- Kellert, S. R. (1997). *Kinship to mastery: Biophilia in human evolution and development*. Washington, D.C.: Island Press.
- Kellert, S. R. (1996). *The value of life: Biological diversity and human society*. Washington, D.C.: Island Press.
- Meltzer, N., Bobilya, A. J., Mitten, D., & Faircloth, W. B. (2013, November). *An investigation of the effect of an outdoor orientation program on participants' biophilic expressions*. Paper presented at the 41st Annual International Conference of the Association for Experiential Education: Symposium of Experiential Education Research (SEER), Denver, CO.
- Miles, J. (1995). Wilderness keeping by wilderness educators. In Kraft, R. J. & Kielsmeier, J. (Eds.), *Experiential Learning in Schools and Higher Education*, (pp. 112-118). Boulder, CO: Association of Experiential Education.
- Mitten, D. (2009). Under our noses: The healing power of nature. *Taproot Journal*, 19(1), 20-26.
- Priest, S. (1986). Redefining outdoor education: A matter of many relationships. *The Journal of Environmental Education*, 12(4), 27-28.
- Rausch, J. R., Maxwell, S. E., & Kelly, K. (2003). Analytic methods for questions pertaining to a randomized pretest, posttest, follow-up design. *Journal of Clinical Child and Adolescent Psychology*, 32, 467-486.
- Shorb, T. L., & Schnoeker-Shorb, Y. A. (2010). *The Kellert-Shorb biophilic values indicator: A workbook: Exploring your hidden potential to connect with nature*. Prescott, AZ: Native West Press.
- Wilson, E. O. (1984). *Biophilia*. Cambridge, MA: Harvard University Press.

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Relationship Between Outdoor Experience and Body Image in Female College Students

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The aim of this study is to add to the growing body of research attempting to understand factors that impact women's body image with a particular focus on helping researchers, clinicians, and practitioners better understand connections between outdoor experience and body image. Past trends suggest the need for further study on this topic with larger and more varied populations (Arnold, 1994; Kiewa, 2000; Mitten & Woodruff, 2010). This study used a survey distributed to over 600 women to explore the relationship between various aspects of outdoor activity, such as time, frequency, and type of activity, with healthy body image.

Background

Within the United States, there is disturbing evidence of unhealthy and negative self-perceptions of individual body image, especially among women (Cash & Pruzinsky, 2004; Sinclair, 2006). Research is mixed when exploring the influence of exercise on women's lives. It is associated with greater body satisfaction (Henry, Anshel, & Michael, 2006; Kiewa, 1996) though studies by Imm and Pruit (1991) and Frederick and Shaw (1995) determined that when a negative body image was a key motivator for exercise, women continue to exercise despite significant discomfort and lack of enjoyment. In contrast, results have been consistently positive in research exploring how outdoor exercise affects women's body image (Kiewa, 1996; McDermott, 2004). Research is also positive about the broad benefits of being in the natural world and a plethora of research about the importance of nature to human health has emerged in the last ten years (Ewert, Mitten, & Overholt, in press). Past studies of 86 women (West-Smith, 1997) and 39 women over 40 (Woodruff, 2009) indicated that women who participated in short-term outdoor adventure experiences believed that their participation made a difference in how they perceived their bodies. Lisa West-Smith (1997) surveyed women who were regularly active, meaning they had participated in outdoor adventures at least on a monthly basis for the past year and Sarah Woodruff (2009) surveyed women over 40 and who participated in a five-day outdoor trip found that they had an increased positive body image as compared to the 2.5 general average mean body image and a control group of women not engaging in activities in the outdoors. Moreover, they found that active outdoorswomen were able to rebuff cultural and stereotypical definitions of beauty and, as a result, maintain a more positive body image.

Methods

A recently crafted and well-piloted survey, modified from Woodruff's (2009) and West-Smith's (1997) surveys, was designed to measure the relationship between body image and outdoor activity among women. The 41-item survey used in this investigation included demographic questions, Likert Scale questions, open-ended questions, and the Body Cathexis Scale (BCS). Reliability of the BCS "has been established in reports of a test-retest coefficient of between .84 and .91" (West-Smith, 1997, p. 44). This survey was distributed Spring 2013 via email to 625 women ages 18 through 75 enrolled as students at a small liberal arts college in Arizona that has an emphasis on adventure education and field-based courses. The BCS mean was computed for each respondent and followed by a t-test for equality of means for a variety of factors.

Results

A total of 186 women have completed the survey sufficiently for analysis. The results show that the women have a higher perceived body image (BCS mean=3.45) than the average U. S. population of women (3.31), but that this population's BCS mean results are not statistically different than in West-Smith's group (3.42) or Woodruff's group (3.51). Analysis of the relationship between age and body image in this study's participants found no statistically significant correlation between the respondent's age and their BCS mean. Further, an analysis of the respondent's education level (bachelors in progress, masters in progress, graduate degree completed) also found no statistically significant correlation with their BCS mean.

Previous studies have found that as women's level of participation in outdoor activities increased the more important it was for them to be physically effective and the less they worried about physical attractiveness. Data from this study, in which the study population has a high level of outdoor physical activity, shows a strong positive correlation (i.e. *r* of .00097 for effective vs. all ineffective categories) between participant's perceptions of their personal physical effectiveness and their BCS mean. For participants in this study, the impact of time spent outdoors on body image is a positive trend in the BCS mean as people experience greater: duration of concurrent overnights outdoors; number of overnight trips; and total number of overnights outdoors. Further, as shown below, the average BCS is lowest for people who have never experienced an overnight outdoors and increases with the experience of one to three nights outdoors and with the experience of four or more concurrent nights outdoors. Similarly, the BCS average trends higher the greater total number of overnight trips people have reported as well as the total number of nights people have reported spending outdoors.

Duration of concurrent overnights outdoors	BCS average	Total estimated number of overnight trips	BCS average	Total estimated number of overnights outdoors	BCS average
none	3.2	0-6	3.4	<25	3.4
1-3 nights	3.4	7-15	3.4	25-74	3.4
4-7 nights	3.5	16-21	3.4	75-99	3.4
1 week +	3.5	22-30	3.5	100-149	3.5
2 weeks +	3.5	31-40	3.5	150 - 285	3.5

While there is not statistical significance between the BCS averages across the different duration of concurrent overnights outdoors groups or total estimated overnight trips, there is statistical significance between people who have spent less than 20 total nights outdoors and people who have spent more than 250 nights outdoors, with the *t*test showing a result of *r*(0.016). Additional analysis to be presented at the conference will include the impacts of specific outdoor activities and venues and the current amount and intensity of outdoor activity.

Discussion

Becoming aware of the physical and psychosocial variables surrounding body image may support the development of more effective treatment programs for certain body image disorders. Making contributions to this particular area of inquiry also has the potential to be preventive, illuminating individuals and populations who may be at risk for poor body image and related issues. The results of this study support that psychosocial variables may influence body image and adds to the growing data about the influence of outdoor activity on women's body image.

References

- Arnold, S. C. (1994). Transforming body image through women's wilderness experiences. In E. Cole, E. Erdman, & E.D. Rothblum (Eds.), *Wilderness therapy for women: The power of adventure* (pp. 43-54). NY, New York: Hawthorne Press.
- Cash, T.F., & Pruzinsky, T. (2004). Understanding body images: Historical and contemporary perspectives. In T.F. Cash & T. Pruzinsky (Eds.), *Body Image: A handbook of theory, research, and clinical practice* (pp. 3-12). NY, New York: Guilford Press.
- Ewert, A., Mitten, D., & Overholt, J. (in press). *Human health and the natural environment*. Oxfordshire, UK: Cabri Press.
- Frederick, C. J., & Shaw, S. M. (1995). Body image as a leisure constraint: Examining the experience of aerobic exercise classes for young women. *Leisure Sciences, 17*, 57-73.
- Henry, R.N., Anshel, M.H., & Michael, T. (2006). Effects of aerobic and circuit training on fitness and body image among women. *Journal of Sport Behavior, 29*, 281-303. Retrieved on May 3, 2007 from Research Library.
- Imm, P.S., & Pruitt, J. (1991). Body shape satisfaction in female exercisers and non-exercisers. *Women and Health, 17*, 87.
- Kiewa, J. (1996). Body Satisfaction and Competence: Hand and Glove? *Social Alternatives, 15*, 7-10. Retrieved May 28, 2007, from Academic Search Elite database.
- Kiewa, J., (2000). Outdoor adventure and body image: A change in focus. In L. West-Smith (Ed.), *Body stories: Research and intimate narratives on women transforming body image in outdoor adventure* (pp. 11-24). Edgewood, KY: Adventurehaven Press.
- McDermott, L. (2004). Exploring intersections of physicality and female-only canoeing experiences. *Leisure Studies, 32*, 283-301.
- Mitten, D. & Woodruff, S. (2010). The impact of short term adventure experiences on body image perceptions of women over 40. *Journal of Experiential Education 32*(3), 322-326.
- Sinclair, S.L. (2006). Object lessons: A theoretical and empirical study of objectified body consciousness in women. *Journal of Mental Health Counseling, 28*, 48-68.
- West-Smith, L. (1997). *Body image perception of active outdoorswomen: Toward a new definition of physical attractiveness*. Ann Arbor, MI: University of Michigan.
- Woodruff, S. K. L. (2009). *The impact of short term adventure experiences on body image perceptions of women over forty*. Prescott College.

The Perceived Significant Life Experience of a University Outdoor Education Course: Quantitative Findings

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Background

This quantitative study of a university *outdoor education* (OE) course as a significant life experience (SLE) builds upon previous qualitative research (Wigglesworth & Heintzman, 2013, in press). The study was retrospective in nature and its theoretical framework emerged from SLE research in which participants are asked to recall experiences that have contributed to future decisions about environmental protection (Chawla, 1998). A life experience is significant if: it changes a person in some way (i.e., perspective, behaviour or belief); it constitutes a new or extraordinary experience; it provides something useful for the future; specific meaning is derived from or attributed to it; one considers it to have been caused by something other than mere chance; and its nature, magnitude, or timing is noteworthy (Daniel, 2003).

Outdoor and environmental education literature suffers from a problematic divide between quantitative and qualitative research. Quantitative research tends to focus on cognitive understandings, which are *outcomes* of the program, whereas qualitative research tends to focus on affective reactions, and the *development* of these outcomes (Cachelin, Paisley, & Blanchard, 2008). The present investigation addressed this divide by quantitatively exploring whether qualitative findings on the components and processes of an OE course that led to it being considered a SLE and the significant life impacts (outcomes) of the course (Wigglesworth & Heintzman, 2013, in press) could be generalized to a larger group. The primary purpose was to discover if the OE course had lasting impacts and whether the course was perceived as a SLE. A secondary purpose was to develop a greater understanding of the long-term influences that OE courses have on participants' intrapersonal, interpersonal and environmental relationships as well as the processes that led to these influences.

Methods

The study involved a purposive intensity sample of University of Ottawa alumni and students who had taken one of the university's summer or winter OE courses between 1975 and 2009. The sample was recruited through the university's alumni directory, notices in the alumni newsletters, former course instructors, emails and presentations to selected classes, posters at the university, and the snowballing technique.

Data was collected through a web-based survey questionnaire divided into three parts: A) the summer course; B) the winter course; and C) demographic and other information. Parts A and B included the following sub-sections: 1. background information, 2. course outcomes (impacts), 3. the course as a significant life experience, 4. course dimensions (processes) and 5. course components. SLE was measured with an eight item scale, with the first six items corresponding to the six characteristics of a SLE identified by Daniel (2003). Qualitative findings from the earlier study on this topic (Wigglesworth & Heintzman, 2013, in press) contributed to the development of the outcomes and processes scales. Descriptive and parametric statistical tests were conducted to analyze the data.

Results

Forty-six participants completed the questionnaire: 35 responses for the summer course, and 30 for the winter course, which totalled 65 *separate* course responses. Thirty-two participants were female, and 14 participants were male. Seventy-six percent of participants were

between 20 and 29 years of age and 66 percent of participants enrolled in the courses after 1990. The mean value for years since taking the course was approximately 11 for both courses.

With a Likert scale that was anchored at 1 for “strongly disagree” and 7 for “strongly agree,” the mean score for the SLE item “the course was a significant life event for me” was 6.09 and 6.10 for the summer and winter courses respectively. For all but one of the 8 SLE scale items, the mean scores were 5.46 or higher; however, the mean for the SLE item “caused by something other than mere chance” was much lower (3.03 for summer and 2.87 for winter) and thus demonstrates that participants were discriminating between items. Nevertheless this item had a much higher standard deviation so for some participants the experience was caused by mere chance but for others was influenced by “God, a guiding force, or a higher power.”

The item “attitude toward OE programs” had the highest mean score of the significant life *impacts* for both the summer (6.60) and winter courses (6.67). On the whole, the mean values were slightly higher for environmental impacts than for intrapersonal and interpersonal impacts. With respect to *course components* contributing to a SLE the solo experience (6.55) and the canoe trip (6.53) had the highest mean scores for the summer course while winter camping (6.76) and the 24 hour trio (6.75) had the highest mean scores for the winter course.

Pearson correlations were run between the processes and a SLE for both the summer and winter course data combined. The processes of “group living” ($r=.492$), “opportunities for accomplishment” ($r=.437$), “nature setting” ($r=.421$), “course facilitation” ($r=.421$) and “opportunities for challenge” ($r=.421$) were significantly correlated with a SLE at the $p < .001$ level. “Opportunities for reflection” ($r=.392$), “opportunities to face fears” ($r=.301$) and “opportunities to be outside one’s comfort zone” ($r=.275$) were significant at the $p < .05$ level. Only “bilingual setting” did not have a significant correlation with a SLE.

Independent t-tests were run according to season for each of the course impacts, processes and SLE characteristics. Only two variables were significantly different at $p < .05$. The process variable of “course facilitation” was significantly higher for winter participants at $t(63) = -2.04, p = .04$; and the outcome variable of “practice of responsible environmental behaviour” was significantly higher for summer participants at $t(63) = 2.05, p = .04$.

Discussion

The present findings suggest that for many participants the university winter and summer OE courses had lasting impacts and were perceived to be significant life experiences. The only low score on the SLE scale was the item “caused by something other than mere chance” which may reflect the sample from a public university in contrast to Daniel’s (2003) Christian sample.

In regards to significant life impacts, one of the courses’ aims was to “sensitize student[s] to the ecological milieu and to the use and teaching of the basic principles of conservation and the use of the environment.” Consequently, it is understandable that the environmental impacts had relatively high mean scores. Interestingly, there were also course objectives related to intrapersonal and interpersonal objectives, yet the environmental impacts yielded higher scores. A possible reason for this is *how* the course objectives were practically implemented; perhaps instructors focused on students’ environmental relationships throughout course facilitation.

“Group living” was the process most strongly correlated with a SLE. This finding is consistent with literature that suggests the group is an influential element of outdoor adventure education (McKenzie, 2000). It also supports the group experience theme from the earlier qualitative portion of this study where interview participants perceived the group experience in the OE course, including conflict resolution, teamwork and communication, as bringing about a significant life impact (Wigglesworth & Heintzman, in press).

The second strongest correlation between the process variables and a SLE was “opportunities for accomplishment.” This finding confirms a sub-theme from the previous qualitative part of this study wherein personal challenge and/or accomplishment contributed to significant life impacts (Wigglesworth & Heintzman, in press). “Opportunities for accomplishment” aligns well with one of Daniel’s (2003) central themes that participants refined or changed the way they viewed themselves, other group members, and their circumstances through being placed in challenging situations where they had to contend with stress, dissonance, uncertainty and new experiences. Similarly, McKenzie (2000) noted that inherent in outdoor activity is the element of incremental challenge, and a lack of success and challenge were detrimental to achieving program outcomes. Further, McKenzie found that challenge led to positive program outcomes and lack of challenge led to negative program outcomes.

With respect to differences between the summer and winter courses, the process variable of “course facilitation” was reported significantly higher for winter participants. One reason as to why “course facilitation” was significantly higher for the winter participants could be that the winter course was more of a novel or new experience than the summer course. As a result, the students were more dependent on the instructors’ facilitation. Furthermore, the risks and dangers could have been perceived as greater in the winter course due to below freezing temperatures. Therefore, course facilitation could have been perceived by the students as more important for survival in winter weather conditions.

References

- Cachelin, A., Paisley, K., & Blanchard, A. (2008). Using the significant life experience framework to inform program evaluation: The nature conservancy’s wings and water wetlands education program. *Journal of Environmental Education*, 40(2), 2-14.
- Chawla, L. (1998). Significant life experiences revisited. *Journal of Environmental Education*, 29(3), 11-21.
- Daniel, B. (2003). *The life significance of a spiritually oriented Outward Bound-type wilderness expedition*. (Doctoral dissertation, Antioch University New England, 2003).
- McKenzie, M. (2000). How are adventure education program outcomes achieved? A review of the literature. *Australian Journal of Outdoor Education*, 5, 19-28.
- Wigglesworth, J., & Heintzman, P. (2013). A qualitative study of the perceived significant life outcomes of a university summer outdoor education course. *Journal of Outdoor Recreation, Education, and Leadership* 5(2), 173-176.
- Wigglesworth, J., & Heintzman, P. (in press). A summer university outdoor education course as a significant life experience: Process themes. In E. Gomez (ed.) Proceedings of the 2013 Northeastern Recreation Research Symposium. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.

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Growing Girls' Leadership through Outdoor Programming: Findings about What Matters from Girl Scouts of the U.S.A.

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Background

Girl Scouting (GS) is fundamentally about developing girls as leaders – growing their courage, confidence, character, and ability to make the world a better place. It does this by providing them with opportunities to build leadership skills (outcomes) related to Discovering, Connecting and Taking Action (GSUSA, 2008), and by engaging them in the processes of learning by doing, cooperative learning, and girl-led activities (James & Bastiani Archibald, 2009).

There is considerable evidence that participating in outdoor programming also supports young people's leadership development, particularly their self-skills and beliefs (self-awareness, confidence, internal locus of control), interpersonal and communication skills, decision making, perseverance and independence (Rickinson et al., 2004; Hattie et al., 1997).

To investigate how and how much early adolescent girls participate in the outdoors through GS and to examine the leadership benefits associated with their outdoor involvement, the Girl Scout Research Institute (GSRI) recently conducted a national study. Two theoretical frameworks informed the analysis and interpretation of data from this study. The National Research Council's (2002) taxonomy of features of out of school time (OST) programs that promote positive youth development provided a foundation for our analyses of the specific qualities of girls' outdoor experiences that promote leadership. In particular, we focused on supportive relationships, opportunities for skill building, and support for efficacy and mattering (Eccles & Gootman, 2002). Additionally, contemporary theories of motivation linking expectancies and values to performance (Wigfield & Eccles, 2002) guided our thoughts on how findings about girls' experiences could be related to the possible structuring of experiences for adult volunteers.

Methods

The study involved an online survey that was administered at a single time point in the Spring of 2012. Participants were 2,862 girls who represented 16 states across the country. Girls ranged in age from 8 to 14 years, with the mean age being 10.8 years. The sample was 84% White, 6% African-American, 6% Asian, and 7% Hispanic.

In the study, leadership was defined as girls' progress towards four Girl Scout leadership outcomes and environmental stewardship. The Girl Scout outcomes were: (1) Developing a Strong Sense of Self; (2) Seeking Challenge in the World; (3) Cooperation and Team Building; and (4) Resourceful Problem Solving. Environmental Stewardship was conceptualized as connection with, concern for, and commitment to the environment. It was assessed with multiple items, three of which were borrowed from The Nature Conservancy's 2011 Youth Poll (TNC, 2011). A variety of statistical techniques (descriptive, correlation, and multiple regression analyses) were employed, and qualitative data were examined for themes.

Results

Girls are getting outdoors in GS. 97% of girls participated in at least one outdoor program in GS during the school year, and nearly 40% participated on a monthly basis. Monthly participants tended to engage in outdoor play, field trips, volunteering for environmental causes, and camping. Half of girls said they could not do particular outdoor activities if not for GS.

Regular (monthly) outdoor exposure is a key driver of impact. When girls participate in an outdoor activity regularly (monthly), they make better progress towards the leadership outcomes of Seeking Challenge and Resourceful Problem Solving. Girls do not experience the same benefits from merely doing a variety of different outdoor activities on a more occasional basis.

Environmental service and casual outdoor activities contribute to girls' leadership.

Casual outdoor activities included playing outdoors, walking outdoors, and participating in outdoor field trips. Three-fourths of girls played outdoors in GS, and more than two-thirds participated in environmental service through GS. Girls participated in these activities at equivalent levels regardless of their SES or race/ethnicity, and doing so boosted their leadership and environmental stewardship.

Outdoor participation strengthens the relation between socioeconomic status (SES) and girls' perceptions of the impact of Girl Scouting.

Lower SES girls who get more exposure to the outdoors in GS report the greatest impact of GS. For example, in comparison with their higher SES peers, lower SES girls more strongly agree with the statement "In Girl Scouts, I learned skills that will help me do better in school." However, lower SES girls with more frequent outdoor exposure report even stronger agreement than do girls from similar households with fewer outdoor experiences in GS.

Attending camp plays a more subtle role in leadership development. In this study, girls' attendance at Girl Scout weekend or resident camp was *not* a direct predictor of their leadership. However, it appeared to exert indirect influence through outdoor exposure and cooperative learning. Camping was also girls' most memorable outdoor experience in GS.

Discussion

Our findings highlight the importance to leadership development of girls' monthly involvement in the outdoors and their participation in environmental service and casual outdoor activities. Such experiences, which do not demand much specialized equipment or training, seem to give girls opportunities to practice cooperation and teamwork, problem solving, and trying things they thought they couldn't do in very low-stakes, socially supportive contexts. Environmental service also seems to provide girls with a sense of purpose and to socialize them into an environmentalist mindset – one that promotes connection, concern, and commitment (action) for the environment.

In that everything girls do outdoors in GS must be supported by an adult, these results also speak indirectly to the preparation of adult volunteers. To increase the likelihood that they will be active in or open to taking girls outdoors, organizations such as GS may want to focus on increasing value and decreasing social and emotional costs of outdoor participation for adult volunteers. Ways of increasing value for volunteers include incrementally immersing them in fun, adult-oriented outdoor experiences and educating them of the benefits of outdoor exposure

for girls. Reducing costs (related to low confidence, discomfort, and inconvenience) might be addressed by providing easy access to coping models who demonstrate how outdoor proficiency can be attained and/or by offering options that require less of their own direct involvement, e.g., troop camp possibilities with external facilitators or the possibility of delegating outdoor activities to other adults.

References

- Eccles, J. & Gootman, J. (2002). *Community programs to promote youth development*. Washington, DC: National Academies Press
- Girl Scouts of the USA. (2008). *Transforming Leadership: Focusing on Outcomes of the New Girl Scout Leadership Experience*. Available online at www.girlscouts.org/research/publications/gscoutcomes/transforming_leadership.asp
- Hattie, J., Marsh, H.W., Neill, J.T. and Richards, G.E. (1997). Adventure education and outward bound: out-of-class experiences that make a lasting difference, *Review of Educational Research*, 67, 1, 43–87.
- James, T., & Bastiani Archibald, A. (2009). *Transforming Leadership Continued: A Guide to Understanding the Girl Scout Processes*. Available online at www.girlscouts.org/research/pdf/transforming_leadership_continued.pdf
- Hattie, J., Marsh, H.W., Neill, J.T. and Richards, G.E. (1997). Adventure education and outward bound: out-of-class experiences that make a lasting difference, *Review of Educational Research*, 67 (1), 43–87.
- Rickinson, M., Dillon, J., Teamey, K., Morris, M., Choi, M. Y., Sanders, D., and Benefield, P. (2004). *A review of research on outdoor learning*. Shrewsbury, UK: Field Studies Council. Available online at: www.fieldstudies-council.org/documents/general/NFER/A_review_of_research_on_outdoor_learning.pdf
- The Nature Conservancy (TNC) (2011). *Kids these days: Why is America's youth staying indoors?* Available online at www.nature.org/newsfeatures/kids-in-nature/kids-in-nature-poll.xml
- Wigfield, A. & Eccles, J.S. (2002). The development of competence beliefs, expectancies for success, and achievement values from childhood through adolescence. In A. Wigfield & J.S. Eccles (Eds.), *Development of achievement motivation* (pp. 91-120). San Diego, CA: Academic Press.

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Participant Profiles, Antecedent Predictors, and Developmental Outcomes of Rural Youth Involvement In Outdoor Activities Throughout Adolescence: A Longitudinal Study

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Adolescents spend 40-50% of their waking hours in discretionary activities, representing an important context for youth development (Verma & Larson, 2003). Structured and unstructured outdoor activities have been acknowledged as especially promising venues for positive youth development (PYD, Mainella, Agate & Clark, 2010; Sibthorp, 2010). In the youth development and activity literature, however, outdoor activities often are undifferentiated from other options, with researchers emphasizing more generic characteristics such as adult supervision, program structure, and skill-building opportunities (see Mahoney, Larson, & Eccles, 2005). Conversely, many outdoor education scholars highlight the distinctiveness of outdoor programs, yet research designs are frequently limited to brief time periods or relatively specialized interventions; clear links between outdoor activity involvement over time and the achievement of key long-term developmental tasks are comparatively under-researched.

The present study aimed to address some of the gaps in these literatures by examining the ways outdoor activity involvement throughout adolescence relates to important developmental outcomes. Analysis was based on a longitudinal dataset from a study of rural youth in economically vulnerable but naturally resource-rich communities in northern New Hampshire (Tucker, Cox, Sharp, Van Gundy, Rebellon, & Stracuzzi, 2013). The three main objectives of this study were: (1) to identify profiles of youth who fit different patterns of participation in outdoor activities over time; (2) to explore antecedent factors that predict the profiles that emerge from the data; and (3) to explore differences in developmental outcomes associated with the profiles of participation that were identified. Variables were selected from the PYD literature and recent studies of educational attainment in rural communities, which stress the importance of *social capital* (see also Calvert, Emery, & Kinsey, 2013). PYD research typically focuses on setting-level features that support development, whereas a social capital perspective centers on the benefits individuals derive from relationships in families, institutions, and communities.

Data and analysis

Data was drawn from a larger study that surveyed youth across all public schools in the northernmost New Hampshire county at 7th grade, 8th grade, 10th grade, and 12th grade, from 2008-2013. Analyses included only respondents who completed the survey at all time points (n=186), representing 49% of all area youth who advanced from 7th to 12th grade during this period. Person-centered analyses on activity involvement items across the four waves of data revealed patterns of participation in structured and unstructured outdoor activities. Two-step cluster analysis in SPSS produced a three-group solution which met the quality criteria for 'good' fit: (1) Intermittent to no involvement in any outdoor activities (36%, n=62); (2) Consistently involved in unstructured outdoor activities with little to no involvement in structured outdoor activities (41%, n=72); and (3) Consistently involved in structured and unstructured outdoor activities (23%, n=40). Six percent (n=12) of cases were excluded due to missing data.

Chi-square (for categorical variables) and ANOVA (for continuous variables) techniques were then used to identify differences in predictors and outcomes for profile clusters (alpha estimates ranged from .72 to .88). Core variables were as follows:

Participant profiles were calculated by including responses (Yes/No) to participation in

structured (e.g., 4-H, Scouts) and unstructured (e.g., hiking, fishing) outdoor activities at 7th, 8th, 10th, and 12th grades.

Antecedent predictors were calculated by including the following wave 1 (7th grade) variables: adolescent gender; parents' level of educational attainment; perception of financial strain; parents' marital status; and distance (in minutes) from school.

Developmental outcomes were calculated by including the following variables at wave 4 (12th grade): school connectedness; school achievement; community attachment; commitment to the area; community voice; expectations for future; appreciation for the outdoors; perception of future opportunity; substance use; and self-concept domains.

Results

Between group differences for antecedent predictors of involvement (7th grade) included: No significant difference in cluster placement for gender ($\chi^2 = 1.303, p = .521$), distance to school ($F = .384, p = .682$), or adolescent perception of financial strain ($F = 1.049, p = .353$). However, parents' educational attainment was significantly associated with the activity clusters ($F = 7.815, p = .001$); adolescents in group 1 had parents with a lower level of educational attainment compared to both other groups (Tukey post hoc, $p < .01$). Youth with parents were still married were more likely to be members of both groups 2 and 3 ($\chi^2 = 9.801, p = .002$) and less likely to be in group 1 ($\chi^2 = 9.408, p = .002$), compared to adolescents with unmarried parents. Finally, Table 1 shows differences in developmental outcome areas.

Table 1: Means (and standard deviations) for Adolescent 12th Grade Developmental Outcomes by Outdoor Activity Cluster ^a

Outcomes at 12 th grade	Activity Profile Group			F-value
	1 = Intermittent to no involvement in either (N = 62)	2 = Consistently involved in unstructured only (N = 72)	3=Consistently involved in both (N=40)	
School connectedness ^a	3.52 (1.31)	3.84 (1.24)	3.96 (1.14)	1.82
Grades	6.68 (1.90)	7.41 (1.14)	7.35 (1.48)	4.33* 2>1
Future orientation outcomes				
Expect to get a secure job	5.23 (1.21)	5.53 (0.79)	5.40 (0.87)	1.62
Expect to finish college	5.02 (1.55)	5.18 (1.72)	5.80 (0.46)	3.69* 3>1
Expect to have a successful career	5.18 (1.37)	5.51 (0.84)	5.40 (0.68)	2.05
Commitment to the area	2.33 (1.31)	2.59 (1.23)	2.80 (1.35)	1.62
Perception of future opportunity	3.82 (0.73)	4.12 (0.57)	4.09 (0.58)	4.44* 2>1
Community orientation outcomes				
Sense of voice	1.08 (0.73)	1.26 (0.73)	1.46 (0.91)	2.77
Community attachment	1.53 (0.73)	1.85 (0.73)	1.88 (0.68)	4.15* 3>1
Appreciation for the outdoors	1.22 (0.78)	1.83 (0.78)	1.89 (0.80)	13.0* 1<2,3
Self concept outcomes				
Self-esteem	2.31 (0.59)	2.34 (0.08)	2.34 (0.59)	0.05
Mastery	2.22 (0.48)	2.22 (0.49)	2.28 (0.54)	0.25
Behavioral outcomes				
Alcohol use	1.35 (1.48)	1.63 (1.60)	1.30 (1.40)	0.85
Cigarette use	1.33 (2.34)	0.82 (1.85)	0.73 (1.77)	1.45
Marijuana use	1.62 (2.43)	0.83 (1.67)	0.75 (1.68)	3.42* 1>2,3

Note. * $p \leq .05$. ^aSchool connectedness variable ranges from 0 = strongly disagree to 6 = strongly agree. Grades variable ranges from 1 = mostly F's to 9 = mostly A's. Future expectations variable ranges from 0 = not at all likely to 6 = very likely. Perception of opportunity variable ranges from 1 = strongly disagree to 5 = strongly agree. 0 = strongly disagree to 3 = strong agree. Behavioral variables range from 0 = no times to 6 = nearly every day.

Discussion and implications

Results indicate that sustained outdoor activity involvement throughout adolescence is associated with positive developmental outcomes in school achievement, future aspirations, and community attachment. These findings support the claim that participation in outdoor activities contributes to positive youth development. Of note is the near equivalence across all groups on *self-concept* variables. This finding challenges what has been a preoccupation in the outdoor education literature (see e.g., Neill, 2002), and implies a need to further understand the relationship between short-term program outcomes and long-term developmental processes, and perhaps to justify a continued focus on self-concept domains.

The concept of social capital is also useful in understanding patterns found in the data. Beames and Atencio (2008) argued that outdoor activities promote social capital so long as they are embedded within communities in meaningful ways; other research has associated social capital with rural educational attainment (Byun, Meece, Irvin, & Hutchins, 2012). The present analysis points to a positive relationship between outdoor activity involvement, community orientation, and educational expectations and attainment, suggesting that social capital might be one mechanism linking sustained activity participation and positive developmental outcomes. Antecedent differences between groups, however, suggest that outdoor activities may also exacerbate existing uneven distributions of social capital, in part through the influence more highly educated parents exert on children's activity choices (Bourdieu, 1986; Coleman, 1988; Laureau, 2003) – a formative resource less available to members of group 1. This finding supports Beames and Atencio's observation that further studies of social capital and outdoor activity participation should be sensitive to how their relationship is shaped by factors like social class, affiliation with schooling practices, and processes of identity formation. Future research on positive development through outdoor activity involvement could benefit from taking an ecological approach that addresses these factors more directly.

References

- Beames, S., & Atencio, M. (2008). Building social capital through outdoor education. *Journal of Adventure Education and Outdoor Learning*, 8(2), 99-112.
- Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241-258). New York: Greenwood.
- Byun, S., Meece, J. L., Irvin, M. J., & Hutchins, B. C. (2012). The role of social capital in educational aspirations of rural youth. *Rural Sociology*, 77(3), 355-379.
- Calvert, M., Emery, M., & Kinsey, S. (Eds.). (2013). *Youth programs as builders of social capital*. New Directions for Youth Development, No. 138. San Francisco: Jossey-Bass.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94(Supplement), S95-S120.
- Colocousis, C. R. (2008). The state of --- county: Local perspectives on community and change. (Issue Brief No. 7). Durham, NH: University of New Hampshire, The Carsey Institute.
- Laureau, A. (2003). *Unequal childhoods: Class, race and family life*. Berkeley, CA: University of California Press.
- Mahoney, J. L., Larson, R. W., & Eccles, J. S. (Eds.) (2005). *Organized activities as contexts of development: Extracurricular activities, after-school and community programs*. Mahwah, NJ: Erlbaum.
- Mainella, F. P., Agate, J. R., & Clark, B. S. (2011). Outdoor-based play and reconnection to nature: A neglected pathway to positive youth development. *New Directions for Youth Development*, 130(1), 89-104.
- Neill, J. (2002). Meta-analytic research on the outcomes of outdoor education. Paper presented to the 6th Biennial Coalition for Education in the Outdoors Symposium, Bradford Woods, IN.
- Sibthorp, J. (2010). Positioning outdoor and adventure programs within positive youth development. *Journal of Experiential Education*, 33(2), vi-ix.
- Tucker, C. J., Cox, G., Sharp, E. H., Van Gundy, K., Rebellon, C., & Stracuzzi, N. (2013). Sibling proactive and reactive aggression in adolescence. *Journal of Family Violence*, 28, 299-310.
- Verma, S. & Larson, R. (Eds.) (2003). *Examining adolescent leisure time across cultures: Developmental opportunities and risks*. New Directions for Child and Adolescent Development, No. 99. San Francisco: Jossey-Bass.

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Evaluation of the Hero's Journey Adventure Program for Adolescents with Serious Illness

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Background

The Hole in the Wall Gang Camp offers a free-of-charge adventure-based program for youth aged 16-18 living with serious and life-threatening illnesses. The program, Hero's Journey, engages participants through value-forming challenges, and teaches important life skills such as positive communication, self-reliance, and decision-making. One major feature of Hero's Journey is training in wilderness first aid, including a mock search and rescue. Other activities include outdoor challenges such as climbing a tower, teambuilding, journaling, map and compass work, and living outdoors. The Hero's Journey program is grounded in Joseph Campbell's 1949 book, "The Hero With A Thousand Faces," (Carlson & Cook, 2007). Crafted as a rite of passage to help youth answer "what's next?" as well as a developmentally-appropriate and challenging extension of the traditional camp program, in 2013, Hero's Journey served 67 adolescents aged 16-18 in groups of 11-17 over five sessions of 7 days each. One nurse, 5 counselors, 1-2 program administrators, and 2-3 volunteers supervised each session of Hero's Journey. Participants were youth living with hemophilia, sickle cell, HIV/AIDS, cancer, and metabolic disease.

Hero's Journey is one of several outdoor- and adventure-based challenge programs for people with disabilities and chronic illness. Recent research on similar programs has found that such programs can promote social performance (Alison, Negley, & Sibthorp, 2013), social skill development (Shirilla, 2009), socialization abilities, satisfaction, and outdoor skills (McAvoy, Smith, & Rynders, 2006), and achievement and sense of accomplishment (Holman, McAvoy, Rynders, & Goldenbe, 2003). However, the specific population of youth with serious and life-threatening illnesses is rarely examined in adventure and wilderness program research.

The theoretical framework for this study was Developmental Systems Theory. Developmental Systems Theory proposes multiple levels of influence (e.g., biology, family, social policies) involved in individuals' lives that must appropriately align with developmental trajectories in order for individual potential to become fully expressed (Damon & Lerner, 2008; Lerner & Castellino, 2002). The theory addresses the fit between youth and their contexts. Contexts with good fit are those with activities that are developmental-stage appropriate, interesting, and engaging, and that provide support via interactions with caring adults and peers, and opportunities for competence-building.

The purpose of the evaluation was to understand the outdoor challenge outcomes of Hero's Journey, and participants' satisfaction with the adventure activities. The evaluation questions were:

1. Are the outdoor challenge and satisfaction with adventure activities scales reliable?
2. Is there a difference in the outcome of outdoor challenge for youth who were more or less satisfied with the adventure activities?
3. Does adventure activity satisfaction predict the outcome of outdoor challenge?
4. What elements of the Hero's Journey program related to the outcome of outdoor challenge?

Methods

Parent or caregiver consent was obtained for 38 of the 67 Hero's Journey participants. Participants completed the questionnaires on their last evening at camp, during dinner preparations at their wilderness site. Eight quantitative questions comprised the outcome scale of "outdoor challenge." Examples of questions included "I was often confident during Hero's

Journey;” “Getting around Base Camp was easy for me,” and; “I liked having no running water or electricity.” Seventeen questions focused on program activity satisfaction. Four open-ended questions comprised the qualitative portion of the questionnaire and focused on suggestions for adventure-related program improvement, favorite moments, and engaging in unexpected experiences. Campers shared two iPads to complete the questionnaires through the QuickTap Survey app, which took 5-10 minutes per person. Campers responded very enthusiastically to the iPad method of data collection, indicating no hesitation in using this technology, even after living without technology for the previous six days. Interestingly, campers’ responses to the open-ended questions reflected both depth and breadth in responses, meaning that the use of iPads did not inhibit their abilities to type responses. Responses were uploaded through the app and analyzed after the iPads were returned to the main camp. Campers who had consent to participate used one iPad, and those without consent used another. Only results from the 38 participants with consent are reported here.

Data analysis involved three parts, using a concurrent triangulation strategy to confirm quantitative and qualitative findings of data (Creswell, 2003). First, the quantitative data related to eight camper outcome items were analyzed to describe the data and to determine the reliability of the scale. Additionally, quantitative data related to 17 program activity satisfaction items were analyzed to describe the data and to determine the reliability of the scale. Differences between youth who were above and below the mean of the activity satisfaction scale were compared using t-tests. Relationships between the variables were examined with regression. Second, qualitative analysis involved coding the responses to the four open-ended questions and generating themes across the open-ended responses. Third, patterns of relationship of outcome- and satisfaction-related data across both forms of data were examined for convergent responses to the research questions (Greene, 2007), and strong convergence emerged.

Results

The mean of the outdoor challenge scale was 4.26 ($SD = .49$) out of 5 and the mean of the satisfaction scale was 3.48 ($SD = .32$) out of 4. The alpha reliability coefficient was acceptable for the outdoor challenge measure ($\alpha = .74$) and the activity satisfaction measure ($\alpha = .75$). There was a significant relationship between satisfaction with adventure activities and the outcome of outdoor challenge, $r = .66, p < .001$. On average, youth who were above the mean of activity satisfaction had higher outdoor challenge scores ($M = 4.54, SE = .09$), than those who were below the mean ($M = 3.98, SE = .1$). This difference, .56, $CI [-.838, -.284]$ was significant $t(35) = -4.11, p < .001$, representing a large effect, $d = 1.24$. Activity satisfaction significantly predicted outdoor challenge scores, $b = .66, F(1, 36) = 27.4, p < .001$. The overall regression model fit was $R^2 = .43$. Across the four open-ended questions, five elements of the Hero’s Journey program related to the outcome of outdoor challenge: accomplishment, learning new skills, dealing with outdoor life discomfort, using challenging activities to get to know others more deeply, and the key activities of Mock Rescue, Tower, and Key Ceremony. These themes comprised the main theme of “learning about self through challenge” ($n = 103$), and provided context for the quantitative findings.

Discussion

Hero’s Journey provides satisfactory adventure activities to participants that have the outcomes of youth experiencing personal growth and feelings of accomplishment through engagement in outdoor challenges. This is particularly important for young adults who are living

with a serious or life-threatening illness who otherwise have limited opportunities to develop these outcomes and have these developmental experiences in their everyday lives. Hero's Journey answers the call of Sibthorp and Morgan (2011) to extend the accessibility and delivery of the benefits of adventure experiences to diverse youth populations. The Mock Rescue, Tower, and Key Ceremony were very strong program activities that appeared to be major drivers of the development of the outdoor challenge outcomes. Program staff should continue these activities, consider how these activities contain essential program features that drive participants' outcomes, and integrate similar features (i.e., challenge by choice, emotional and physical safety, competence-building, reflection) into other program activities. Outdoor living items had variable responses, and program staff should consider the range of attitudes that participants bring to living in the outdoors and provide support to those who struggle with living in a yurt, bathing in a river, bugs, and cooking outdoors. This study contributes to the literature on outdoor adventure programs for youth with disabilities, and extends the literature to include youth with serious and life-threatening illnesses. Additionally, this study provides theoretical links between activities and developmental outcomes. More research is needed to better understand how outdoor adventure challenge contexts can serve as developmental systems for youth with serious illness.

References

- Alison, J., Negley, S., & Sibthorp, J. (2013). Assessing the social effect of therapeutic recreation summer camp for adolescents with chronic illness. *Therapeutic Recreation Journal*, 47(1), 35-46.
- Carlson, K. P., & Cook, M. (2007). Challenge by choice: Adventure-based counseling for seriously ill adolescents. *Child and Adolescent Psychiatric Clinics of North America*, 16(4), 909-919. doi: 10.1016/j.chc.2007.05.002
- Creswell, J.W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage Publications.
- Damon, W., & Lerner, R. M. (Eds.). (2008). *Child and adolescent development: An advanced course*. Hoboken, NJ: John Wiley and Sons.
- Greene, J.C. (2007) *Mixed methods in social inquiry*. San Francisco, CA: Jossey-Bass.
- Holman, T., McAvoy, L., Rynders, J., & Goldenberg, M. (2003). Outcomes--consequences--values of an integrated wilderness adventure program. *Journal of Experiential Education*, 25(3), 353.
- Lerner, R. M., & Castellino, D. R. (2002). Contemporary developmental theory and adolescence: Developmental systems and applied developmental science. *Journal of Adolescent Health*, 31, 122-135.
- McAvoy, L., Smith, J. G., & Rynders, J. E. (2006). Outdoor adventure programming for individuals with cognitive disabilities who present serious accommodation challenges. *Therapeutic Recreation Journal*, 40(3), 182-199.
- Shirilla, P. (2009). Adventure-based programming and social skill development in the lives of diverse youth: Perspectives from two research projects. *Journal of Experiential Education*, 31(3), 410-414.
- Sibthorp, J., & Morgan, C. (2011). Adventure-based programming: Exemplary youth development practice. *New Directions for Youth Development*, 2011(130), 105-119. doi: 10.1002/yd.400

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Outdoor Education Outcomes of Young Cancer Survivors and Fighters Experiences

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Background

Young adult (18-39 years old) cancer survivors and fighters are an underserved demographic that have experienced no improvement in survival rates for the past 30 years (National Cancer Institute, 2011). First Descents is a non-profit that serves young adult cancer survivors by providing free week-long outdoor adventure therapy experiences in whitewater kayaking, rock climbing, and surfing.

During the First Descents experience, young adult survivors and fighters are empowered through conquering legitimate outdoor challenges to push their limits and face their fears, and by doing so, they are able to regain the confidence and self-efficacy lost to cancer.

First Descents places an emphasis on each individual's experience and provides the right support for every participant to achieve their goals for the week. The experience is designed to allow healing to happen *naturally and organically* – no forced conversations and no structured group sessions or therapy. (<http://firstdescents.org/about-us>)

Subjects have reported First Descents as a life altering experience. At this point, no research has been published on First Descents experiences, which makes this study extremely worthwhile and unique.

This study examines outcomes of participation in First Descents surfing, rock climbing, and whitewater kayaking programs using means-end analysis from the summer of 2013. Means-end theory was originally used by Gutman in 1982 to understand consumer decision-making in marketing. In the recreation and outdoor field, means-end theory has been applied to understanding the outcomes associated with ropes course programming (Goldenberg, Klenosky, O'Leary, & Templin 2000; Haras, Bunting, & Witt, 2006), wilderness orientation programs (Lien & Goldenberg, 2012) and examining the components of an outdoor experience (Goldenberg, McAvoy, & Klenosky, 2005; McAvoy, Holman, Goldenberg, & Klenosky, 2006).

Literature Review

Outdoor adventure therapy is one effective method of programming that addresses the physical, psycho-social, and emotional needs of young adult cancer survivors. Limited studies exist that examine the effects of outdoor adventure therapy on adults with cancer, much less young adults with cancer. However, the research available demonstrates common themes of adventure therapy. Epstein (2004) explains that one goal of adventure therapy is to “encourage the adolescents to enhance their self-concept as part of an overall physical, cognitive, emotional or spiritual, social and psycho-social, or developmental rehabilitation that promotes health” (p. 103). Wynn, Frost, and Pawson (2012) state “Adventure therapy is a recognized intervention to enhance self-esteem, self-discovery, and life skills in adolescents” (p. 28). Sugerman (2005) found that three central themes resulted from an adventure therapy intervention in adolescents with cancer: “renewed sense of self, feeling of support, and sense of control” (p. 72).

Research has shown that using the natural environment for healing and recovery has benefits for cancer survivors. English, Wilson, and Keller-Olaman (2008) examined the influence of differing landscapes on breast cancer survivors' health and healing to “explore the importance of both every day and extraordinary landscapes of healing” (p. 69). The authors define therapeutic landscapes as “locations associated with treatment or healing,” which include

natural recreation areas such as parks and camps (p. 69). A study by Parry (2008) examined breast cancer survivors' participation in dragon boat racing, studying how participation contributes to participants' health, including social and spiritual well-being.

This study examines overall outcomes of participation in a First Descents program but specifically looks at the natural environment, physical fitness, and overall transference of the experience into their daily lives.

Methodology

Means-end theory links attributes, consequences, and values to understand how an individual links the means (the physical objects or services) with the ends (the outcomes and personal values). The means or attributes are an individual's physical objects, services, or experiences. For example attributes of an outdoor program include group interactions, hiking, or a solo experience. Attributes lead to consequences, which can be both positive and negative. Consequences can include interacting with others, environmental appreciation, or fear/anxiety. Values are the individual's desired end-state of mind, including self-respect/esteem/confidence and sense of accomplishment. As desired end-states of mind, values are perceived by the individual to be positive.

In the fall and summer of 2013, a semi-structured in-person interview was used with a convenience sample of First Descents participants after the completion of their course. Six different camps were utilized for data collection including a two kayak camps, two rock climbing camps, and two surfing camps. During the interview, subjects were asked to identify meaningful components of their course (attributes) and to ladder off their response through a series of questions. For example, once a participant identified a certain attribute they remembered from their course, they would then be asked why they thought that attribute was important. Once they responded, they were asked again "...and why is that important?" until the participant eventually stated a value.

Examples of attributes for a First Descents experience may include interactions with others, physical activity, and a new environment. Consequences are more abstract and refer to the outcomes associated with particular attributes. Consequences may refer to desired outcomes, also called benefits, or undesirable outcomes, also known as risks or costs. Examples of consequences in the same First Descents experience may include relaxation, fun and enjoyment, and environmental awareness. Values are very abstract and refer to users' desired end-states of being. As desired end states of being, values are always considered to be desirable or positive. Examples of values from the same experience include fun and enjoyment of life, warm relationships with others, and transference of knowledge to other areas of one's life.

For each data set, ladders will be coded with content codes and entered into the LadderMap (Gengler & Reynolds, 1995) computer program. The content codes will be analyzed by an independent coder to determine intercoder reliability. The researcher and a second independent coder will review coding discrepancies and determined final content codes. An implication matrix will be created to assess the number of times concepts were linked together. From the implication matrix, hierarchical value maps (HVMs) will be created as visual representations of the themes.

** Data are still being collected for this study and results and a complete discussion will be ready for the CEO conference in January 2014. Data collection will be completed in late September 2013.

References

- English, K., Wilson, K., & Keller-Olaman, S. (2008). Health, healing, and recovery: Therapeutic landscapes and the everyday lives of breast cancer survivors. *Social Science & Medicine*, 68, 68-78.
- Epstein, I. (2004). Adventure therapy: A mental health promotion strategy in pediatric oncology. *Journal of Pediatric Oncology Nursing: Official Journal of the Association of Pediatric Oncology Nurses*, 21(2), 103-110.
- Gengler, C.E., & Reynolds, T.J. (1995). LadderMap [Computer Software]. Camden, NJ: Means-End Software.
- Goldenberg, M.A., Klenosky, D.B., O'Leary, J.T. & Templin, T.J. (2000). A means-end investigation of ropes course experiences. *Journal of Leisure Research*, 32(2), 208-224.
- Goldenberg, M., McAvoy, L. & Klenosky, D. (2005). Outcomes from the components of an Outward Bound experience. *Journal of Experiential Education*, 28(2), 123-146.
- Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing*, 46, 60-72.
- Haras, K., Bunting, C., & Witt, P. (2006). Meaningful involvement opportunities in ropes course programs. *Journal of Leisure Research*, 28(3), 339-362.
- Lien, M., & Goldenberg, M. (2012). Outcomes of college wilderness orientation programs. *Journal of Experiential Education*, 35(1), 253-271.
- McAvoy, L. Holman, T., Goldenberg, M., & Klenosky, D. (2006, August). Wilderness and persons with disabilities: Transferring the benefits to everyday life. *International Journal of Wilderness*, 12(2), 23-31.
- National Cancer Institute. (2012). *A Snapshot of Adolescent and Young Adult Cancers*. Retrieved from: <http://www.cancer.gov/cancertopics/aya/reports>
- Parry, D. C. (2008). The contribution of dragon boat racing to women's health and breast cancer survivorship. *Qualitative Health Research*, 18(2), 222-233.
- Sugerman, D. (2005). "I am more than my cancer": An exploratory examination of adventure programming and cancer survivors. *Journal of Experiential Education*, 28(1), 72-83.
- Wynn, B., Frost, A., & Pawson, P. (2012). Adventure therapy proves successful for adolescent survivors of childhood cancers. *Nursing New Zealand (Wellington, N.Z.: 1995)*, 18(1), 28.

Creativity and Divergent Thinking in Outdoor Adventure Education

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To date, there has been limited empirical research on the influence of outdoor adventure education (OAE) programs on creativity, or more specifically, creative thinking. Ewert (1989) and others (Galloway, 2002; McKenzie 2003; Walsh & Golins, 1976) have argued that some of the inherent qualities of OAE programs—ill-structured problems deriving from real-world environmental and interpersonal challenges, opportunities for self-directed problem analysis and decision making, and regular and timely feedback from instructors, peers, and the environment—encourage the use and development of problem-solving skills. While studies from the last two decades support this assertion by linking OAE programs to a variety of problem-solving learning outcomes (e.g., Gass & Priest, 2006; Hattie, Marsh, Neill, & Richard, 1997; Paisley, Furman, Sibthorp, & Gookin, 2008; Sibthorp, Furman, Paisley, & Gookin, 2008), little is known about how these programs affect the creative aspects of the problem-solving process. Despite this lack of definitive research in OAE, there is a growing body of evidence that creativity training interventions have “particularly strong influence on divergent thinking and problem solving” (Scott, Leritz, & Mumford, 2004). These findings underscore the need to explore whether OAE programs stimulate creative thought in a similar manner.

According to Scott et al. (2004), “creativity ultimately involves the production of original, potentially workable, solutions to novel, ill-defined problems of relatively high complexity” (p. 362). The dynamic nature of OAE programs results in numerous opportunities for participants to work through such ill-structured problems. According to modern theories of creativity that build on the work of Guilford (1967, in Lubart, 2003; Kozbelt, Beghetto, & Runco, 2010), true problem solving involves creativity in that it requires that individuals actively seek and construct new ideas to fit into the context posed by the task and problem space. These theories also propose that creative problem solving requires both divergent and convergent thinking (Crompton, 2006; Runco, 1991). Divergent thinking involves generating multiple creative and innovating representations of solutions while convergent thinking moves an individual toward a single “right” solution using critical reasoning (Sternberg, Kaufman, & Pretz, 2002). The most proficient creative problem solvers move fluidly between the two processes (Brophy, 1998). That said, many creativity tests, including the widely-used Torrance Tests of Creative Thinking (TTCT; Torrance, 1974, 2008) focus on an individual’s divergent thinking (DT), specifically one’s fluency, flexibility, and originality of ideas (Plucker & Makel, 2010). Psychometric research shows that these tests of DT are good estimators of creative potential and act as useful indicators of future creative performance (Runco & Acar, 2012). With the wide acceptance of tests of DT as gauges of creative potential, it is likely that researchers can use such measures to evaluate how OAE programs influence aspects of creative production.

The purpose of this study was to measure the effects of two different semester-long OAE programs on divergent thinking. The researchers from this study hypothesized that participation in both programs would increase divergent thinking as measured in terms of fluency, flexibility, and originality.

Methods

This study, conducted in the fall of 2013, involved a convenience sample of National Outdoor Leadership School (NOLS) students enrolled in three standard semester courses (SSC) and two semester-length outdoor educator courses (OEC) targeted toward aspiring outdoor professionals. NOLS semester courses range from 75 to 90 days in length. The sample consisted of 68 students ranging from 17 to 31 years of age ($M_{\text{age}} = 20.4$ years). DT was measured pre and post-course using the parallel verbal forms A and B of the Torrance Tests of Creative Thinking (TTCT; Torrance, 1974, 2008). The TTCT verbal form consists of six different activities: asking, guessing causes, guessing consequences, product improvement, unusual uses, and just suppose. Scores for each section evaluate each respondent in terms of fluency, flexibility, and originality. Fluency is a count of all the relevant responses generated by a student, originality represents the ability for a student to produce ideas that are uncommon or unique task or problem, and flexibility is characterized as the number and uniqueness of categories represented by the responses (Plucker & Makel, 2010). Participants completed the pre-course assessment at NOLS Rocky Mountain branch during course briefings and the post-course assessment at the same location following semester completion. Forms A and B were systematically assigned to courses to account for any testing differences in the parallel forms. An independent scorer evaluated completed forms according to TTCT scoring manual procedures. A MANOVA was used to analyze the data. Fluency, flexibility, and originality were the dependent variables and program (SSC, OEC) and time (pretest, posttest) were the independent variables of interest.

Results

Fifty-two students completed paired pre and post-course TTCT forms. While there was not a significant main effect for time, there was a significant time-by-program interaction. The subset of OEC students ($n=19$) showed a statistically significant increase in mean scores in both fluency and flexibility ($p < .05$). In the post-test, OEC students on average generated an increased number of relevant responses (i.e., increased fluency) and these responses represented a broader range of unique response categories (i.e., increased flexibility). In contrast, SSC students ($n=33$) students did not show a significant increase in any of the three measured areas of DT.

Discussion

This study shows the promise of OAE programs being able to build creative problem solving skills in participants, consistent with the conclusions of Ewert (1989) and others (Galloway, 2002; McKenzie 2003; Walsh & Golins, 1976). The results from OEC students parallel findings from other creativity training programs that foster DT (Scott et al., 2004). A particular strength of this study was the use of actual performance measures (i.e., the TTCT) as opposed to measures of self-perception. Self-perception assessments, though sometimes informative, are often unreliable measures of true performance (Sibthorp, Paisley, Gookin, & Ward, 2007). Unfortunately, a number of post-test forms from SSC students showed signs of respondent fatigue and low motivation, problems common to the TTCT (Kim, 2006). The TTCT verbal form takes forty minutes to complete and considering the other end-of-course activities and demands, it is possible that SSC students were too distracted to take the assessment seriously. The average age of OEC students was considerably higher than that of SSC students—22.4 years as compared to 18.4 years—perhaps demonstrating that older students were either

more likely to take the test seriously and stay on task or more prepared to develop DT skills through OAE programming. Other studies involving OAE programs have noted how age factors into student motivations and outcomes (Sibthorp, et al., 2008). A future study may want to focus exclusively on a more homogenous sample that includes older students in order to reduce unwanted error variance and include a control group for comparison. While the results of this study have limited generalizability due to the specific nature of the NOLS curriculum, it demonstrates the potential that future studies may be able to measure OAE programming's impact on aspects of creative thinking.

References

- Brophy, D. (1998). Understanding, measuring, and enhancing individual creative problem solving efforts. *Creativity Research Journal*, 11(2), 123-150.
- Cropley, A. J. (2006). In praise of convergent thinking. *Creativity Research Journal*, 18(3), 391-404.
- Ewert, A. (1989). *Outdoor adventure pursuits: Foundations, models, and theories*. Columbus, OH: Publishing Horizons.
- Galloway, S. (2002). Theoretical cognitive differences in expert and novice outdoor leader decision making: Implications for training and development. *Journal of Adventure Education & Outdoor Learning*, 2(1), 19-28.
- Gass, M. A., & Priest, S. (2006). The effectiveness of metaphoric facilitation styles in corporate adventure training (CAT) programs. *Journal of Experiential Education*, 29(1), 78-94.
- Hattie, J., Marsh, H. W., Neill, J. T., & Richard, G. (1997). Adventure education and Outward Bound: Out-of-class experiences that make a lasting difference. *Review of Educational Research*, 67(1), 43-87.
- Kim, K. H. (2006). Can we trust creativity tests? A review of the Torrance Tests of Creative Thinking (TTCT). *Creativity Research Journal*, 18(1), 3-14.
- Kozbelt, A., Beghetto, R. A., & Runco, M. A. (2010). Theories of creativity. In *The Cambridge handbook of creativity*. New York: Cambridge University Press.
- Lubart, T. (2003). Creativity. In R. Sternberg (Ed.), *Thinking and problem solving*. San Diego, CA: Academic Press.
- McKenzie, M. (2003). Beyond "the Outward Bound process:" Rethinking student learning. *Journal of Experiential Education*, 26(1), 8-23.
- Paisley, K., Furman, N., Sibthorp, J., & Gookin, J. (2008). Student learning in outdoor education: A case study from the National Outdoor Leadership School. *Journal of Experiential Education*, 30(3), 201-222.
- Plucker, J. A., & Makel, M. C. (2010). Assessment of creativity. In *The Cambridge handbook of creativity* (pp. 48-73). New York: Cambridge University Press.
- Runco, M. A. (1991). *Divergent thinking. Creativity research*. Westport, CT: Ablex Publishing.
- Runco, M. A., & Acar, S. (2012). Divergent thinking as an indicator of creative potential. *Creativity Research Journal*, 24(1), 66-75.
- Scott, G., Leritz, L. E., & Mumford, M. D. (2004). The effectiveness of creativity training: A quantitative review. *Creativity Research Journal*, 16(4), 361-388.
- Sibthorp, J., Furman, N., Paisley, K., & Gookin, J. (2008). Long-term impacts attributed to participation in adventure education: Preliminary findings from NOLS. *Research in Outdoor Education*, 9, 86-103.

- Sibthorp, J., Paisley, K., Gookin, J., & Ward, P. (2007). Addressing response-shift bias: Retrospective pretests in recreation research and evaluation. *Journal of Leisure Research*, 39(2), 295-315.
- Sternberg, R. J., Kaufman, J. C., & Pretz, J. E. (2002). *The creativity conundrum: A propulsion model of kinds of creative contributions*. New York: Psychology Press.
- Torrance, E. P. (1974). *Torrance Tests of Creative Thinking: Norms-technical manual*. Bensenville, IL: Scholastic Testing Service.
- Torrance, E. P. (2008). *Torrance Tests of Creative Thinking: Norms-technical manual, verbal forms A and B*. Bensenville, IL: Scholastic Testing Service.
- Walsh, V., & Golins, G. (1976). *The exploration of the Outward Bound process*. Denver: Colorado Outward Bound School.

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Examining Adventure & Mindfulness and their Relation to Outcome in Adventure Therapy

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Introduction

Adventure therapy (AT) is the prescriptive use of adventure experiences provided by mental health professionals, often conducted in natural settings that kinesthetically engages clients on cognitive, affective and behavioral levels (Gass, Gillis, & Russell, 2012). Traditional treatment approaches are often integrated with AT to treat specific disorders, including cognitive behavioral treatment (Russell, 2008), structural family therapy (Harper & Russell, 2008), and addictions treatment (Bennet, Cardone, & Jarczyk 2008). Studies have shown that these integrated models can be effective in helping to alleviate symptomology in adolescents and adults in a variety of AT program models, including community-based treatment (Tucker et al., 2013), adolescents (Russell, 2008), adjudicated youth (Gillis, Gass, & Russell, 2008) and adult males (Scheinfeld, Rochlen, & Buser, 2011). This study presents the outcomes associated with AT being integrated with a relatively new treatment approach involving the intentional practice of mindfulness in an addictions treatment program for adult males. There is a growing interest in psychology on mindfulness, which has been defined in the psychological literature as an awareness of present experience with the acceptance of self within that experience (Bishop et al., 2004). Mindfulness includes three interrelated elements of attitude, attention, and intent (Shapiro, Carlson, Astin, & Freedman, 2006), and is considered both a state which can be induced and increased (e.g., through meditative practice) and a dispositional trait found to be present at varying levels in all people (Baer et al., 2010). In addition, it has been shown to be strongly correlated with psychological and emotional well-being (Baer et al. 2010) and its development and inclusion in treatment to result in positive treatment outcomes including reductions in substance use and addiction (Fernandez, Wood, Stein, & Rossi, 2010).

The program involved in this study was an open enrollment 90-day residential treatment program for 18-24 year-old adult males located in Alberta, Canada. The program uses adventure as a primary tool to enhance a more traditional addictions treatment model, and is not seen as adjunctive or tangential. The use of adventure is unique for a few reasons in that it is a constant and evolving tool that is woven into the 90-day program. There is no set schedule, where clients rotate in and out of the field on a periodic basis; the trips are developed in partnership with clients as well as often being client-initiated with planned goals, themes and foci. They also do not go out in large groups (like the traditional —10-man group brought to North America by Outward Bound in the 1960s). These may be a water-based canoe trip, or a backpacking trip in the nearby Northern Rockies. At the completion of the adventure experience they return to camp and process their experience in relation to their intentions and goals, with the on-going group and the clinical staff.

This purpose of this evaluation was to address the following research questions: 1) How mindfulness being integrated into AT practice? 2) To what degree can mindfulness be measured? and 3) How does the development of mindfulness relate to treatment outcome? This study should be considered as preliminary and is part of a larger study that is longitudinally tracking treatment outcome for clients in this program.

Methods

All participants who entered treatment and agreed to participate in the study were included in the purposive sample included in this preliminary analysis of data collected between January and August of 2013. The clinical therapist administered all questionnaires that were collected at admission, every two weeks, and at discharge. Mindfulness was measured using the Five Factor Mindfulness Questionnaire (FFMQ developed by Baer et al., 2008). The FFMQ is a 39-item self-report multi-faceted measure of mindfulness that assesses awareness of experience and the attitude towards internal experience. The five factors that comprise mindfulness are Observing (Attending to internal and external experiences), Describing (labeling internal experiences), Acting with Awareness (being present with feelings and observations), Nonjudging (not evaluating what you are thinking or feeling), and Nonreactivity (not reacting to thoughts and feelings). Mindfulness was also assessed using a questionnaire that asked the clients to reflect on their adventure experiences and to rate and qualify how mindful they were on these experiences (from 0-100 based on a visual analog scaling technique). Clients were also asked to rate how much the adventure experience itself “helped them in the treatment recovery process,” using the same scaling technique. These relative scores were used to test the relationship between their self-rated perceptions of the adventure experience, their sense of mindfulness during these experiences and treatment outcome. Treatment outcome was assessed using the Outcome Questionnaire 45 (OQ-45.2) (Burlingame et al. 1994). The OQ-45 is a 45- item self-report measure designed for repeated administration throughout the course of treatment and at termination and is used as both an outcome and a process and therapist/client feedback measure. The OQ®-45.2 measures functioning in 3 domains: 1) Interpersonal Relations (IR): Assesses complaints such as loneliness, conflicts with others, family and marriage problems; 2) Symptom Distress (SD): Composed of items that have been found to reflect the symptoms of anxiety disorders, affective disorders, adjustment disorders and stress related illness; and 3) Social Role (SR): Conflicts at work, overwork, distress and inefficiency in these roles are assessed. A multilevel modeling approach was used to analyze both within-person (i.e., time-varying) and between-person (i.e., time invariant) relationships among variables of interest. Primarily, the models predicted OQ from combinations of the predictors of (a) time, (b) mindfulness during the adventure activity, and (c) perceived helpfulness of the adventure activity. Both same-assessment (i.e., T1 predicting T1) and lagged (i.e., T1 predicting T2) variables were used to predict OQ.

Results

A total of 42 male clients will be included in the analysis with an average age of 22.3 years. Significant change as a result of treatment, assessed using a pair-wise t-test for Mindfulness ($t = -4.49, p < .000$) and OQ ($t = 5.50, p < .000$) for pre-treatment and post-treatment scores respectively. The model predicting OQ scores based on the combinations of the same-day self-reported mindfulness scores were significant and predictive of OQ change ($b = -2.39, p = .004$). The model predicting the relative impact of the adventure experience on treatment outcome was not significant ($b = -.084, p = .476$).

Implications

Results from this study shed light on the role that mindfulness practice plays in conjunction with adventure experiences in facilitating treatment outcome. It may be that the adventure experience

by itself is not a key change agent in AT treatment, but rather the *mindful* adventure experience, especially in relation to treatment goals and progress, is what accounts for changes in psychosocial wellbeing. It is hoped that this discussion will be relevant to researchers and practitioners interested in exploring more deeply how adventure-based experiences in nature can more intentionally integrate mindfulness practice into their programming, and the impact that this might have on treatment outcome.

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Literature Cited

- Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., . . . Williams, J. M. G. (2008). Construct validity of the Five Facet Mindfulness Questionnaire in meditating and nonmeditating samples. *Assessment, 15*(3), 329-342.
- Bennett, L., Cardone, S., & Jarczyk, K. (1998). Effects of a therapeutic camping program on addiction recovery: The Algonquin Haymarket relapse prevention program. *Journal of Substance Abuse Treatment, 15*(5), 469-474.
- Bishop, S. R., Lau, M., Shapiro, S. L., Carlson, L., & Anderson, N. D. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*, 230-241.
- Gillis, H. L., Gass, M. A., & Russell, K. C. (2008). The effectiveness of Project Adventure's behavior management programs for male offenders in residential treatment. *Residential Treatment for Children & Youth, 25*(3), 227-247.
- Harper, N.J., Russell, K.C. (2008). Family Involvement in wilderness treatment: A mixed-methods evaluation. *Int. Journal of Child and Family Welfare, 2008/1*, 19-36.
- Fernandez, A. C., Wood, M. D., Stein, L. A. R., & Rossi, J. S. (2010). Measuring mindfulness and examining its relationship with alcohol use and negative consequences. *Psychology of Addictive Behaviors, 24*(4), 608-616. doi:10.1037/a0021742.
- Lambert, M. J., Lunnen, K., Umphress, V., Hansen, N. & Burlingame, G. M. (1994). Administration and scoring manual for the Outcome Questionnaire (OQ-45.1). Salt Lake City: IHC Center for Behavioral Healthcare Efficacy.
- Scheinfeld, D. E., Rochlen, A. B. & Buser, S. J. (2011). AT: A supplementary group therapy approach for men. *Psychology of Men & Masculinity, 12*(2), 188-194.
- Shapiro, S. L., Carlson, L.E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology, 62*, 373-386.
- Tucker, A., Javorski, S., Tracy, J., & Beale, B. (2013). The use of AT in community-based mental health: Decreases in problem severity among youth clients. *Child and Youth Care Forum, 42*(2), 155-179.

Natural Environments and Stress: Mitigation of Cortisol Through Visitation to an Outdoor Setting

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Background

Many people's lives are affected by the presence of stress and being able to develop effective coping strategies for dealing with stress is an important psychosocial issue (Iwasaki, 2006). A number of coping strategies for reducing stress have emerged in the literature such as "positive psychology" (Aspinwall & Staudinger, 2003), leisure coping (Kleiber, Hutchinson, & Williams, 2002), and contact with nature (Hartig, et al., 2003). In this latter case, there is a long history surrounding the belief that natural and outdoor settings can be effective in promoting good health (Frumkin, 2001). Thus, it is not surprising that the level of interest among researchers has risen concerning the health-enhancing effects of visitation and engagement in activities within natural and outdoor settings (van den Berg, Hartig, & Staats, 2007).

While most of the studies done to date on the health benefits of natural environments have focused on psychological-related variables such as emotions, feelings, and attention (Bowler, Buyung-Ali, Knight, & Pullin, 2010), one other potentially important outcome of visitation to natural environments has been the reduction of levels of stress (Kjellgren & Buhrkall, 2010). Historically, stress reduction benefits from outdoor settings, such as parks and greenways, has been documented primarily through antecedent records or psychologically-based instruments, either written or through interview protocols (Coon, et al., 2011). This current study approached the concept of stress reduction through the measurement of cortisol, a steroid hormone, belonging to a broader class of steroids called glucocorticoids which are produced by the adrenal gland and secreted during a stress response. The primary purpose of cortisol is to redistribute energy (glucose) to high priority parts of the body such as the heart, brain, and muscles and is often associated with the concept of fight, flight, or freeze. Detrimental changes occur in the body if heightened levels of cortisol are present for extended periods of time including the suppression of the immune system. These negative effects are often associated with the term "chronic stress" and are associated with the body's response to extended exposure to cortisol.

Two widely known theories, Psychoevolutionary Theory and Attention Restoration Theory (Hartig et al., 1996), have been linked to natural environments and stress reduction. These theories provide an organizing framework for understanding this linkage although the exact mechanism for change remains imprecise. Using levels of cortisol as a biological indicator of stress (dependent variable) and the variables of sex, length of duration of visit, and age as the independent variables, the following hypotheses were used to guide this study:

- H₁: When compared to pre-visit, levels of cortisol will decrease following a recreational visit to a local natural environment.

- H₂: The variables of sex, duration of visit, and age will have no effect on post-visit levels of cortisol.

Methods

To measure the changes in levels of cortisol following a visit to a local park, participants were asked to participate in this study upon entering the park area. The natural area consists of a relatively undeveloped area with a number of trails encircling a lake within a maple/beech forest. Study participants were asked to give pre-visit and immediately after the trip (post-trip) samples of saliva. The level of salivary cortisol was measured using a competitive immunoassay (ELISA) specifically designed and validated for the quantitative measurement of salivary cortisol (Hellhammer, Wust, & Kudielka, 2009; Shimada et al., 1995).

Results

From a sample of 47 respondents (26 female, 21 male) using a repeated measures design and paired sample *t*-tests, results indicated a significant reduction in levels of cortisol ($M_{pre} = 0.16/SD = 0.10$, $M_{post} = 0.13/SD = 0.08$, $p = .047$). The correlation coefficient between the duration of visit and reduction in level of cortisol was $r = .244$. Using a backwards regression approach, resulted in a multiple regression of $Y_c = 0.021 + (0.001 \times \text{Sex}) \times (0.001 \times \text{Duration}) \times (-0.002 \times \text{Age})$, with 1 = male and 0 = female, and with duration of visit being significantly associated with a reduction in cortisol. Neither sex nor age resulted in significant differences in levels of cortisol in this study.

Discussion/Implications

This study adds support to the limited number of studies conducted using biological markers such as levels of cortisol to identify and measure levels of stress. The findings suggest that visitation to a natural environment can result in reduced levels of cortisol and a corresponding reduction in the level of stress experienced by the individual visitor. Whether this effect is due to physical activity of engaging in the natural setting (Kaczynski & Henderson, 2007), the effect of a leisure experience upon the individual (Iwasaki, 2006), the presence of green space (Thompson, et al., 2012) or a combination of these remains elusive. The findings of this study suggest that natural environments can exert an influence on the actual chemistry of the body. Future research should seek to not only expand these findings but more precisely identify why and how these potential changes occur. In addition, natural environments encompass a broad array of locations and settings and little is known about the effect of different environments and their connection to stress reduction. Finally, what this study suggests is that natural settings can offer enormous potential for both disease prevention and health promotion. Borrowing from Frumkin (2013, p.197), natural and outdoor environments are widely available; they don't need to be prescribed or dispensed by a highly trained professional; they inflict few adverse effects; and they offer numerous co-benefits – claims that few medical treatments can make.

References

- Aspinwall, L. G., & Staudinger, U. M. (Eds.). (2003). *A psychology of human strengths: Fundamental questions and future directions for a positive psychology*. Washington, DC: American Psychological Association.

- Bowler, D. E., Buyung-Ali, L. M., Knight, T. M., & Pullin, A. S. (2010). A systematic review of evidence for the added benefits of health of exposure to natural environments. *BMC Public Health*, *10*, 456. Doi: 10.1186/1471-2458-10-456.
- Coon, J. T., Boddy, K., Stein, K., Whear, R., & Depledge, M. H. (2011). Does participating in physical activity in outdoor natural environments have a greater effect on physical and mental wellbeing than physical activity indoors? A systematic review. *Environmental Science and Technology*, *45*(5), 1761-1772.
- Frumkin, H. (2001). Beyond toxicity: Human health and the natural environment. *American Journal of Preventative Medicine*, *20*(3), 234-240.
- Frumkin H. (2013). The evidence of nature and the nature of evidence. *American Journal of Preventative Medicine*, *44*(2), 196-197.
- Hartig, T., Evans, G. W., Jamner, L. D., Davis, D. S., & Garling, T. (2003). Tracking restoration in natural and urban field settings. *Journal of Environmental Psychology*, *22*, 109-123.
- Hartig, T., Book, A., Garvill, J., Olsson, T., & Garling, T. (1996). Environmental influences on psychological restoration. *Scandinavian Journal of Psychology*, *37*, 378-393.
- Hellhammer, D. H., Wust, S., & Kudielka, B. M. (2009). Salivary cortisol as a biomarker in stress research, *Psychoneuroendocrinology*, *34*, 163-171.
- Iwasaki, Y. (2006). Counteracting stress through leisure coping: A prospective health study. *Psychology, Health & Medicine*. *11*(2), 209-220.
- Kaczynski, A. T., & Henderson, K. A. (2007). Environmental correlates of physical activity: A review of evidence about parks and recreation. *Leisure Sciences*, *29*, 315-354.
- Kjellgren, A. & Buhrkall, H. (2010). A comparison of the restorative effect of a natural environment with that of a simulated natural environment. *Journal of Environmental Psychology*, *30*, 464-472.
- Kleiber, D. A., Hutchinson, S. L., & Williams, R. (2002). Leisure as a resource in transcending negative life events: Self-protection, self-restoration, and personal transformation. *Leisure Sciences*, *24*, 219-235.
- Shimada, M., Takahashi, K., Ohkawa, T., Segawa, M., & Higurashi, M. (1995). Determination of salivary cortisol by ELISA and its application to the assessment of the circadian rhythm in children. *Hormone Research in Pediatrics*, *44*(5), 213-217.
- Thompson, C. W., Roe, J., Aspinall, P., Mitchell, R., Clow, A., & Miller, D. (2012). More green space is linked to less stress in deprived communities: Evidence from salivary cortisol patterns. *Landscape and Urban Planning*, *105*, 221-229.
- van den Berg, A., Hartig, T., & Staats, H. (2007). Preference for nature in urbanized societies: Stress, restoration, and the pursuit of sustainability. *Journal of Social Issues*, *63*(1), 79-96.
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BACKCOUNTRY ENERGY NEEDS 2.0

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Review of Literature

Nutrition research typically addresses the questions of what to eat, how much to eat, and when to eat in relation to physical activity (Bernadot, 2012). Research specific to backcountry expeditions tends to focus on high altitude expeditions or short-duration climbs of large peaks (Appukutty, 2005). Missing from the field is an understanding of nutrition needs and adaptations for the recreationist spending extended time in a backcountry environment.

Methods

1. **Energetics.** In 2010-2011 NOLS undertook a study of five backcountry-based courses to measure energy expenditure, morphological changes, physiological fitness changes, and caloric intake over a three-month time period. Energy expenditure was measured independently as energy spent on activities, basal metabolic rate, energy spent on thermoregulation, and the thermic effect of eating food. A total of 52 students in good health participated in the study with an age range of 18-44 while participating in NOLS courses. Activities specifically measured included backpacking, rock climbing, and winter camping with ski travel. This study was unique in that each participant served as his or her own control, offering two different climate experiences (either temperate and hot or temperate and cold). Instruments used include:

- Tanita BC-558 Ironman Segmental Body Composition Monitor bioelectrical impedance scale.
- Doubly labeled water methods (DLW)
- ActiTrainer heart rate monitors with data logging capabilities
- In-depth food diaries

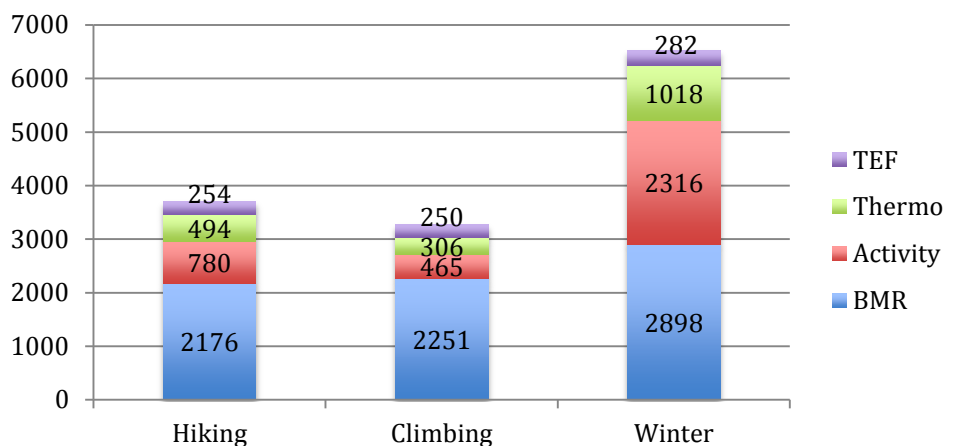
2. **Body Composition.** During the summer of 2013 NOLS also began to look at body composition changes on month-long courses using students from the US Naval Academy and standard enrollment. A total of 239 participants ages 16-43 were measured before and after their hiking, mountaineering, sea kayaking, or rock climbing course. Again, the Tanita BC-558 scale was used. Naval Academy participants were given optional protein powder, and no changes were made to the rations or route.

Results

1. The Factorial and Flex-Heart Rate methods were found to be inconsistent and ineffective in predicting energy expenditure above 3005 calories. Researcher Cara Ocobock created a new method of analyzing and predicting Total Energy Expenditure (TEE), known as the Allocation Model.

Averages of TEE are in Table 1.1, with totals equating to 3704 for hiking, 3272 for climbing, and 6514 for skiing.

Table 1.1 Total Energy Expenditure over 24-Hours



that average was muscle mass. In general, students on NOLS courses are losing fat. This rings true for each subcategory, and open enrollment women have a positive muscle mass change, with a median of building 3lbs of muscle on a course.

Discussion

Data from the energetics study shows that most students increase resting metabolic rate, hence cardiovascular fitness, while attending NOLS. Whether an energy deficit accompanied by fat loss or an energy surplus accompanied by muscle gain, these experiences are improving body composition in most students. This data also shows that existing models for humans in these types of activities (Leonard, et al, 1997) are off by as much as 30%, especially for specific individuals who are extremely active and can expend 7,000-8,000Kcal/day.

The energetics study predicted increased energy for thermoregulation in cold environments. Indeed, TEE shot extremely high during extreme cold living, but these measurements showed the change was primarily due to increased intentional activity (like shoveling snow to keep warm) rather than to autonomic thermoregulation via mechanisms like shivering.

Regarding the body composition study, it is clear that levels of muscle and fat prior to the course affect morphological changes throughout the course. We experimented with different ways to offer supplemental protein powder, and will continue to do so in the coming years. The equation is much more complex than a “calories in, calories out” discussion.

Nutrition on backcountry expeditions has barriers beyond simple logistics. Proper nutrition includes ration planning, nutrition education, cooking education, adequate supervision, and an atmosphere that promotes healthy lifestyles. This study can help shed light on best practices in preparing rations for long-duration expeditions for both organizations and recreationalists. NOLS has already implemented wide-scale changes to our ration planning and nutrition curriculum, which we will also share.

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References

- Appukutty, Mahenderan. (2005) “Uitm High Altitude Expedition: Nutrition, Body Composition and Lipid Profiles Among High Altitude Climbers.” *Institute of Research & Commercialization*. University of Technology MARA, Shah Alam, Selangor.
- Benardot, Dan. (2012) *Advanced Sports Nutrition* (2nd Edition). Champaign, Illinois: Human Kinetics.
- FAO/WHO/UNU (Food and Agriculture Organization/World Health Organization/United Nations University) (1985) *Energy and Protein Requirements*. WHO Technical Support Series, No. 724. Geneva: World Health Organization.
- Leonard, W.R., Galoway V.A., & Ivakine E. 1997. “Underestimation of daily energy expenditure with the factorial method: Implications for anthropological research.” *Am. J. Phys. Anthropol.*, 103:443-454
- Ocobock, C.; Gookin, J.; Baynes, S. (2011) "Energy Balance Assessment of Students on a National Outdoor Leadership School Course" *The Journal of Outdoor Recreation, Education, and Leadership*, 3(2).
- Rejc E., Lazzar S., & Antonutto, G. (2010) Energy expenditure and dietary intake of athletes during an ultraendurance event developed by hiking, cycling and mountain climbing. *Journal of Sports Medicine and Physical Fitness*. 50(3), 296-302.
- Snodgrass, J. J., Leonard, W. R., Tarskaia L. A., & Schoeller, D. A. (2006). Total energy expenditure in the Yakut (Sakha) of Siberia as measured by the doubly labeled water method. *American Journal of Clinical Nutrition*. 84,798-806.

Exploring Profound Place Relationships: The Extension of Place Attachment to Place Allegiance

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Introduction

How does place research currently capture the importance of Yosemite within John Muir's life and written work or the value that the Boundary Waters Canoe Area had within Sigrud Olsen's writings? Profound relationships with place guide the lives of many outdoor recreationists, both historically and presently. Within the academic literature, the intensity of a personal connection to place has been addressed through sense of place (Farnum, Hall & Kruger, 2005), and more specifically, empirical investigations into the construct of place attachment (Williams, Patterson, Roggenbuck & Watson, 1992; Williams & Vaske, 2003). This study proposes an extension to look beyond the confines of current place attachment research in an effort to better capture the profound and devoted relationships to places that outdoor recreationists experience.

Background

The Psychological Continuum Model (PCM) as defined by Funk and James (2001) describes the process in which recreation, leisure and sport participants move through varying psychological connections with leisure pursuits. This study extends the four levels of the PCM (awareness, attraction, attachment, and allegiance) as the theoretical framework to describe outdoor recreationists positive place connections. Within this study, the term allegiance is utilized to explain the psychological state in which an individual's connection with a recreation place influences their attitudes and behaviour. Classically, outdoor recreationists' place connections have been explained through the well-defined construct of place attachment (Williams & Vaske, 2003). Place attachment measures an individual's relationship with a place(s). Commonly, place studies have used place identity, place dependence (Williams & Vaske) and social relational place attachment (Kyle, Graefe & Manning, 2005) constructs to capture the intensity of the place relationship. Coined within this study, place allegiance seeks to extend the place attachment discourse to capture aspects of allegiance as described by the PCM (Beaton & Funk, 2008; Funk & James, 2001). This study proposes that place allegiance describes the profound and devout relationships outdoor recreationists build with outdoor places. Within this study, place allegiance is explored through four domains. These domains include: symbolic value, durability, functional knowledge, and an action disposition. Each of these domains extends the discourse of place relationships from the psychological connection from attachment to allegiance.

Methods

This study applied an exploratory and concurrent mixed methods research approach (Creswell & Plano Clark, 2010) to capture the concept of place allegiance. As a part of a larger study, the data collected builds the construct of place allegiance. This study's sampling technique consisted of quantitative surveys and qualitative journal entries. Fourth year undergraduate students ($n=20$) participating in a nine-day field course as part of their undergraduate degree in Recreation and Leisure Studies - Outdoor Recreation were the study participants. Quantitative surveys were used to assess the four domains of place allegiance and the three constructs of place

attachment (place identity, dependence, and social-relational). Journals were used to collect guided qualitative reflective data. Both the surveys and journals were administered daily throughout the 9-day field course which consisted of six days of wilderness backpacking and three days of front country rock climbing and camping. Quantitative data were analyzed using the software package SPSS 21. For each scale, means were calculated and graphed to show the daily changes. In addition, paired samples t-tests were conducted for pre and post data points. Qualitative journal entries were inductively analyzed through thematic coding and comparison.

Results

Quantitative results indicate that place attachment and place allegiance both described the place relationships of participants during the 9-day field course. Both place allegiance and place attachment significantly increased from day 1 to day 9. The exploratory place allegiance measure followed similar daily mean increases to the psychometrically verified place attachment measure. In addition, domains of place allegiance saw a decrease when students transitioned from backcountry to the front country portion of the field course. Durability, functional knowledge and action disposition increased at a consistent rate throughout the backcountry portion of the field course but significantly decreased during the transition to the front country. Symbolic value consistently increased throughout the 9 days with no significant change during the front country portion.

Qualitative results were collected based on the four domains of place allegiance. Each of these domains was described within student journal entries. Students believed that the domain durability was influential to their place relationship because it consisted of reflection on and the creation of memories. One student wrote, "When I visit all these places I feel nostalgic for the memories that I have developed." An action disposition was best described as the willingness to stand up and fight for a place in an effort to preserve it. One student wrote, "we must advocate for the importance of preserving areas such as this [Frontenac Provincial Park]." Similarly, functional knowledge was influential to students because they believed that recreationists were better able to know outdoor places because their future as outdoor professionals was intimately tied to their knowledge of places. Finally, the symbolic value was more important for students during the backcountry portion of their field course. Having "wilderness" was identified as important to the creation of profound place connections as compared to front country places.

Discussion

Results from this exploratory study offer a starting point to bring place allegiance into the discourse that addresses the significance of place relationships. Reframing the discussion of place to extend beyond place attachment will help programmers of outdoor education courses better understand and describe the profound place relationships that occur during outdoor recreation. Outdoor education has a significant role in promoting life long commitments to outdoor places. Further implications for both research and practice will be discussed.

References

- Beaton, A. A., & Funk, D. C. (2008). An evaluation of theoretical frameworks for studying physically active leisure. *Leisure Sciences, 30*, 53-70.
- Creswell, J. W., & Plano Clark, V. L. (2010). *Designing and conducting mixed methods research*. Thousand Oaks, CA: SAGE Publications.
- Farnum, J., Hall, T., & Kruger, L. E. (2005). Sense of place in natural resource recreation and tourism: An evaluation and assessment of research findings. *Recreation and Tourism Initiative: Forest Service, United States Department of Agriculture*.
- Funk, D. C., & James, J. (2001). The psychological continuum model: A conceptual framework for understanding an individual's psychological connection to sport. *Sport Management Review, 4*, 119-150.
- Kyle, G. T., Graefe, A., & Manning, R. (2005). Testing the dimensionality of place attachment in recreational settings. *Environment and Behavior, 37*(2), 153-177.
- Williams, D. R., Patterson, M. E., Roggenbuck, J. W., & Watson, A. E. (1992). Beyond the commodity metaphor: Examining emotional and symbolic attachment to place. *Leisure Sciences, 14*, 29-46.
- Williams, D. R., & Vaske, J. J. (2003). The measurement of place attachment validity and generalizability of a psychometric approach. *Forest Science, 49*(6), 830-840.

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Constructing a family adventure experience: Key elements, aspects and outcomes

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Background

While family leisure is a growing area of inquiry, focus on family outdoor recreation or family adventure experiences remains limited. Outdoor recreation and camping experiences, however, are particularly well-suited to enhancing family bonding and cohesiveness (Hawkes, 1991). This has been suggested to be the case because of the unfamiliar environment, the social structure, and the types of interactions required to successfully negotiate the environment and task (Huff, Widmer, McCoy, & Hill, 2003). Much of the existing research in this area has focused on organized family camping experiences (Agate & Covey, 2007; Taylor, 2006) or short-term adventure experiences, usually 1-2 days in length (Freeman & Zabriskie, 2002; Kugath, 1997). However, a handful of authors have investigated longer programs with promising results. In one such study of a five-day father-son adventure course, Ewert et al. (2011) found significant increases in trust, communication and social support between fathers and sons. The idea that challenging outdoor recreation activities contribute to bonding and relationship development was further explored by Huff et al. (2003), who compared participation in different types of challenging outdoor experiences to a control group, and reported that participation significantly and positively impacted familial relationships.

It has been generally acknowledged that the social environment is an important aspect of the outdoor adventure milieu, but little is known about how these relationships are fostered and what happens to them after the conclusion of the course. This is an especially interesting question for family adventure courses, where participants arrive, participate and depart in already established pairs. Understanding which elements of family adventure experiences are most impactful, and how participants perceive and experience these impacts will enable practitioners and researchers alike to better create and utilize these experiences. Thus, the purpose of this study was to better understand the phenomenon of father-child participation in an Outward Bound family course. This abstract focuses on the important elements of these courses, as reported by the participants, as well as the ways in which course elements were perceived to impact parent-child relationships both during the course, and upon returning home.

Methods

This abstract reports on one piece of a larger ethnographic study designed to understand the phenomenon of father-child participation in an 8-day Outward Bound (OB) family course. Data collection methods included in-depth observation of an OB family course during the summer of 2012, coupled with pre- and post-course interviews, as well as interviews with several additional groups of participants, including students who had participated in a family course within the past 1-5 years, members of a family contract course, and family course instructors. In addition to eight consecutive days of participant observation, 27 interviews were conducted with 21 participants, who were members of nine different families, or who were instructors. Data collection and analysis followed the recommendations for ethnographic and social science field work by Emerson, Fretz and Shaw (1995) and Lofland, Snow, Anderson and Lofland (2006). Data were transcribed verbatim and imported into NVivo. Data analysis was an iterative process involving the visiting and revisiting of data. This open coding process then gave way to the creation of themes, followed by more focused coding.

Results

Analysis of student and instructor interviews generated three major categories that, taken together, help to explain the ways in which the family course was perceived to be both important and impactful. These categories were termed *elements*, *aspects* and *outcomes* of the OB family course, and were differentiated in the following way: *elements* are structural features of the courses and refer to the presence or absence of some thing or object, such as duo, rock climbing, or peak ascent. *Aspects*, on the other hand, are characteristics of the setting or experience that are important, but often intangible and inherent to the setting or environment. Examples of aspects included time spent together, doing something “real”, finding common interests, escaping normal rules of interacting, and connecting on a different level. Finally, *outcomes* are the perceived results of both elements and aspects, as they are experienced by parents and children. Examples of outcomes in this study included sharing emotions, increased communication, pride in each others’ accomplishments, and letting go of control.

There is an inherent relationship between these categories; each of the course elements creates a variety of opportunities for personal growth and relationship development by creating experiences that are characterized by the aspects, which may then lead to some of the outcomes described by participants. The following quote illustrates this relationship:

“we talked about a lot of the problems that we thought were going on in our family and we talked about how we could fix them...and me and my dad both cried [laughs]. But it was like by the end of it...we had needed to have that talk for a really long time, and we hadn’t like made the time to do it, just because its such a hard thing to do. So, I think that helped us, and really just being around each other all the time, and um, having to like rely on each other, um, out in nature really brought us together.” (Deanna, Family D)

Deanna demonstrates how a particular element—the duo—provided structured and dedicated time together (aspects), which allowed for conversation to take place. Deanna and her father both attribute this time together to changes in their relationship with one another, as well as to the larger family dynamic once they returned home (outcome).

Discussion

The findings of this study are akin to that provided by Walsh and Golins (1976), in their original description of the Outward Bound Process (OBP). Their description of the “structures, components and conditions whose presence and interaction ensure that the experience is educative” (p. 1) has become a highly referenced model in the adventure education field. One of the main differences inherent to this study, however, which is not accounted for by Walsh and Golins’ model, nor by McKenzie’s (2003) re-examination of the model, is the existence of a pre-established parent-child relationship. The existence of these relationships influences not only the experience and importance of the basic elements and aspects of the course, but also the desired outcomes. While participating in a family course, students are simultaneously acting as members of two different communities of practice—that of the course itself, and that of their own family. This duality of membership may ultimately serve to create change that exists in situations outside of the adventure course.

Family adventure experiences are unique both as a type of family experience, and as a type of outdoor adventure program. These experiences rely on the interaction of structure, activity, and facilitation, as well as more intangible aspects of the setting. Understanding these interactions may lead to the replication and extension of these types of family experiences in settings that are more accessible or affordable to the general population. Thus, this research strives to contribute to an enhanced understanding of the ways in which these courses can

contribute to familial relationship development, as well as overall understanding of familial relationships in today's society.

References

- Agate, S., & Covey, C. (2007). Family camps: An overview of benefits and issues of camps and programs for families. *Child and Adolescent Psychiatric Clinics of North America*, 16(4), 921-937.
- Emerson, R. M., Fretz, R. I., & Shaw, L. L. (1995). *Writing ethnographic fieldnotes*: University of Chicago Press.
- Ewert, A., Davidson, C., Overholt, J., Luo, Y., Billingham, R., & Bishop, C. (2011). *Retying the Knot: Enhancing Father/Son Relationships Through Adventure Education*. Paper presented at the Canadian Conference on Leisure Research, Ontario, Canada.
- Freeman, P., & Zabriskie, R. (2002). The role of outdoor recreation in family enrichment. *Journal of Adventure Education and Outdoor Learning*, 2(2), 131-145.
- Hawkes, S. (1991). Recreation in the family. In S. Bahr (Ed.), *Family research: A sixty-year review 1930-1990* (Vol. 1990, pp. 387-433). New York: Lexington Books.
- Huff, C., Widmer, M., McCoy, K., & Hill, B. (2003). The influence of challenging outdoor recreation on parent-adolescent communication. *Therapeutic Recreation Journal*, 37(1), 18-37.
- Kugath, S. (1997). *The effects of family participation in outdoor adventure programs*. (Unpublished doctoral dissertation), Indiana University, Bloomington.
- Lofland, J., Snow, D., Anderson, L., & Lofland, L. (2006). *Analyzing Social Settings* (Fourth ed.). Belmont, CA: Wadsworth.
- McKenzie, M. (2003). Beyond "the Outward Bound process:" Rethinking student learning. *Journal of Experiential Education*, 26(1), 8-23.
- Taylor, S. (2006). Family camps: Strengthening family relationships at camp and at home. *Camping Magazine*, 79(4), 54-59.
- Walsh, V., & Golins, G. (1976). *The Exploration of the Outward Bound Process*. Denver, CO: Colorado Outward Bound School.

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Teach Your Children Well: The Role of Parental Socialization in the Transformation of Children's Play in Wild Nature

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Background

The *nature* of outdoor play has changed. Today children increasingly spend their free time in adult-led activities and indoor play (Hofferth & Sandberg, 2001). Concerns regarding this societal shift gained mainstream attention with the publication of *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder* (Louv, 2005). A back-to-nature movement ensued at national, state, and local levels with parks and recreation organizations creating programs designed to get children back into wild environments (e.g., Children in Nature Programs offered by the National Park Service). We proposed that the conversation surrounding the back-to-nature movement missed the mark on two critical points. First, replacing children's spontaneous, *unadulterated* (Lester & Maudsley, 2006) outdoor play with adult-led programming was not an equivalent substitution for informal outdoor play. Secondly, the decline in children's outdoor play had been attributed to a host of modern ills (e.g., electronic games) without acknowledgment of the role of parents. Children, as minors, are legally dependent on their parents or other caregivers (Valentine, 1997). Parents are not only the *gatekeepers* of children's play and free-time alternatives (e.g., purchase of electronics or registration in organized sports), but also serve as children's primary socializers until adolescence (Eccles & Harold, 1991; Welk, Wood, & Morss, 2003). The purpose of this presentation, drawn from a larger study, is twofold: (a) to examine how parental socialization contributed to changes in children's play in wild nature from the previous generation and (b) to initiate a discussion of how outdoor and environmental educators may assist parents in providing opportunities for their children to reap the developmental benefits of playing in wild nature environments.

Methods

This presentation was derived from a larger qualitative comparative case study that examined the relationship between parental socialization and children's outdoor play. Both direct and indirect (i.e., mediated, moderated, or incidental) forms of parental socialization were examined. The theoretical framework and sensitizing concepts were drawn from outdoor play and leisure socialization literature as well as self-determination theory (Deci & Ryan, 1985) and expectancy-value theory (Eccles, 1983). Parents ($n = 19$) and their 8- to 12-year-old children ($n = 21$) in 10 families shared their stories of outdoor play through semi-structured interviews and an archival photographic record of the children's outdoor play spaces and toys taken during a child-led tour. A purposive sample was drawn from families in and around the urban center of a Midwestern county. A modified analytic induction strategy guided data collection and analysis. Case narratives derived from the data were coded in MAXQDA and used to develop worksheets for comparative analysis.

Results

A combination of thick description, descriptive statistics, and photographs are used in this presentation to portray study findings. Relatively the same ratio of parents played in wild nature when they were children compared to the 8- to 12-year-olds in the study. Differences between the experiences of parents and children were related to five aspects of children's outdoor play: (a) physical play environments, (b) social play environments, (c) play activities, (d) frequency

and duration, and (e) motivations for playing in wild nature. The one aspect that remained unchanged over generations was children's positive emotions, a component of the motivations construct. Positive emotions were associated with children's experiences of novelty, challenge, and adventure in wild nature. Whereas wild nature was independently accessible to the parents as children because it was outside their doors, children in the study were dependent upon parents transporting them to a public location, as occurred with five of the families, or to visit family friends or relatives in the country, as occurred with seven of the families. Parents in five of the families paid for their children to participate in classes that included staff supervised playtime on a nature playground. Only two of those families had ever visited the nature playground just to play. Although four families routinely visited the parents' childhood homes, only two parents shared these wild nature areas with their children. Of the five parents who grew up on farms, four demonstrated strong attainment values (i.e., sense of self) related to their childhood play. These five parents provided opportunities for their children to play in wild nature. The one family where both the mother and the father grew up on farms relocated to a partially wooded property in the country explicitly to facilitate the outdoor play of their children ages 6, 8, and 10 years. While all parents valued their positive memories of playing in wild nature and wanted their children to experience the same, parents struggled to see the utility value (i.e., contribution to long-term or future goals) for their own children, even when the question was reframed as a discussion of what they derived as adults from their childhood play in wild nature. The saliency of utility values for their children's organized programs coupled with the inherent inconveniences to parents in facilitating play in wild nature rendered these infrequent experiences.

Discussion

Findings are compared and contrasted to the literature with an emphasis on contributions that further an understanding of the role of parents in children's play in wild nature environments. As families increasingly reside in cities and suburbs, access to wild nature for purposes of children's play requires parents' time and transportation. Potential sampling biases resulted in a larger portion of parents valuing opportunities for their children to play outdoors enough to pay for it, via adult-led organized programs, than might be expected in the general population. The structure imposed and the presence of adults rendered the children's play qualitatively different from that of their parents and diminished the children's potential to reap developmental benefits of playing in wild nature. The closest most children came in this study to the unfettered independent play in wild nature experienced by their parents was when they visited the parents' childhood homes or rural family friends, which was unattainable for most families. Only parents who played in wild nature as children facilitated their children's independent play in similar environments or participated in family outdoor recreation. Parents can be educated about the immediate and long-term benefits of children's unstructured play in wild nature in addition to the ongoing importance of offering family programs. Although much research remains to be done, our study suggested the *importance* of three issues: (a) the fundamental role of parents, (b) *unadulterated* wild nature play experiences for children (Lester & Maudsley, 2006), and (c) challenge and adventure to foster children's motivations for outdoor play particularly as children develop throughout their middle childhood years. Finally, in light of the generational changes in children's wild nature play experiences the hidden costs of forbidding consumptive outdoor play in parks and on public lands rather than managing these formative childhood experiences should be considered. If children are permitted to "Take only pictures and leave only footprints," they may not develop the same affinity for nature or attainment value as children who are able to

explore, rummage, and scavenge in the woods. Parents have an important role in facilitating the connections that children have to wild nature.

References

- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. NY: Plenum Press.
- Eccles, J. (1983). Expectancies, values and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motivation* (pp. 75-146). San Francisco: Freeman.
- Eccles, J. S., & Harold, R. D. (1991). Gender differences in sport involvement: Applying the Eccles' Expectancy-Value Model. *Journal of Applied Sport Psychology* 3, 7-35.
- Hofferth, S. L., & Sandberg, J. F. (2001). Changes in American children's time, 1981-1997, In S. L. Hofferth & T. J. Owens (Eds.), *Children at the millennium: Where have we come from, where are we going?* (pp. 193-229). Oxford, UK: Elsevier Science LTD.
- Lester, S., & Maudsley, M. (August 2006). *Play, naturally. A review of children's natural play*. London: Commission for Playday 2006 by the Children's Play Council.
- Louv, R. (2005). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill, NC: Algonquin Books of Chapel Hill.
- Valentine, G. (1997). "Oh Yes I Can." "Oh No You Can't": Children and parents' understandings of kids' competence to negotiate public space safely. *Antipode*, 29(1), 65-89.
- Welk, G. J., Wood, K., & Morss, G. (2003). Parental influences on physical activity in children: An exploration of potential mechanisms. *Pediatric Exercise Science*, 15, 19-33.

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Green Relationships Model: Toward a Conceptual Framework Detailing the Impact of Green Exercise on Relationship Satisfaction

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Much of the \$2.3 trillion that the United States annually spends on healthcare can be offset through wellness-promoting behaviors (National Healthcare Expenditures Data, 2010). Green exercise, defined as physical activity in preserved natural settings, is one such behavior that enhances human health over and above the effects of both time spent in green settings and exercise in developed settings (Pretty, Peacock, Sellens, & Griffin, 2005). Recent research shows significant correlations between participation in green exercise and decreases in psychological measures of hostility, depression, anxiety, and stress levels (e.g., Barton, Hine, & Pretty, 2009; Hansmann, Hug, & Seeland, 2007; Mind, 2007; Pretty, Griffin, Sellens, & Pretty, 2003; Roe & Aspinall, 2011). Research has also demonstrated significant positive correlations between green exercise participation and improvements in physiological measures of blood pressure, cortisol levels, and immune functioning (e.g. Hartig, Mang, & Evans, 1991; Pretty et al., 2005; Ulrich, 1981).

The above outcome variables of interest in green exercise research are also significant moderating variables in investigations of couples' relationship satisfaction. Family researchers have consistently demonstrated bi-directional relationships between relationship satisfaction and partner anxiety, depression, stress, and hostility (e.g., Bodenmann, 2005; Bookwala, 2005; Erol & Orth, 2013; Fishman & Meyers, 2000; Hawkins & Booth, 2005; Pihet, Bodenmann, Cina, Widmer, & Shantinath, 2007; Randall & Bodenmann, 2009; Story & Bradbury, 2004; Whisman, 2012). Although there is a potential overlap between these two unique concepts, research is currently limited by a lack of understanding regarding the connection between green exercise and relationship satisfaction. Given this edge of knowledge, the appropriate next step is to encourage research exploring the relational implications of green exercise by creating a conceptual framework that conceptualizes the phenomenon of interest.

Green Exercise and Relationship Satisfaction

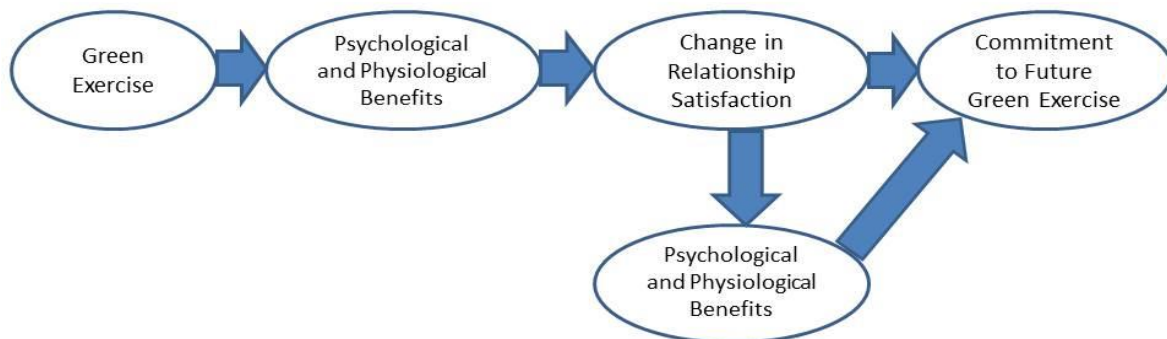
This paper will begin with a description of the article selection methodology used to uncover relevant literature regarding green exercise and relationship satisfaction. The next section will continue with a brief discussion regarding the historical background that wilderness and green spaces have held in the United States. The intention behind this section is to demonstrate how attitudes towards green exercise may carry significant historical 'baggage' – an important point to consider when researching this topic locally. The paper will then divide into separate reviews of research and theory as they respectively pertain to green exercise and relationship satisfaction. Since much has already been written on relationship satisfaction in the family field, the majority of this section will focus on introducing and highlighting green exercise research. A conceptual model will then be introduced based on what has been learned from relevant literature and theory, specifically synthesizing principles posited by Attention Restoration Theory, Stress Reduction Theory, and Family Ecology Theory. The paper will conclude with a discussion about the implications of this new model alongside suggestions for its application in future research.

The Green Relationships Conceptual Model

The Green Relationships Model (Figure 1) begins with an individual engaging in green exercise. Benefits from this activity include improvements to measures of psychological and physiological wellness. The residual of these individual-level improvements then predicts higher levels of relationship satisfaction. Further, improvements to relationship satisfaction lead to additional improvements in psychological and physiological wellness for individuals over and above the initial benefits. This multiplier effect is a result of the bi-directional relationship between individual wellness and relationship satisfaction. The Green Relationships Model then posits that a cognitive awareness of the individual and relational benefits experienced through regular green exercise helps to promote the maintenance of fitness goals. As one participates in green exercise, s/he experiences personal benefits, the residual of which manifests as relational benefits, which then multiplies the original personal benefits. A positive attitude towards green exercise gleaned through an awareness of these benefits over time combined with the relevant positive social pressure in couples (when partners recognize the individual and relational health benefits) suggests a heightened intention to participate in future green exercise (Ajzen, 1988).

Recognizing that myriad countries around the world are already implementing green exercise-based health campaigns (e.g., England, New Zealand, Japan), it is vitally important to develop a clear understanding of the systemic relational effects of green exercise to ensure that it can be safely executed via both clinical interventions and public health initiatives. The Green Relationships Model is an adequate first step towards better understanding how green exercise affects couples.

Figure 1. The Green Relationships Model



References

- Ajzen, I. (1988). From intention to actions: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), *Action Control: From Cognition to Behavior* (pp. 11-39). Heidelberg: Springer. doi: 10.1007/978-3-642-69746-3_2
- Barton, J., Hine, R., & Pretty, J. (2009). The health benefits of walking in greenspaces of high natural and heritage value. *Journal of Integrative Environmental Sciences*, 6(4), 261-278. doi: 10.1080/19438150903378425
- Bookwala, J. (2005). The role of marital quality in physical health during the mature years. *Journal of Aging & Health*, 17, 85-104. doi: 10.1177/0898264304272794
- Erol, R. Y., & Orth, U. (2013). Actor and partner effects of self-esteem on relationship satisfaction and the mediating role of secure attachment between the partners. *Journal of Research in Personality*, 47, 26-35. doi: 10.1016/j.jrp.2012.11.003
- Fishman, E. A. & Meyers, S. A. (2000). Marital satisfaction and child adjustment: Direct and mediated pathways. *Contemporary Family Therapy*, 22, 437-452. doi: 10.1023/A:1007848901640
- Hansmann, R., Hug, S. M., & Seeland, K. (2007). Restoration and stress relief through physical activities in forests and parks. *Urban Forestry & Urban Greening*, 6(4), 213-225. doi: 10.1016/j.ufug.2007.08.004
- Hartig, T., Mang, M., & Evans, G. W. (1991). Restorative effects of natural environment experience. *Environment and Behavior*, 23, 3-26. doi: 10.1177/0013916591231001
- Hawkins, D. & Booth, A. (2005). Unhappily ever after: Effects of long-term, low-quality marriages on well-being. *Social Forces*, 84, 451-471. doi: 10.1353/sof.2005.0103
- Mind. (2007). *Ecotherapy: The green agenda for mental health*. London: Mind.
- Pihet, S., Bodenmann, G., Cina, A., Widmer, K., & Shantinath, S. (2007). Can prevention of marital distress improve well-being? A 1 year longitudinal study. *Cinical Psychology & Psychotherapy*, 14, 79-88.
- Pretty, J., Griffin, M., Sellens, M., & Pretty, C. (2003). Green exercise: Complementary roles of nature, exercise, and diet in physical and emotional well-being and implications for public health policy. Retrieved from <http://www.outdoorfoundation.org/pdf/GreenExercise.pdf>.
- Pretty, J., Peacock, J., Hine, R., Sellens, M., & Griffin, M. (2005). The mental and physical health outcomes of green exercise. *International Journal of Environmental Health Research*, 15(5), 319-337. doi: 10.1080/09603120500155963
- Randall, A. K., & Bodenmann, G. (2009). The role of stress on close relationships and marital satisfaction. *Clinical Psychology Review*, 29, 105-115. doi: 10.1016/j.cpr.2008.10.004
- Roe, J., & Aspinall, P. (2011). The restorative benefits of walking in urban and rural settings in adults with good and poor mental health. *Health & Place*, 17, 103-113. doi: 10.1016/j.healthplace.2010.09.003
- Story, L. & Bradbury, T. (2004). Understanding marriage and stress: Essential questions and challenges. *Clinical Psychology Review*, 23, 1139-1162. doi: 10.1016/j.cpr.2003.10.002
- Ulrich, R. S. (1983). Aesthetic and affective response to natural environment. In: I. Altman & J.F. Wohlwill (Eds.), *Human behavior and the natural environment*. New York: Plenum.
- Whisman, M. A. (2012). Relationship discord and the prevalence, incidence, and treatment of psychopathology. *Journal of Social and Personal Relationships*, 1-8. doi:10.1177/0265407512455269

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