

**Wilderness Therapy Symposium Pre Conference**  
**Current Research on Outdoor Behavioral Healthcare**  
**Thursday 8/27/15**

Time	Presenter	Title
9:00-9:30	<b>Gil Hallows</b> , Chair, OBHC; Executive Director, Legacy Outdoor Adventures  <b>Michael Gass</b> , PhD, LMFT; Professor, The University of New Hampshire, Department of Kinesiology, Outdoor Education Program. Director; OBH Center at UNH	<i>Welcome and Overview to OBH Research Preconference</i>
9:30 – 9:50	<b>Michael Gass &amp; Steve Javorski</b>	<i>The Relationship between Incidents and Client Treatment Outcomes in OBH</i>
9:50-10:10	<b>Steve Javorki</b> , MA; Faculty, Vancouver Island University, Child and Youth Care Program	<i>Individual and Program Level Predictors of Client Change in OBH</i>
10:10-10:30	<b>Anita R. Tucker</b> , PhD, LICSW; Associate Professor, The University of New Hampshire; Associate Director, The OBH Center at UNH	<i>The Impacts of OBH: Utilizing an Integrated Care Approach</i>
<b>10:30-10:45</b>	<b>Break</b>	
10:50-11:10	<b>Steven DeMille</b> , LCMHC, PhD; Research Director, Redcliff Ascent	<i>The Impact of Gender on the Treatment Process in an OBH Program</i>
11-10-11:30	<b>H. Lee Gillis</b> , PhD, Licensed Psychologist; Professor, Georgia College and State University, Department of Psychology.  <b>Keith C. Russell</b> , PhD; Professor, Western Washington University, Coordinator of Outdoor Recreation.	<i>Progress Monitoring in OBH Addictions Treatment</i>
<b>11:30-12:00</b>	<b>Group Discussion and Q &amp; A from Morning Sessions</b>	
<b>12-1:00</b>	<b>Lunch &amp; Keynote, Gary Burlingame, PhD.</b>	<i>Capturing the Client Voice to Improve Outcomes and Enhance Their Group Experience</i>
1:00-1:20	<b>Katie Massey</b> , MSW, MPH; Research Director, Evoke Wilderness Therapy	<i>What Predicts Outcomes according to Parents: From Intake to 18 months Post OBH Treatment.</i>
1:20-1:40	<b>Joanna Bettmann Schaefer</b> , PhD, LCSW; Associate Professor, The University of Utah, School of Social Work.	<i>Differences between Adopted and Non-adopted Adolescents in Wilderness and Residential Treatment</i>
1:40-2:00	<b>Ellen Behrens</b> , PhD, Licensed Psychologist; Assistant Professor, Westminster College, Master's in Mental Health Counseling Program.  <b>Sean Raleigh</b> , PhD, Associate Professor, Westminster College, Department of Mathematics.	<i>Dose of Treatment Services as Predictors of Outcomes for Youth in Wilderness and Residential Treatment</i>
2:00-2:20	<b>Mark Widmer</b> , PhD; Professor, Brigham Young University, Marriott School of Management.	<i>Adaptation of an Adolescent Coping Assessment for Therapeutic Recreation and Outdoor Adventure Settings</i>
2:20-2:40	<b>Keith C. Russell &amp; H. Lee Gillis</b>	<i>Adventure Therapy Experience Scale (ATES)</i>
<b>2:40-3:00</b>	<b>Group Discussion and Q &amp; A Afternoon Sessions</b>	

## **State of the Outdoor Behavioral Healthcare Field: Striving to Thrive**

**Dr. Michael Gass, Director, OBH Center at UNH**

### **Background and Purpose**

The field of outdoor behavioral healthcare (OBH) has emerged from a position of striving to survive to striving to thrive. The current OBHC organization consists of 22 organizations, and the questions facing these outdoor behavioral healthcare programs are less about survival and more focused on factors driving in today's behavioral healthcare markets. Many of the objectives facing these organizations can be broken down into the ability to answer these questions:

- Does it work?*
- Is it safe?*
- Is it worth the money?*
- How can I tell a good program from one that's not?*

The purpose of this overview is to briefly present how the OBHC is addressing these critical issues, what the "next steps" are for the field to answer, and what needs to be done to have the field thrive in the current marketplace. The establishment of the Outdoor Behavioral Healthcare Center at the University of New Hampshire represents a cornerstone in building a bright future for the OBH field. <obhcenter.org>

### **Effectiveness**

The past year has been the most productive one yet in entering data into the research database network. The aggregate data of the participating OBHC programs continues to demonstrate statistically significant changes during treatment that are maintained over one year post treatment. These results, as well as related findings, have been presented at multiple professional conferences (e.g., American Psychological Association) as well as in over 15 different refereed published journals.

### **Risk Management**

In addressing the question of "Is it safe?" the OBHC possesses over 15 years of risk management data of the field. This is the longest operating, multiple program, risk management database existing in either the adventure programming or behavioral healthcare fields. Such data is demonstrating extremely positive trends in client and field staff safety, completion of courses, physical health of both clients and staff, and the decreasing rates of runaways and the need for physical restraints. When addressing issues of risk management, the field can confidently state that participants are two times more likely to injure themselves in their everyday activities than when participating in OBH program activities.

### **Return on Investment (ROI)**

Probably the most rapidly changing area in outdoor behavioral healthcare is how it is being funded. Greater approval for finding treatment, as well as an increasing number of overturned denials for reimbursement, is becoming more commonplace in the field.

### **Accreditation**

The OBHC has joined together with the Association for Experiential Education to produce a comprehensive and effective accreditation program. The resulting products of such a program have led to an increase in the quality of programming, verification of effective treatment, and insights into the fidelity (e.g., how does the program actually work?) of outdoor behavioral healthcare programs.

Future issues to be addressed by the OBH Center include prescriptive treatment and length of program effectiveness. Much of this will be dependent upon the collaboration of programs to investigate such key issues.

## **The Relationship between Incidents and Client Treatment Outcomes in OBH**

**Michael Gass & Steve Javorski**

### **Introduction**

Outdoor Behavioral Healthcare (OBH) programs involve the “prescriptive use of wilderness experiences by licensed mental health professionals to meet the therapeutic needs of clients (Gass et al., 2014, p. 2). One of the key factors of a successful OBH program is the appropriate management of risk. OBH programs have been monitoring risk management by tracking specific incidents in their programming since 2001. These incidents include client injuries, illnesses, therapeutic holds, and elopement. While this incident data has shown that OBH programs are able to effectively manage risk of client injury, illness, therapeutic hold exposure, and elopement, there is little discussion in the literature beyond an exploration of incident rate trends over time. The purpose of this study is to evaluate the effects of incidents in OBH programs by 1) identifying trends in incident rates over time, 2) identifying the factors associated with incident occurrence, and 3) evaluating the relationship between incident rates and client treatment outcomes.

### **Methodology**

Risk management data will be taken from the OBH-C risk management reports from the last 14 years. Client data will be drawn from the NATSAP database. Inclusion criteria will be clients from OBH programs that are between the ages of 13 and 18 who have completed YOQ 2.0 SR assessments at intake and discharge and completed diagnostic/demographic data at intake. Incident rates per 1000 field days for each of the four incident types, intake YOQ 2.0 SR scores (total and subscales), client presenting problems, and client demographics will be used as independent variables (IV). Intake-discharge change scores for each of the seven YOQ variables will be used as dependent variables (DV). It is expected there will be about 300 available records across 5-9 programs. This is determined by the numbers in the database as of Jan 1, 2014. There has been considerable activity over the first half of 2015. If more eligible data is available, it will be included.

Full descriptive statistics will be run on all incidents reported by OBH-C members since 2001. Tables and compound histograms will be created to display the relationships between incident occurrence and: time off day; activity at the time of the incident; and time in treatment (reported as percentage of the average length of stay for a given program that had been completed at the time of an incident). Descriptive statistics will also be run for the reported duration of therapeutic holds. Incident rates in occurrences per 1000 participant days for each calendar year will be calculated for all client incidents. Descriptives will also be run for all other variables in the models.

A two level MLM (Singer & Willet, 2003) predicting client change as measured by the YOQ 2.0 SR from program intake to discharge will be created for each DV using client characteristics as level one IV's and program level characteristics as level two IV's. Client variables will include age, gender, and presenting problems. Presenting problems will be dummy coded across the 6 most common diagnostic categories. Program level characteristics will include average length of stay, therapeutic hold rate, injury rate, illness rate, and runaway rate. The annual rate will be matched to clients from the appropriate year (i.e. clients with YOQ data from 2013 will be matched to their organization's restraint rate from 2013). Data from clients from the current calendar year will be matched with their organization's mean incident rate over the previous three years.

### **Anticipated Discussion and Implications for the Field**

Incident rate trends will be discussed in relation to rates described for the general population and other residential treatment services in the United States. The implications of any relationships found between incident rates and client outcomes will be discussed as they relate to programming and policy framework at the organizational level in order to identify specific program elements that could be further evaluated to continue to deepen the understanding of incidents in OBH. Limitations associated with the lack of a no-treatment comparison group and use of self-report measures will be addressed.

Gass, M. A., Logan, P., Christensen, N., Hallows, G., Liebing, M., Smith, P., . . . Tierney, S. (Eds.). (2014). *Manual of accreditation standards for Outdoor Behavioral Healthcare programs* (1st ed.). Boulder, CO: Association for Experiential Education.

Singer, J. D., & Willet, J. B. (2003). *Applied longitudinal data analysis: Modelling change and event occurrence*. New York, NY: Oxford University Press.

## **Individual and Program Level Predictors of Client Change in OBH**

**Steve Javorski**

### **Background and Purpose**

While previous research into client outcomes in OBH have shown that program participation is associated with clinically and statistically significant improvements in emotional and behavioral functioning, little is known about the specific program features that may support this change (Norton et al., 2014; Tucker & Rheingold, 2010). The purpose of this study was to evaluate the relationships between specific program features, client characteristics, and client outcomes in OBH programs.

### **Methodology**

All data will be drawn from the NATSAP dataset. Inclusion criteria will be clients between the ages of 13 and 18 who participated in an OBH program and completed intake and discharge YOQ 2.0 SR assessments, NATSAP staff and adolescent surveys at intake, and have a complete program survey associated with the organization they attended.

HLM analysis were used to account for the nested nature of the data (Singer & Willet, 2003); clients (level 1) within programs (level 2). Level one independent variables (IV) included intake YOQ scores (total and subscales – one per model), age, gender, ethnicity presenting problems, and the difference between the client's length of stay and the program's average length of stay. Level two IV's included the average hours per day spent travelling, average hours per week of individual therapy, average hours per week of group therapy, hours per week of formal mindfulness-based interventions. These variables were used to create models predicting changes in YOQ 2.0 SR scores from intake through discharge.

### **Anticipated Discussion and Implications for the Field**

A preliminary analysis using similar variables and with a smaller sample found significant relationships between a number of the IV's and the YOQ 2.0 SR total score (Javorski, 2014). If the initial trends extend to the larger sample, discussion will focus around how client and program characteristics may be useful in determining treatment plans in OBH programs. Future areas for further analysis will be identified and discussed, and the limitations of this study will be addressed. Identifying program characteristics that are related to positive change in client functioning and unique to OBH programs may identify specific variables to be studied in a larger evaluation study with a non-treatment comparison group.

## **The Impacts of Outdoor Behavioral Healthcare: Utilizing an Integrated Care Approach**

**Anita R. Tucker, Christine Lynn Norton, Steve DeMille, & Jessalyn Hobson**

### **Background and Purpose**

Mental health treatment for adolescents has been incredibly siloed, focusing only on behavioral health, and largely ignoring the physical health conditions that are often interrelated. Hence, interventions are needed for adolescents that holistically address the needs of youth. Outdoor Behavioral Healthcare (OBH) is an innovative approach that has been used to address both the mental and physical risks of clients. Research has found it an effective intervention for decreasing mental health in adolescents; however minimal research has looked at the intersection of physical and mental health improvements in OBH participants. This study sought to fill the gaps and asks the following:

- (1) How does OBH participation impact the physical health of participants?
- (2) Is there a relationship between youth with different Body Mass Indexes (Underweight, Normal, Overweight, Obese) at intake and mental and physical health improvements post treatment?

### **Methods**

The study sample included 415 adolescents approximately 16 years of age ( $M = 16.2$ ,  $SD = 1.2$ ). Most clients were male (70.0%) and Caucasian (79.3%) followed by Mixed Race (9.5%) and Hispanic (7.0%). In this program, participants receive their mental health and general healthcare while they are immersed in a wilderness living setting. Participants' general health was monitored by calculating their Body Mass Index (BMI) and body composition. Mental health was assessed using the Youth Outcomes Questionnaire 2.0 Self Report, a global measure of adolescent functioning. Data were gathered at admission and discharge.

### **Results**

At discharge Underweight youth significantly gained weight, BMI, and lean body mass ( $p < .01$ ). Overweight and Obese youth, had significant decreases in BMI, weight, and body fat ( $p < .001$ ). For Normal, Overweight and Obese at intake, correlation analyses revealed that being female was significantly correlated to larger decreases in weight, BMI, and body fat than males.

Independent samples t-tests with Bonferroni corrections revealed that Normal, Overweight and Obese youth has significant improvements in mental health functioning across all YOQ scores ( $p < .001$ ) with large effect sizes ( $d > .82$ ). Underweight youth only improved on the Intrapersonal Distress subscale. A 2x4 ANOVA of gender and BMI found females reporting significantly higher levels of YOQ improvements than males. Post hoc analyses revealed that Obese youth had significantly larger improvements on YOQ Total scores than both Overweight and Underweight youth. Finally for underweight youth higher YOQ changes were positively correlated with gains in BMI and gains in body fat.

### **Conclusions and Implications**

Given both the adolescent obesity crisis, along with adolescent female challenges with body image, these results show that WT could be a promising intervention for youth struggling with these issues. Most youth in the sample moved to or remained at a healthy weight and showed significant improvements in their mental health. These changes were especially true for youth who entered the program considered Obese, as well as female participants. Future research is needed however to better understand why it impacted certain youth differently, especially underweight youth. Still, this study is the first of its kinds and begins to shed light on the importance of integrated care in OBH.

# **The Impact of Gender on the Treatment Process in an Outdoor Behavioral Healthcare Program**

**Steven M. DeMille, Marilyn Montgomery, and Kyle Eichas**

## **Background and Purpose**

Outdoor Behavioral Healthcare (OBH) is emerging as a promising and innovative treatment for adolescents with emotional, behavioral, and substance use problems. Past studies on OBH have suggested gender differences in treatment outcome. The purpose of this study is to explore the questions of how OBH treatment works by examining mediating variables of therapeutic outcomes, and process differences between genders.

## **Methods**

To answer the research questions first, we conducted exploratory and confirmatory factor analyses of the Wilderness and Therapeutic Factors Scale. The best fitting model included four first-order factors (Therapist Relationship, Field Staff Relationship, Group Therapy, and One-on-One Time with Staff) and one second-order factor (Perception of Therapy) that accounted for the relations among the first-order factors. Second, we evaluated the relation between Perception of Therapy and change in Distress from admission to discharge using a latent difference score model (Geiser, 2013).

## **Findings**

Results indicated that Perception of Therapy predicted change in Distress,  $B = -.255, p = .029$ . We examined the interaction between Perception of Therapy and Gender. Results provided support for an interaction effect,  $B = .219, p = .058$ . Perception of Therapy was a stronger predictor of change in Distress among females ( $B = -.421, p = .007$ ) than among males ( $B = -.202, p = .072$ ).

## **Discussion and Implications for the Field**

These findings suggest that participants' perceptions of the therapeutic interactions mediate program outcomes, and that the impact of these therapeutic interactions is stronger for females than for males. These findings suggest that further study of how treatment in OBH differentially affects males and females is needed.

## **Progress Monitoring in OBH Addictions Treatment**

### **Lee Gillis and Keith Russell**

#### **Abstract**

ENVIROS' substance use disorder programs for adolescents (Base Camp) and young adults (Shunda Creek) offer a rich environment for the evidence based practice of progress monitoring. Shunda Creek is a 90-day young adult, voluntary substance use and mental health treatment program serving males aged 18-24 near Rocky Mountain House, Calgary, Canada. Wilderness and experiential learning are the primary therapeutic tools. As a main treatment modality, they are building a community and a culture of mindfulness.

Shunda Creek's field staff and clinical staff practice program monitoring of client's treatment using the OQ45.2, Adventure Therapy Experience Scale 2.0, and the Engagement sub scale of the Group Cohesion Scale. Base Camp has been in operation since 1976 and is one of the oldest experiential treatment programs for youth in North America. In its current partnership with Alberta Health Services, Base Camp provides substance use disorder treatment for youth aged 12 to 18 and their families in a 90-day intensive adventure based wilderness program in a remote environment near Cochran, Alberta, Canada. Base Camp attempts to strikes a balance between addiction treatment, building on family strengths, traditional school, outdoor education, and community experiences. Base Camp's field staff and clinical staff practice program monitoring of client's treatment using the Y-OQ, Adventure Therapy Experience Scale 2.0, the Engagement sub scale of the Group Cohesion Scale, a Program Outcome Questionnaire and a scale to measure the weekly impact of elements of the Circle of Courage. Base Camp's progress monitoring is client focused with weekly graphing of Y-OQ scores by clients along with goal setting utilizing scores on the other evaluation instruments.

We will discuss how both Shunda Creek and Base Camp incorporate routine outcome monitoring to inform their staff about individual clients. We will share how we utilize this aggregated data for feedback to program staff and to inform the public on the efficacy of Outdoor Behavioral Healthcare through the use of program monitoring.

## **What Predicts Outcome According to Parents? From Intake to 18 Months Post OBH Treatment**

**Katie Massey Combs, Steve Javorski, Matthew Hoag, and Sean Roberts**

### **Introduction**

Available research suggests that Outdoor Behavioral Healthcare (OBH) programs are effective at treating a wide range of adolescent psychiatric problems. Multiple studies show that adolescents self-report significant improvements from intake to discharge, and suggest that adolescents maintain treatment gains up to one year post-discharge. This study and presentation builds upon the current research by providing longitudinal and parent-reported data.

### **Methodology**

Parents of 659 adolescent OBH clients were invited to complete the Youth Outcome Questionnaire 2.01 (Y-OQ) at intake and discharge, and then at 6 and 18 months post OBH treatment. Response rates at the six and 18-month follow-ups were 69% and 67%. An OLS regression was conducted to identify predictors of parent change scores (change from intake to discharge), and a multi-level model (MLM) was conducted to identify predictors of post-treatment change.

### **Findings**

On average, parents assessed their children as making clinically and statistically significant change during treatment, and maintaining a healthy level of functioning post-discharge. The OLS regression found that attachment disorders and higher intake scores predicted change during treatment. The MLM found that adoption and greater change scores during treatment predicted the rates of change after OBH treatment.

### **Discussion and Implications**

This study adds to the literature by including parent reported data and the longest quantitative follow-up for the OBH field. Numerous studies document that adolescents make dramatic changes in OBH treatment, and this analysis on parent-reported data corroborates those findings. Also, having an 18-month post-discharge follow-up suggests that clients maintain progress even after subsequent therapeutic programs. Unlike studies of adolescent self-reports, this study of parent reported assessments did not find a difference by gender. While this study is limited by the lack of a control or comparison group and by attrition, it does affirm that OBH is effective for a wide range of adolescent psychiatric problems. It also brings up new questions around treating adoption and attachment, and the gender trend found in adolescent self-reports.

## **Differences between Adopted and Non-adopted Adolescents in Wilderness and Residential Treatment**

**Joanna Bettmann Schaefer**

### **Background and Purpose**

Adopted adolescents are disproportionately represented in residential mental health settings, comprising 16.5% of the population of adolescents in residential care while only constituting 2% to 3% of the population in the United States (Bettmann et al., 2011). Given this disproportionate representation and the need to better understand the specific factors affecting this population, this study sought to answer the question, “Do adopted and nonadopted adolescents in wilderness and residential treatment differ psychologically or academically, and if so, how?”

### **Methods**

This descriptive study evaluated a sample of 473 psychological evaluations of adolescents in wilderness and residential treatment. The authors selected a random sample of 500 psychological evaluations, with 100 selected from each year between 2002 and 2006. The authors randomized the sample, and complete data were available for 473 of the original sample of 500. Of the 473, 84.8% came from participants placed in wilderness therapy programs, while 11% came from residential treatment centers and 3.4% from therapeutic boarding schools, representing 21 different programs in total.

The researchers used several strategies to cull data from the psychological evaluations. Quantitative data were gathered from the evaluations, and descriptive statistics and statistics assessing central tendency were conducted. The researchers organized the qualitative data in the evaluations through content analysis (Neuendorf, 2002), which provided for frequency counts. The researchers then analyzed the narrative data in the psychological evaluations to count the occurrences of data such as participant history of aggression, family history of mental health, substance abuse, trauma, past treatment experiences, and reasons for the current residential placement. The authors used quantitative procedures to examine the association between adoption status and clinical measures.

### **Results**

Results indicated that a larger proportion of adopted youth had a history of psychiatric medication use, current psychiatric medication use, and recent trauma than their non-adopted peers. In addition, the adopted adolescents scored significantly higher than their non-adopted peers on the Suicidal Tendency scale. A greater proportion of adopted youth also had a biological relative with a history of mental illness or substance abuse. In terms of academics, adopted adolescents scored lower than their non-adopted peers on all scales of the WIAT academic achievement test, though there were no statistically significant differences between the two groups in terms of intelligence.

There were no significant differences between these two groups in terms of reasons for program referral, most MACI scales (including substance abuse, impulsive propensity, eating dysfunction, anxious feelings, and depressive affect) and MMPI scales.

### **Conclusion and Implications**

The results of this study suggest that wilderness and residential programs may need to specifically target programmatic elements in order to meet the particular needs of adopted adolescents. The risk factor of family mental illness is significant for adolescents. As such, clinicians working with

adopted adolescents should be especially attentive to the assessment process and ensure that all mental illness history is accurately detected and addressed within treatment plans.

Because adopted adolescents in wilderness and residential settings experience suicidality at higher rates, adopted adolescents in these programs expressing suicidality or depressive symptoms should be given additional supervision and supports to ensure their safety. In addition, programs should implement therapeutic group interventions to help adolescents connect with other adopted peers and minimize isolation, which might support adolescents struggling with suicidal feelings.

The fact that adopted adolescents are experiencing higher rates of academic underachievement despite no differences in intelligence suggests that programs working with such youth should assess individuals carefully for academic motivation and achievement. Academic interventions should focus on motivational factors to help adopted clients catch up with their non-adopted peers.

Finally, programs must also incorporate family interventions that teach parents how to respond to their adopted adolescents with supportive and open communication, firm boundaries, warmth, and empathy to strengthen home support systems. Given that 41.6% of the present sample had caregivers who were separated or divorced, programs should also include family therapy that is focused on helping caregivers to improve their abilities to work together in supervising, guiding, and nurturing their adolescent children.

## **Reference**

Bettmann, J.E., Clarkson Freeman, P., & Parry, K.J. (2015 – online first). Differences between adopted and non-adopted adolescents in wilderness and residential treatment. *Journal of Experiential Education*. doi: 10.1177/1053825915569056

**Dose of Treatment Services as Predictors of Outcomes for Youth in Wilderness and Residential  
Treatment  
Ellen Behrens**

PLACEHOLDER

## **Adaptation of an Adolescent Coping Measure for Adventure Therapy**

### **Mark A. Widmer**

The inability to cope appropriately with stress can lead to several psychological challenges among adolescents. These issues include problems with school adjustment, school performance, delinquency, drug use, depression, suicide, anorexia nervosa, and maladjustment. Adventure therapy provides a unique and powerful context to promote effective coping mechanisms. The purpose of this study was to develop an effective assessment to measure coping. A review of literature led the researchers to an outstanding coping measure for adolescents. The authors of this assessment indicate a need to adapt it for specific settings. Consequently, rather than create a new assessment, this study focused on adapting the Response to Stress Questionnaire (RSQ) for adventure therapeutic. The purpose of the study was

- (1) to identify appropriate content for an RSQ Outdoor Adventure Version (RSQ-OAV)
- (2) and gather data to examine the reliability and factorial validity of the instrument

### **Methods**

To adapt the RSQ to adventure therapy contexts, 35 adolescents in an adventure therapy program identified key stressors in their experience. Of the fifty-six stressors identified, the top stressors included frustration with the group, being out of their comfort zone, peers refusing to complete activities, food preparation, thinking about being reunited with parents, fear of injury, equipment failure, physical challenges, outdoor activities, and weather. These 10 stressors were integrated into the RSQ. Steps were undertaken to address content validity. A purposive sample of 144 participants (ages 13-17) representing low to high functioning completed the RSQ-OAV using paper and pencils. Participants were drawn from a traditional high school, an alternative high school with a therapeutic adventure program, and from an adventure therapy program.

### **Data analysis**

Data were analyzed to evaluate the reliability and validity of inferences of the measure. This was followed by a **factor analysis**. In order to examine evidence supporting construct-related evidence of validity, a confirmatory factor analysis to determine factors would replicate findings in the original RSQ. Analysis examined overall fit indices. To account for the large sample size, a  $\chi^2 / df$  ratio was examined. Second, the comparative fit index (CFI) was considered to evaluate the model's absolute or parsimonious fit relative to the null or hypothetical model. For CFI, an index score of .95 or greater is desired for good model fit. Last, the root mean square error of approximation (RMSEA) was considered to assess fit based on the magnitude of the residuals. Using RMSEA, an index score of .08 or less is desired for good model fit.

### **Results**

Reliability analysis resulted in an internal consistency estimate of  $\alpha = .91$ . Maximum-likelihood confirmatory factor analyses (CFA) were conducted to test the hypothesized model of voluntary and involuntary responses to stress. The assessment was analyzed in separate tests for the voluntary and involuntary portions. Results indicated all factors strongly positively loaded with the corresponding latent variable. The model was an adequate fit to the data for the OAV of the RSQ ( $\chi^2(32, N = 144) = 51.163, p < .017$ , CFI = .94, RMSEA = .065). In addition, a two-factor model for involuntary responses to stress also produced an adequate fit ( $\chi^2(36.37, N = 144) = 36.373, p < .085$ , CFI = .98, RMSEA = .53).

### **Conclusions and Implications**

The results of this study suggest the RSQ-OAV reliable inferences may be made from the measure. Further, the assessment demonstrated appropriate factorial validity, with all items loading appropriately and strongly within the hypothesized five-factor structure. Results indicate the RSQ-OAV may be an effective assessment tool to measure adolescent coping in adventure therapy. It may also prove useful in measuring changes in coping skills as a specific outcome to evaluate program effectiveness at promoting coping skills. More specifically, researchers and practitioners can potentially use pre-post measures or repeated designs to examine the effectiveness of specific contexts or situations in wilderness and adventure therapy contexts at increasing coping skills among program participants.

### **Reference**

Russell, M., Widmer, M., Lundberg, N., & Ward, P. (2015). Adaptation of an adolescent coping assessment for therapeutic recreation and outdoor adventure settings. *Therapeutic Recreation Journal*, 49(1).

## **Adventure Therapy Experience Scale (ATES)**

### **Keith Russell and Lee Gillis**

#### **Abstract**

The history and evolution of the ATES 2.0 including factors found in the current version, discussion of factors that may be missing, and plans for the future. The Adventure Therapy Experience Scale (ATES) 2.0 is an attempt to capture the vacillating impact of seven constructs: Nature, Activity, Leader, Peers/Group, Physical Challenge, Mindfulness, and Reflection. The scale (1.0) was birthed at ENVIROS' Shunda Creek program as a rank ordered list of five constructs using both self-report and staff perception after every short (1-4 day trip). Visual analog scaling and open ended text boxes allowed for numeration and elaboration of the constructs following each adventure therapy experience. ATES 2.0 is a 21 item Likert-style instrument developed from feedback received from staff at Shunda Creek as well as attempts to wrestle with ranked data for analysis. We will share the evolution of the instrument from its origins as an attempt to quantify the theoretical constructs presented in Russell & Farnum (2004) to its current state following pilot testing with several OBH programs.

#### **Reference**

- Russell, K. C., & Farnum, J. (2004). A concurrent model of the wilderness therapy process. *Journal of Adventure Education & Outdoor Learning*, 4(1), 39-55.

**Positive Relationship Outcomes between Parents and Adolescent Children  
following a Therapeutic Wilderness Program for Struggling Teens**  
**Katie Liermann, MSW, and Christine Lynn Norton, PhD, LCSW\***

**Overview**

The Voyageur Outward Bound School's Intercept Program is a 28-day therapeutic wilderness program for struggling teens and their families. Pre-program data collected show that families participate in this program because they are concerned about the loss of trust, poor communication, and/or other high-risk behaviors they are experiencing with their children. Though significant research demonstrates the positive impact of therapeutic wilderness interventions on youth functioning (Norton, et al, 2014), more research is needed on the impact on the parent/child relationship and how families are functioning once they leave a program. The purpose of this study is to determine what positive relationship outcomes emerged between parent(s) and their adolescent child after participation in the Outward Bound Intercept program. Though this program is not a traditional Outdoor Behavioral Healthcare program, the risk factors of youth in this program are similar to those in OBH programs (Norton, 2010); therefore, this research is deemed applicable and relevant to the larger category of OBH research. Furthermore, therapeutic wilderness programs are on the same continuum of care as OBH, and may play a key role in addressing the mental health needs of adolescents before they need OBH (Berman & Davis-Berman, 2012).

**Procedure**

This phenomenological qualitative study utilized in-depth interviews and open ended pre-post surveys for nine families in order to answer the following research questions:

- 1) How has the parent/child relationship been impacted since participating in the Intercept course?
- 2) What, if any, aspects of the Outward Bound Intercept curriculum made a positive impact on the parent/child relationship?

The questions focused on how the parent-adolescent relationship has changed since the Intercept course in particular, in regards to communication, trust and connectedness, and also examine what aspects of the Intercept course were beneficial in improving the parent-adolescent relationship, with a focus on the specific skills the family has used since participating in the program.

**Findings**

Qualitative data gained from open-ended survey questions and in-depth phone interviews yielded promising findings in family functioning, in particular, with regard to improved communication. Families reported having learned concrete pro-social communication skills, such as the use of time-outs, active listening, and other assertive communication tools, such as healthy ways of resolving conflict. Families reported that the parent workbook (homework given to parents to complete while their child is on course) and the parent/child conference were the most helpful aspects of the Intercept curriculum for improving the parent/child relationship.

**Implications for OBH**

There is a strong desire among families seeking services to improve communication and trust between parents and teens. However, families in crisis lack concrete behavioral skills for communicating and resolving conflict. This makes treatment planning difficult for OBH mental health professionals because often families are not on the same page. This is a critical area of programming that OBH programs must include, as the research shows that resolving potential conflicts between

parents and youth by finding common treatment goals may have utility in increasing treatment retention (Gopalan, et al, 2010). Improvements in family functioning lead to more sustained treatment outcomes (Schleider, et al, 2014). Other important implications of this study show that parents need to learn concrete behavioral skills, along with their adolescent child, and that providing parents with homework assignments while the child is out in the wilderness phase of treatment, can help keep them engaged in the treatment process. Furthermore, OBH programs need to find direct ways for families to be involved in the treatment process, and promote opportunities for therapeutic conversations between parents and children to practice new communication skills.

### **Limitations & Future Considerations**

It is important to note that these findings are limited due to the small sample size and non-experimental research design. As such, they may not be reflective of all therapeutic wilderness/WT programs. Though the qualitative data gained in this phenomenological study is not generalizable, it does point to the need for wilderness programs to prioritize family functioning as an important treatment goal. Future research is needed to assess the impact that OBH has on family functioning on a larger scale. Current work is being done in this area with the Family Assessment Device and OBHC programs; however, there is a need for additional qualitative research to explore other aspects of OBH beyond family functioning, including examining negative or dissatisfied parents' experiences, parent/caregiver stress/anxiety, the impact of sending an adolescent to wilderness on the entire family system, and the financial strain of engaging with private pay systems.

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\*Dr. Norton is unable to be at the Wilderness Therapy Symposium, but wanted to share this important piece of research.

