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OUTDOOR ADVENTURE AND HEALTH: SUPPORTING EMPIRICAL DATA

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The intent of this paper is to introduce a theoretical framework for considering connections between outdoor adventure and health, not to present the findings of one or two new research studies. A compilation of empirical data will be presented from various studies to illustrate the proposed connections, and provide documentation for subjective observations and beliefs long held by outdoor adventure educators. Therefore, the format that follows is not one of a typical research report, but of a position paper with supporting empirical data from the author's own research.

THE ADVENTURE/HEALTH HYPOTHESIS

There is an increasing awareness of the integrated nature of our lives and how health is affected. Historically, outdoor adventure activities have been perceived as ways for the ultra physically fit to prove themselves. However, outdoor adventure education programs may actually offer opportunities for improving overall wellness beyond the realm of physical fitness. The purpose of this paper is to present some of the author's research that relates to a connection between health and participation in outdoor adventures. If outdoor adventure experiences are self-efficacy enhancing and joyous experiences, it seems likely that they would also enhance the immune system and general well being.

The hypothesis framework is brief and is enumerated below:

1) Outdoor adventure experiences provide individuals opportunities to be truly challenged.
2) Participants experience successes in challenging situations, and those successes build self-efficacy and self-esteem and provide experiences of joy.
3) Self-efficacy contributes significantly to psychological well being and mood, and thereby overall health.
4) Therefore, because outdoor adventure experiences are especially well suited to enhance positive affect, they make valuable contributions to an individual's health.

To examine this idea, we must begin with the philosophical foundation of adventure education. Three of the primary foundational psychosocial theories on which outdoor adventure education is based are the theories of: 1) Optimal Arousal, 2) Self-Efficacy, and 3) Competence-Effectance.

Psychosocial Theories

Elizabeth Duffy began building the Theory of Optimal Arousal in the 1950s when she began to consider that people seek a level of arousal that is related to their individual experiences and skills and environment (Duffy, 1957). The work on this theory evolved from research with rats being trained in physical skills. In this research, Yerkes and Dodson (1908) found that complex skills could be learned more efficiently with moderate arousal levels, and simple skills benefited from greater arousal levels. The 1940s and 50s were also the decades during which Hans Selye began publishing his research and theories on the "Stress Adaptation Syndrome" (1952). Biological scientists as well as psychological scientists were coming to the same conclusions, which were that some degree of arousal (or stress or challenge) is necessary to optimize performance or outcomes. It was Duffy (1957) however, that hypothesized the relationship could be expressed and diagramed in the shape of an inverted "U." The Theory of Optimal Arousal is essentially the core philosophy of most adventure education programs. It is the scientific equivalent of "No pain, no gain," with

the recognition that at some point there are diminishing returns.

The Theory of Competence-Effectance (White, 1959) hypothesizes that people have a need to demonstrate their abilities and that those abilities can effect their circumstances or environment. This has been substantiated in job satisfaction studies that have found the ability to exert some degree of control over one's work situation ranks higher in importance than salary. Csikszentmihalyi (1975) has built on this hypothesis and proposes that individuals actually pursue opportunities that will challenge their competence to effect a situation. The seeking out of such challenges is to experience the satisfaction resulting from the demonstrated competence and its effect. To successfully navigate a rapid that you perceive as more difficult than you typically paddle, is an example of testing your competence and ultimately having a positive effect on your situation, since you remained upright in your boat.

Bandura's (1977) Theory of Self-Efficacy (an individual's belief in their ability to accomplish a specific task) is probably one of the best-known psychosocial theories in the field of outdoor adventure education. The theory hypothesizes that efficacy expectations are weighted by an individual's perceived ability; the task difficulty, the effort needed, and the aid they expect to receive; the situation and the transferability of their perceived abilities; and their persistence and patterns of success. An individual's efficacy expectations can be affected by four basic processes. These processes are: 1) experiences of mastery (the most influential), 2) verbal persuasion, 3) vicarious experience, and 4) physiological states (emotional arousal). The close relationship of the Theories of Optimal Arousal and Competence-Effectance to the Theory of Self-Efficacy is easily discernable. In all three, the desired end product is some type of enhanced performance or personal satisfaction resulting from a situation that presented a test or challenge. Research has also indicated that personally satisfying situations yields a positive impact on the immune system (Ulrich, 1981).

Immune System

An in depth discussion of immune function is beyond the scope of this paper. However, a brief overview could be beneficial. Our body is in a constant struggle to maintain homeostasis within and between all of its systems. When antibodies or injury challenge that homeostasis, the body is required to expend extra energy in its struggle to recover. As a result of much biological, psychological, and neuroendocrine research we know that the body's immune system is a major factor in the fight for homeostasis. We also know that it can be severely depleted by intense physical and/or emotional exertion (Herbert & Cohen, 1993). On the other hand, there are a number of things that can strengthen immune function, and one of those is experiencing joy. Norman Cousins (1985) has written about laughter and how it helped his immune system fight cancer. Studies with heart surgery patients document the value of a strong interpersonal support system (Blumenthal, Burg, Barefoot & Williams, 1987). The natural environment has also been shown to positively effect the recovery process of hospitalized seriously ill patients (Ulrich, 1979, 1981). It seems that much of the improvement in immune function comes from increased antibodies (IgA, IgG, and IgM) and the number of white blood cells (Herbert & Cohen, 1993). If outdoor adventure experiences are self-efficacy enhancing and joyous experiences, it seems likely that they could also be immune system boosters.

From the three psychosocial theories previously discussed, two components are held in common by each theory. One is the importance of challenge and the other is the importance of successful accomplishment of challenges contributing to positive psychological states. For years outdoor adventure educators have observed and discussed the value of these components and have designed programs to capitalize on them. However, we now have empirical data to support these subjective observations. The following sections will present data to support the hypothesis of an adventure/health connection. The *Challenge Data* section will present data from several different studies that will document the challenging nature of outdoor adventure activities. The *Affect Data* section will

present data from three studies that documents the psychologically positive nature of outdoor adventure participation. The intent is for this data to support the *adventure/health hypothesis* that was presented at the first of the paper. Please note that none of the studies were conducted for the purpose of building this hypothesis.

CHALLENGE DATA

There is physiological data documenting that many outdoor adventures are perceived as significant challenges. When we are confronted with a challenge, our body responds by preparing to meet that challenge. This is known as the "fight or flight" syndrome and it is a physiological response. To physically prepare for fighting or fleeing, the body secrets hormones that elicit increased pulse and respiration rates, muscular tension, etc. The greater the perception of danger or challenge, the greater is the increase of these physiologic measures.

Challenge Course Heart Rates. In Table 1, elevated heart rates are noted for different types of challenge course activities. As is typical and can be observed here, the more demanding the tasks resulted in more elevated the heart rates. These data were collected from healthy college age (M=20.65, SD=1.6) males and females who were participants in a 15 week, one-hour per week physical education activity class on a challenge course. The activities over the course of a semester were performed in a sequence of generally easy to more difficult (low events and initiatives to high events), and heart rates were monitored with Polar heart watches. Participants were positioned so the heart monitors would not pick up erroneous heartbeats

Challenge Course Plasma Catecholamines. In addition to heart rate data, plasma catecholamine data indicates the acute challenge of the Power Pole (Pamper Pole) high ropes event (Figure 1). The participants in this study were 11 college age (M=19.9, SD=1.2) males who had been screened for aerobic fitness via a VO_2 max test following the Bruce protocol on a motorized treadmill. Six participants were classified as high fit (>60 ml/kg VO2max), and five as low fit (<42 ml/kg VO2max). The increase in epinephrine from pre-climb to post-jump was significant for both fitness groups, but there was no difference between groups, and there were no differences in norepinephrine levels (Bunting & Gibbons, in review).

Nine-Day Adventure Urinary Catecholamine. The physiologic response to a broader range of outdoor adventure activities is also available (Bunting et al., 2000). This study used urinary catecholamine analysis to document stress response to off-trail backpacking, beginning and intermediate rock climbing, beginning and intermediate whitewater canoeing, and a high ropes course. Figure 2 shows the elevated

TABLE 1

Mean Heart Rates during Various Challenge Course Events

Event	n	Mean	SD	Range
Spider Web	31	123	17.5	90-156
Trust Fall	33	135	31.6	99-181
Low Tension Traverse	26	162	20.4	98-189
14 Ft. Wall	31	158	19.2	118-189
Cat Walk	34	156	15.7	122-194
Heeby Jeeby	14	169	11.2	151-188
High Tension Traverse	14	168	14.6	135-190
Pamper Pole	14	171	10.8	153-187

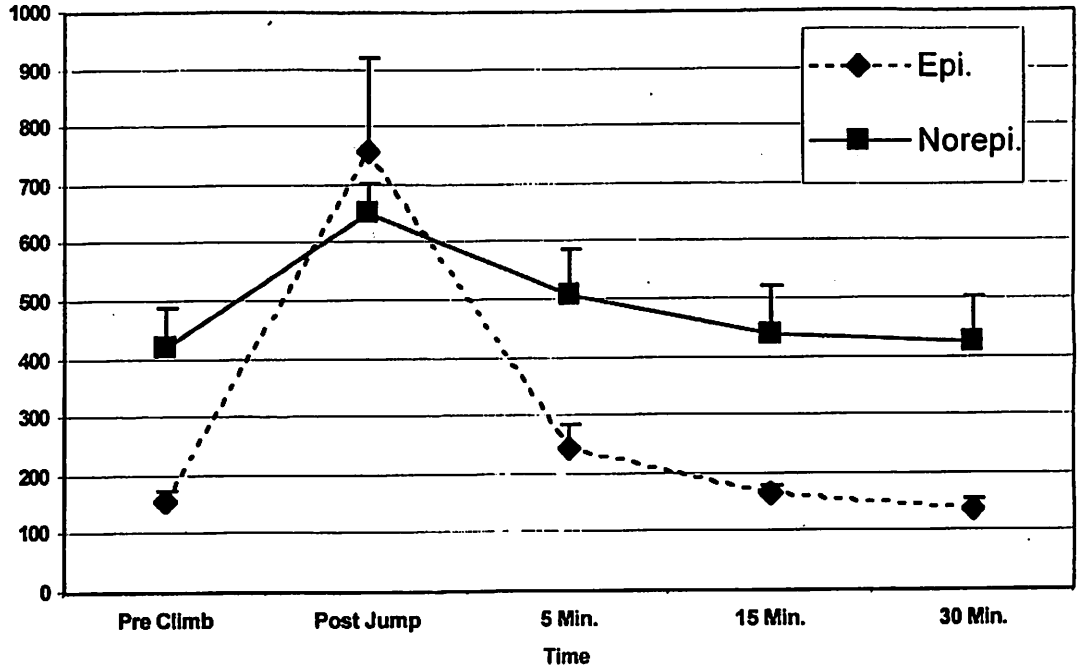

Figure 1. Plasma epinephrine and norepinephrine (pg/ml of plasma) during the Power Pole challenge course event.

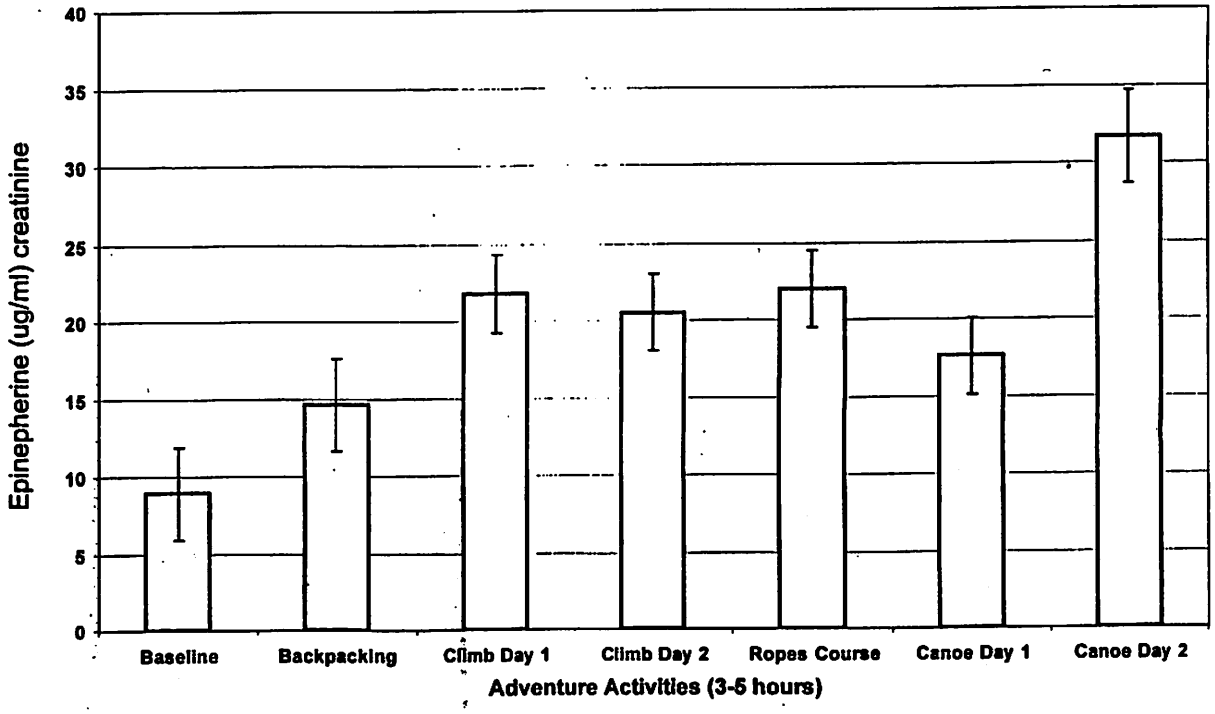

Figure 2. Urinary epinephrine (ug/ml urine) for different outdoor adventure activities. Climb Day 1 & Canoe Day 1 represented beginning level experiences, and Day 2 represented an intermediate level experience. All activities were three to five hours in duration. * indicates a significant difference ($p < .05$) from the baseline time period.

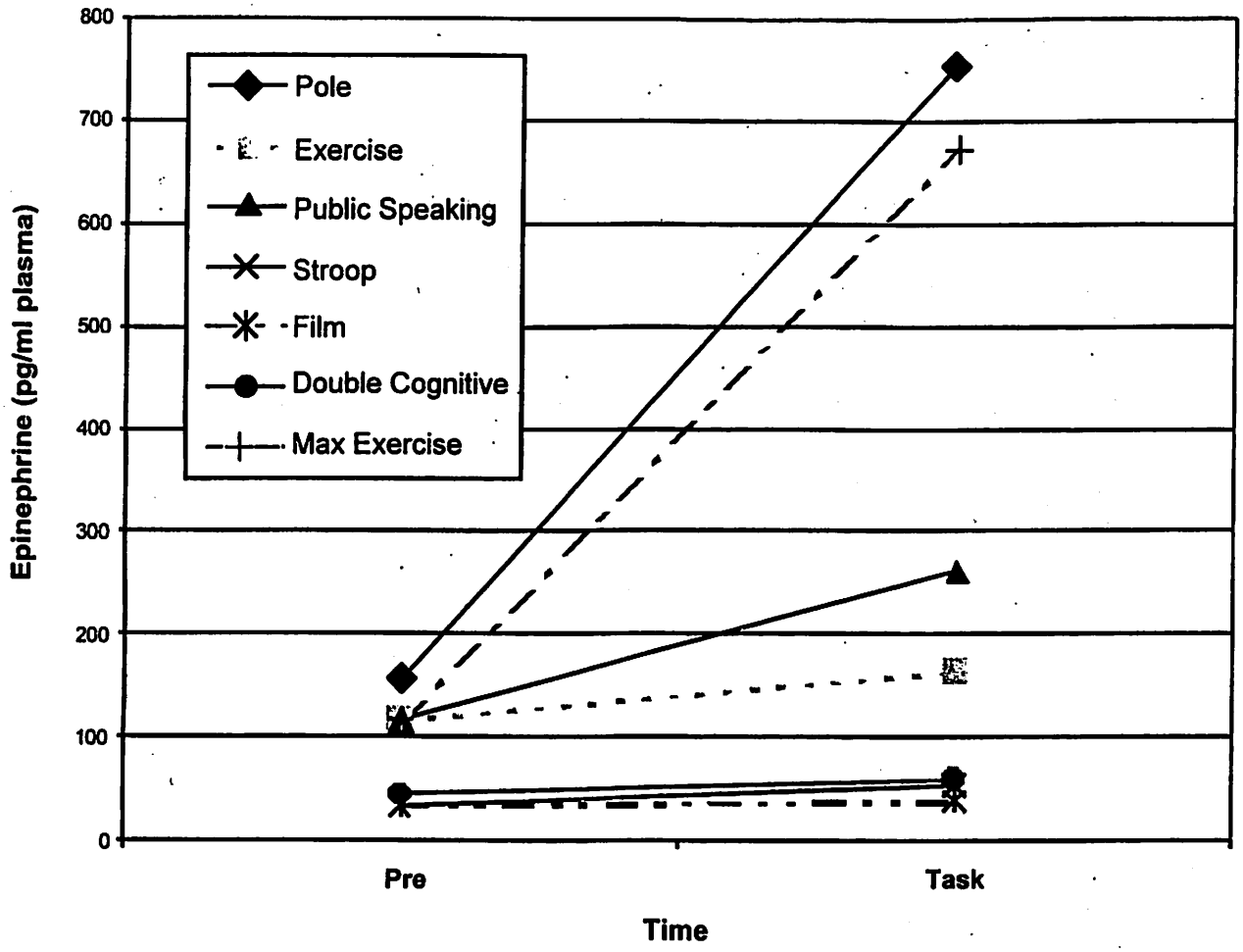

Figure 3. Plasma epinephrine secretion during different types of challenges (stressors), laboratory (L) or field-based (FB). Pole (FB) – Power Pole; Exercise (L); Public Speaking (FB); Stroop (L); Film (L); Double Cognitive (L); Max Exercise (L).

levels of epinephrine and norepinephrine indicating a physiological challenge.

Laboratory versus Field-Based Stress. Another interesting comparison of stress response using plasma epinephrine as the measurement is illustrated in Figure 3. The stressors vary from naturalistic to laboratory tasks, but all were measured using the same quantification of plasma epinephrine. Notably, the Power Pole elicited the highest epinephrine response. The Stroop task (Frankenhaeuser & Johansson, 1976) is a color-work-auditory identification conflict task usually lasting for five minutes. The film involved watching a film depicting industrial accidents ("It Didn't Have to Happen"). Epinephrine secretion was measured as subjects exercised on a motorized treadmill and the blood sample was taken at their point of exhaustion. The Stroop task, aversive film, and maximal exercise were all evaluated for plasma epinephrine response by Hull, Young, and Ziegler (1984). The task identified as "double-conflict" was a modification of the Stroop task that added the components of speed and endurance (12 minutes rather than only 5) (Sothmann, Hart, & Horm, 1991). The occasion used for public speaking was a medical conference with presentations being made by junior faculty members.

The same faculty members were tested following four minutes of stair climbing (Dimsdale & Moss, 1980). Although Dimsdale and Moss identified the exercise as "vigorous," it is defined in this paper simply as "exercise," since it was not adjusted for each individual's fitness level.

The magnitude of the epinephrine response to the Power Pole in comparison to the other tasks is unarguable evidence for the high degree of perceived challenge for the Power Pole. In fact, all of the previous data have been presented for the purpose of supporting the hypothesis that outdoor adventure activities are significant challenges, and are perceived as such by their participants.

AFFECT DATA

Webster's New Collegiate Dictionary defines the noun *affect* \ 'af-ekt \ in the following manner, "1: Feeling. 2: the conscious subjective aspect of an emotion considered apart from bodily changes." So the term *affect*, as used here, is synonymous with emotion. To support observations of affective benefits, there is self-report data from standardized psychological instruments confirming the belief that outdoor adventure experiences enhance an individual's self-perception. Not only are challenge course activities perceived as challenging, as indicated by heart rates and epinephrine, but they also yield positive affective responses.

Challenge Course Anxiety/Happiness. The same students whose heart rates were measured during challenge course activities (Table 1), completed the Spielberger State Anxiety Inventory (Spielberger, Gorsuch, & Luskene, 1983) and the Affect Balance Scale (Bradburn, 1969) following each activity. Those results are illustrated in Figure 4. The State Anxiety scores are plotted on the vertical axis, and the Affect Balance (happiness) Scale on the horizontal axis. All means were located within the shaded box, indicating some degree of anxiety yet a simultaneously high degree of happiness.

Nine-Day Adventure and Anxiety/Happiness. The same self-report measures were used with the participants of the broader based adventure education program that included rock climbing, whitewater canoeing, backpacking, as well as a ropes course (Bunting et al., 2000). The Spielberger State Anxiety Inventory and the Affect Balance Scale were administered immediately following the urine collections at the end of the three-hour adventure task periods. The mean affective scores are plotted in Figure 5. The participants were asked to respond according to their reflection on the entire three-hour period. The positive perceptions of the participants are readily observable.

Challenge Course and Positive Affect. A different self-report instrument, the Positive and Negative Affect Scale (PANAS) (Watson & Tellegen, 1985), was used with semester-long challenge course classes to compare the affect of traditional physical activities with challenge course activities. The PANAS was administered at the beginning of various physical education activity class periods and again at the end of the class period. Each class completed the pre- and post-test for two different class periods during a semester. Both types of activities produced an increase in positive affect, but the challenge course classes had a significantly greater increase in positive affect (see Figure 6) (Bunting, 2000).

SUMMARY & CONCLUSIONS

The data presented above provides empirical documentation for subjective observations and beliefs long held by outdoor adventure educators. The physiological data reported in this paper is evidence that typical outdoor adventure education experiences provide participants with real challenges that can be successfully mastered. The self-reported affective data provides evidence that these challenging experiences yield positive affective results, which fits with the Optimal Arousal, Competence-Effectance, and Self-Efficacy Theories. In slightly different ways, these theories claim that a struggle for a successful outcome yields a greater sense of achievement and psychological rewards. From other studies, we know that psychologically rewarding physical activity experiences contribute to an improved sense of well

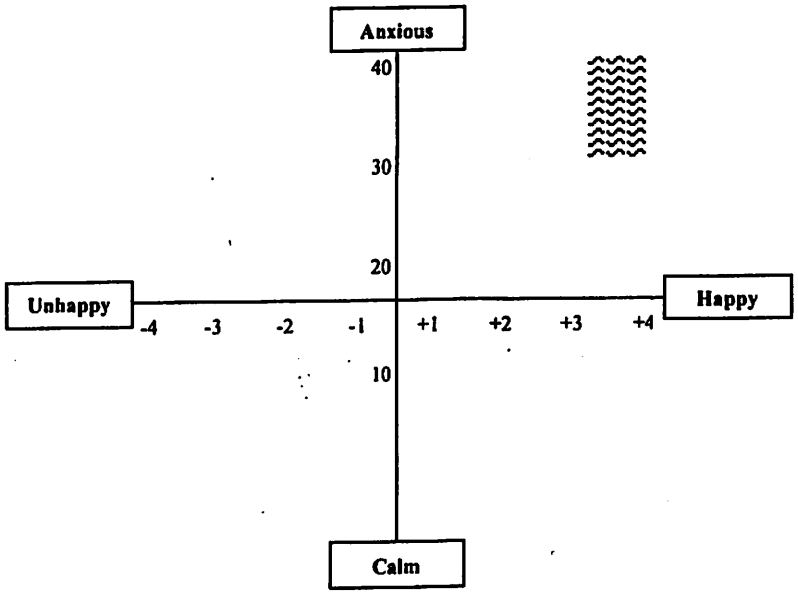

Figure 4. Spielberger State Anxiety Inventory on the *Calm-Anxious* vertical axis. The Affect Balance Scale on the *Happy-Unhappy* horizontal axis. All means fell within the shaded area.

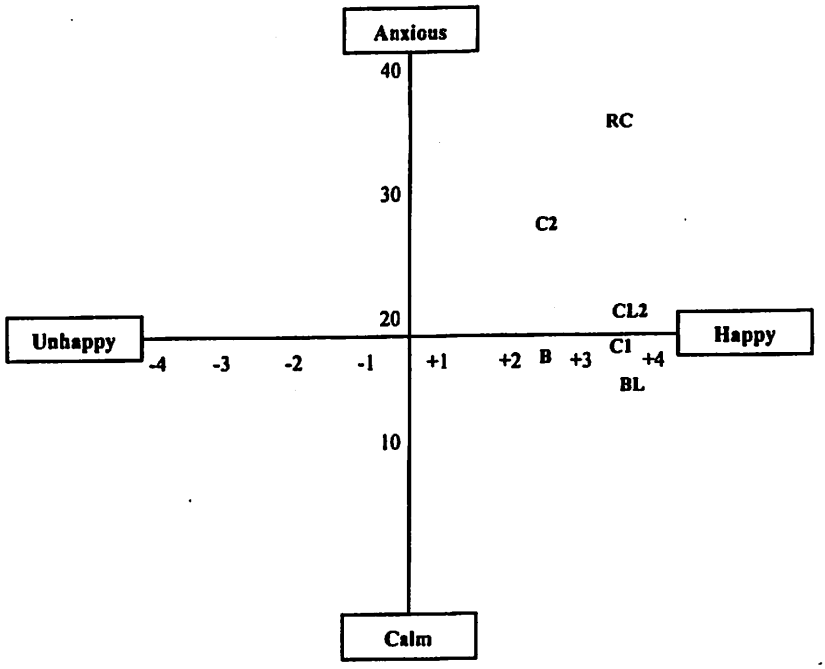

Figure 5. Spielberger State Anxiety Inventory on the Calm to Anxious vertical axis. The Affect Balance Scale on the Happy to Unhappy horizontal axis. B = backpacking; BL = baseline; C1 = day 1 canoeing; C2 = day 2 canoeing; CL1 = day 1 climbing; CL2 = day 2 climbing; RC = ropes course.

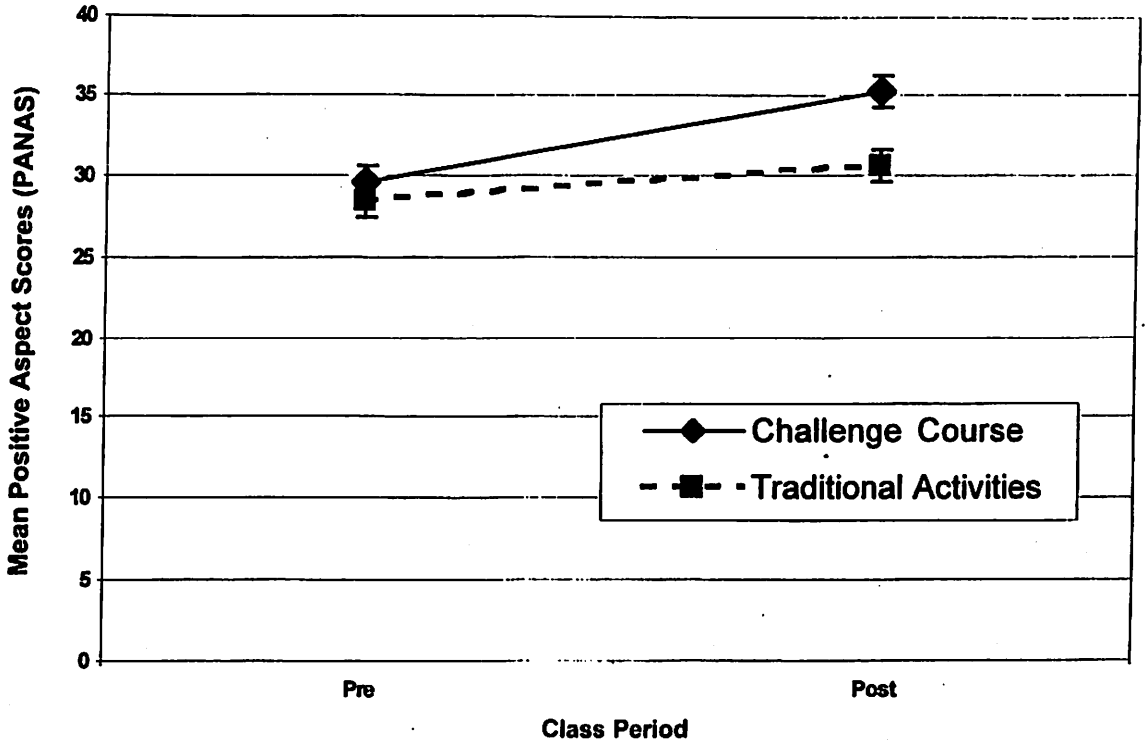

Figure 6. Changes in the mean positive affect scores from the Positive and Negative Affect Scale (PANAS) for traditional activity classes and challenge course classes (pre-class period to post-class period).

being (Bandura, 1992; McAuley, 1991). Therefore, it seems logical to expect a similarly improved sense of well being to result from rewarding experiences of outdoor adventure, and possibly even an enhanced immune system. A next step is to actually measure immune function during and following outdoor adventures.

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THE USE OF ADVENTURE PROGRAMMING IN TRADITIONAL SUBSTANCE ABUSE TREATMENT PROGRAMS: AN EXPLORATORY INVESTIGATION

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INTRODUCTION

Substance use, abuse, and addiction have become major issues in the past several years as the variety and availability of abusive substances has increased. In 1996, an estimated 13 million Americans were active illicit drug users and 109 million Americans age 12 and older had used alcohol in the past month (U.S. Department of Health and Human Services, 1997).

Despite all the efforts made to reduce the use and associated effects of drug abuse, 34% of the U.S. population age 12 and older are users of at least one type of illicit drug (U.S. Department of Health and Human Services, 1997). Different factors contribute to drug abuse, making it a difficult issue to address. One of these factors—the causes that lead a person to engage in addictive behaviors—though fundamental to determining the treatment plan, is still controversial. It is unlikely that there is a single etiological factor that can explain the cause of substance use, abuse and dependence. Genetic, neuropharmacological, psychological, environmental and social factors, all must be considered (Straussner, 1993). Another factor is that there is no unique treatment program considered to be adequate to deal with the great spectrum of abused substances and with their related pharmacological effects.

The complexities of these factors in substance addiction often lead people to make a case for a holistic treatment approach (Miller, 1990). In these holistic treatment approaches, substance abuse programs have increasingly introduced alternative intervention strategies. Leeds and Morgenstern (1996) attested that "there is an increasing interest in integrating various perspectives within the substance abuse field" (p. 81). Successful examples are nutrition, acupuncture and meditation, among others (Rotgers, Keller, & Morgenstern, 1996). The goal of these interventions is to help clients re-establish a lifestyle free of substance dependence. Adventure Programming (AP) is another promising approach in the treatment of drug abuse and addiction. Its efficacy has been tested using outcomes such as decreased recidivism rates (Gillis & Simpson, 1993), reduced frequency of negative thoughts, alcohol craving and relapse (Bennett, Cardone, & Jarczyk, 1998), and increased motivation (Kunstler, 1992).

Nevertheless, adventure programming has not being broadly accepted among traditional practitioners treating substance addict clients. There is a need for comprehensive empirical information to strength interactions between the adventure programming field and traditional substance abuse programs. The purpose of this research was to evaluate the extension of integration of adventure programming with traditional substance abuse treatments and to explore possible constraints inhibiting the implementation of adventure programming as adjunctive intervention.

Adventure Programming

The basic tenets of adventure programming include elements of uncertainty, direct experience of purposeful problem-solving and decision-making situations with real consequences, and an openness of the participant to be challenged, to try, and to reflect upon and learn from new experiences. The focus of most adventure programs is on interpersonal and intrapersonal growth through cognitive acquisition, physical improvement, and emotional and social development. Priest and Gass (1997) stated that "the product of most adventure programs are people who understand themselves more fully and relate to others more effectively" (p. 20).

The benefits of adventure programming can be applied to, among others, recreational, educational, developmental or therapeutic purposes. It is the clients' needs and the facilitation process that determine the program intent. An experience is considered therapeutic when the participant agrees that a change is needed, a plan to facilitate the change is made, and the activity is conducted properly to facilitate the change (Itin, 1995). Specifically, the therapeutic use of adventure "...involve placing participants in therapeutic groups and presenting them with a series of sequential and challenging experiences related to treatment" (Gass & McPhee, 1993, p. 312).

Traditional Substance Abuse Treatment Programs

Rotgers et al. (1996) have identified five of the most often-used approaches for substance abuse treatment: the 12-Step model; psychodynamic therapy; marital/family therapy; behavioral therapy; and motivational enhancement. Straussner (1993) cited group approaches as "the treatment of choice for many substance abusers" (p. 21); according to Coombs (1997), group approaches are "usually much more effective than individual therapy for addicts who are still using" (p. 188). In addition, the pharmacological approach, although restricted to physicians' and psychiatrists' use, deserves mention for its treatment potential, especially when associated with one of the psychosocial treatments mentioned above.

For the purpose of this study, traditional substance abuse treatment programs were defined as structured programs presenting one or more of the five therapeutic approaches mentioned above as part of the recovery plan to treat substance abuse clients. The term "traditional" also refers to the settings of these programs, which are mainly public and private hospitals, recovery centers and clinics with several years of operation history.

Integrating Adventure Programming with Traditional Substance Abuse Treatment Programs

The specific use of adventure programming in the treatment of substance abuse and dependence, resembles the general goals and outcomes of adventure programming: increase in participants' self-esteem/self-efficacy (Bertolami, 1981; Davis-Berman & Berman, 1989), social behavior (Hunter, 1987; Wichmann, 1991), cooperative and trust skills (Witman, 1987), and locus of control (Davis-Berman & Berman, 1994; Sakofs, 1991).

Malkin, Benshoff, and Toriello's (1996) extensive review of literature in therapeutic recreation interventions treating substance abuse provided support for using physical and leisure activities to enhance self-esteem, self-efficacy and coping skills and to improve levels of cooperation, trust, problem solving, and social interaction.

A study conducted by Gass and McPhee (1993) was an important attempt to trace a comprehensive view of the characteristics of adventure programs dealing with substance abusers. A survey was sent to 61 programs identified as utilizing mainly adventure programming with substance abuse populations. They found that participants in those programs share common goals, such as improved communication, enhanced social skills, gained responsibility, learning to trust others, and motivated lifestyle changes.

Nation, Benshoff, and Malkin (1996) conducted a survey research using a sample of substance abuse facilities drawn from the 1992 National Directory of Drug Abuse and Alcoholism Treatment and Prevention Programs. The study focused on the extent of overall types of recreational activities offered by substance abuse treatment facilities. Although 58% of the facilities surveyed reported some form of outdoor/adventure component on the treatment, no further investigation was made concerning the adventure variable.

Bennett, Cardone, and Jarczyk (1998) studied a group of adults participating in a 3-day adventure-based plus relapse prevention experience as part of their integrated residential recovery program. The experiential group was compared to a similar non-treatment group and was found to exhibit more efficacy in reducing the frequency of negative thoughts, alcohol craving and relapse up to 10 months after the program.

A study by Gillis, Willians, & Hollis (1992) demonstrated that substance-abusing adjudicated youth have poor capacity to develop insights from verbally-mediated interventions. The findings suggest the use of more experiential-based approaches, such as adventure programming, in drug related interventions.

Finally, Gillis & Simpson (1993) studied the efficacy of The Project Choices, a residential program serving adjudicated youth referred by the Georgia's juvenile court system who were substance abusers. Findings indicated increase in self-esteem, behavior rates (either peer or self perceived), and the low recidivism rate representing "...the ultimate behavioral proof of the efficacy of the program" (p. 342). During the treatment and follow-up phase, 99% of the random urine screen conducted showed no detection of chemicals.

Statement of the Problem

According to Gillis & Thomsen, (1996) the Adventure Programming field needed to gain more credibility among traditional treatments and, thus, expand the number of clients who can benefit from use of this approach to grow as a valuable and reliable supplementary treatment. Gillis (1995) cited the need of Adventure Programming to gain "more recognition and respect among traditional psychotherapy researchers and practitioners, and to the advancement and integration of this field with more traditional forms of psychotherapy" (p. 11). Gass and McPhee (1993) also stressed the need to "provide a greater acceptance of adventure [programming] as a valid form of substance-abuse treatment" (p. 320).

The purpose of this study was to determine:

- To what extent are traditional substance abuse treatments using Adventure Programming?
- What is the level of training and experience traditional substance abuse practitioners have in Adventure Programming?
- Are there constraints inhibiting traditional substance abuse treatment programs from incorporating Adventure Programming into their treatment milieu?

METHODOLOGY

This exploratory research used self-administered questionnaires to survey staff at hospitals, clinics and recovery centers treating substance abuse clients. Packets containing an introductory letter, a questionnaire, and prepaid envelope were sent to the program directors — traditional practitioners with various backgrounds (e.g., counselors, social workers, therapists, and psychologists).

The instrument for data gathering consisted of a self-administered questionnaire containing three sections. The first section asked general questions on program and staff characteristics. A contingency question at the end of the first section split respondents into Adventure Programming users and non-users. Section A inquired about users' goals, the outcomes of using Adventure Programming, the constraints of starting the program, and characteristics of staff facilitating Adventure Programming. In section B, non-users gave their impressions about the therapeutic benefits of Adventure Programming and their reasons for not using Adventure Programming.

The study population was comprised of 3,545 federal, state, local, and privately funded organizations and agencies providing drug abuse treatment services from the *Medical and Health Information Directory* (Pearce, 1999). A sample of 250 institutions was randomly selected using a weighted stratified random sampling technique and systematic random sampling within each state. The number of institutions for each state in the final sample was proportional to their number of institutions in the population.

The data gathering plan consisted of three phases. In Phase I, 250 survey packets containing the questionnaire, a cover letter and a prepaid envelope were mailed to substance abuse program directors. Two weeks after Phase I, a post card was sent reminding the contacts to fill out the survey. Lastly, a month after the first parcel, a second set of survey packets was mailed to program directors who had not sent the questionnaires back.

RESULTS

Subjects sent back 92 questionnaires, representing 37% return rate. Descriptive statistics (e.g., frequencies, percentages, means, and tables) were used to portray the findings. The majority of respondents were male (59%), had a counseling degree (42%) and held high positions (directors, coordinators, managers or supervisors) within their organizations. Almost two-thirds had more than 11 years of experience working with substance abusers. The substance abuse programs surveyed were predominantly outpatient counseling programs (38.3%) that have been serving substance abuse clients for over 16 years (82.7%). Forty-three percent of the programs treated 151-500 clients per year, and 22% treated over 500. The average age of the clients treated was 26-40 years old, and 34% of the clients stayed in the treatment program an average of one to three months. These demographics supported the study delimitation to survey traditional substance abuse programs and practitioners.

Forty percent of the programs had 1-5 treatment staff working in the substance abuse program, most of whom possessed a college degree and were counselors. Programs primarily used group therapy and self-helping meetings as their main therapeutic approaches. Over half formally evaluated outcomes such as length of stay in the program (67%) and recovery rate (62%), and most strongly perceived their treatment as successful. Alternative approaches such as recreation and meditation were used by 73% of the programs.

A contingency question divided respondents in two groups. One group ("non-users") was made up of the 62 programs that had never used Adventure Programming as part of their treatment; the second group ("AP users") was made up of 24 programs that had used Adventure Programming as a treatment modality.

Non-Users

Seventy percent of the programs that had never used Adventure Programming perceived its potential therapeutic benefits as appropriate or excellent, and the majority indicated they would like to acquire more information about Adventure Programming, preferably through professional journals. This finding reinforces the need for more publications on Adventure Programming research in professional journals in related fields (e.g., Gillis, 1995). Costs, third-payer reimbursement and lack of specialized staff were highlighted as the main perceived constraints inhibiting the use of Adventure Programming as part of their treatment programs.

AP Users

Twenty-four programs out of the total 86 acknowledged the use of Adventure Programming as part of their treatment for substance abuse. Respondents typically possessed more than six years of personal involvement with Adventure Programming. Their experience was obtained primarily through personal experiences, as only 39% had formal training in adventure programming techniques.

Respondents indicated that their programs had been using Adventure Programming for an average of 1-5 years. Although only 9% of the programs had formal evaluations, 96% of the respondents perceived that the use of Adventure Programming enhanced their programs. Several treatment goals were associated with the use of Adventure Programming, and two-thirds of the respondents agreed that those goals had been accomplished. Among the main constraints programs faced in implementing Adventure Programming as part of their treatment programs were costs, lack of specialized staff, and safety of clients.

Seventy percent of the programs used their own staff to run the Adventure Programming portion of substance abuse treatment. These staff members were mostly counselors with baccalaureate degrees. Although 57% of respondents reported having staff who were trained formally in Adventure Programming, almost half of those had less than one month of training. The majority of programs ran their Adventure Programming activities at their own sites, where they owned low and high ropes courses, camping and climbing equipment, and wilderness camp facilities. The choice of Adventure Programming activities conducted at those facilities were initiative and challenge games, low and high ropes courses, and camping.

The clients referred to Adventure Programming in these programs were predominantly teenagers and young adults. They participated once a week in the Adventure Programming activities, which averaged 1-4 hours in length. There was no distinction among clients referred to the Adventure Programming part of treatment in terms of substance treated. When asked about the treatment phase, however, none of the programs referred clients who were in detoxification or withdraw phases.

CONCLUSIONS

In answering the research questions listed above, the researcher concluded:

- Twenty-eight percent of the traditional substance abuse programs surveyed acknowledged the use of Adventure Programming in their treatment.
- Traditional Substance Abuse Treatment programs had been using Adventure Programming for 1-5 years on average, and 40% of the staff facilitating the Adventure Programming process had less than 1 month of training.
- Four constraints (costs, third-payer reimbursement, lack of specialized staff and access to adequate facilities) were identified as the main inhibitors of the use of Adventure Programming as part of substance abuse treatment.

In addition to those findings, a closer examination of the study results promoted paradoxical inferences. It could be argued that Adventure Programming was probably being used in substance abuse treatments, but not recognized as Adventure Programming. Strong evidence was the fact that over 70% of traditional substance abuse programs in the study used alternative approaches as part of their treatment; for almost half of those, recreation activities were their choice of alternative approach. These findings support Nation, et al's (1996) study, where 58% of the substance abuse programs surveyed acknowledged the use of some form of outdoor/adventure component in their treatment. Assuming that adventure is a recreational pursuit, the results of these two studies findings strongly suggest that substance abuse programs have been using some type of Adventure Programming activities, even though those activities may not have been called "Adventure Programming."

There were also positive therapeutic benefits of Adventure Programming extrapolated from the study results. Practically all programs surveyed that had used Adventure Programming perceived that it had enhanced their treatment. Even among the non-users group, 77% of traditional practitioners perceived Adventure Programming's therapeutic benefits as being appropriate or excellent. One of the programs surveyed attested: "...client response is overwhelmingly positive. Self-report indicates that this is the most significant aspect of clients' treatment." Through responses to the qualitative questions, respondents highlighted how Adventure Programming helped clients to develop group cohesion, group support and group trust; enhance self-esteem, self-awareness and self-reliance; improve communication and risk taking skills; and build pro-social behaviors.

The main therapeutic benefit of Adventure Programming in the treatment of substance abuse lay in its motivational aspects. Several statements from the qualitative portion of the study illustrate this benefit: "[Adventure Programming activities] engage clients.... Clients experience activities never before experienced.... [They] experience sober fun, work with others and challenge [their] addictive behavior.... [It] allows clients to get in touch with self and with their own abilities and talents.... [They gain] rapid self-esteem changes, [gain] confidence and learn that life can be exciting abstinent from mood altering chemicals". It is this sober excitement that Kunstler (1992) referred to as a responsible alternative for substance abusers to replace "the reward they get from their addiction" (p. 59). In her study she pointed out that people engage in the drug or alcohol addictive process as a coping mechanism to relieve boredom and anxiety and to make them feel good and in control. "A common result of being prescribed methadone is that it obviates the full time life style of many drug users. Time becomes empty and there is a great

temptation to return to previous ways" (Nigel, 1994, p. 76).

Kunstler expands this idea, stating that if the substance abusers find superior gratification from other activities, they "would be able to give up the rewards they get from their addiction" (1982, p. 59). She used Csikszentmihalyi's theory of flow as an alternative to the state of euphoria, self-esteem, stress management, and leisure satisfaction that might result from drug use. Flow theory is related to the enjoyment (Privette, 1983) and motivation (Mandigo & Thompson, 1998) one has toward doing something. As stated by Csikszentmihalyi, "Flow tends to occur when a person's skills are fully involved in overcoming a challenge that is just about manageable" (1997, p. 30). A person must perceive that s/he is in control and able to accomplish the task, but the task itself must constitute a challenge of some sort. If the challenge is too difficult and the skills are too low, participants may experience anxiety. If the experience is not challenging enough in relation to the person's skills, s/he might feel boredom. Participants experiencing flow report being so concentrated on the task "they are able to forget any unpleasant activities ...[and are able] to put away their ego (e.g., peer comparison) motives" (Mandigo & Thompson, 1998, p. 146). Kunstler (1982) concludes her study by suggesting recreational, challenge, and wilderness activities are appropriate replacements for the addictive process as the main source of this "flow" state of being.

IMPLICATIONS

The exploratory nature of this study generated a new question: Why do not more traditional substance abuse treatments use Adventure Programming as part of their programs? Using inductive reasoning, one can speculate that a lack of specialized staff and standard terminology weakened the development of the field. This rationale was supported by Gillis's (1992) previous study results, which found that the lack of clear understanding of Adventure Programming processes has restricted the use of Adventure Programming among traditional treatment providers.

In this study, the majority of traditional substance abuse programs using Adventure Programming had their own staff facilitating the activities, and 57% of those had formal training typically gained through Project Adventure, Outward Bound or college courses. The average length of the training (less than a month), however, wasn't appropriate to gain all skills needed to facilitate Adventure Programming. The validity of training was another issue, as one respondent reported: "...one of the counselors studied Recreation Therapy but is not certified...." Therefore, both Adventure Programming users and non-users pointed to a lack of specialized staff as a major inhibitor to using Adventure Programming processes for substance abuse treatment. This conclusion reflects one of the major trends in the field: the lack of an agreement on the competencies necessary to work as an Adventure Programming facilitator. The Therapeutic Adventure Professional Group (TAPG) of the Association for Experiential Education has been studying alternatives to address a standard curriculum to train facilitators interested in work with Adventure Programming, but no consensus has been reached so far.

In addition to lack of specialized staff, a lack of proper terminology has led to further misunderstanding of the Adventure Programming process, repressing interaction among traditional practitioners and adventure programmers. This lack of appropriate terminology was apparent in the research findings. For example, some respondents, although they had acknowledged the use of initiatives, games and even camping in their treatment, checked 'No' when asked if they had ever used Adventure Programming. In another qualitative question, respondents were asked to name the Adventure Programming portion of their program. The diversity in responses, from 'rope challenge course' to 'exercise therapy' to 'personal growth,' reinforced the lack of clear terminology.

Comparison of perceived constraints for non-users and users also demonstrated how the misinterpretation of the Adventure Programming process could inhibit its application. Non-users pointed to third-payer reimbursement as an inhibitor to the use of Adventure Programming. This constraint, however, was the one faced least

often by the Adventure Programming users. This finding suggests that when practitioners started to use Adventure Programming and, thus, to understand its processes better, they could properly define the treatment provided and better work out reimbursement with insurance companies.

A similar situation occurred with other constraints. For non-users, the safety of clients and the risk of activities were not important inhibitors; however, they were, respectively, ranked as the third and fourth greatest constraints for the Adventure Programming users' group. One can conclude that by gaining more experience and understanding of the Adventure Programming process, perceptions and constraints change notably.

In summary, the selection of traditional substance abuse treatments as the sample for this study constituted a novel approach to research in the field of adventure programming. The data generated represented a thorough examination of substance abuse programs and staff characteristics, as well the extent of Adventure Programming use in substance abuse treatment. The identification of the factors that inhibit the Adventure Programming implementation can aid future plans of practitioners interested in using this process. Study findings indicated a need to define clear and widely accepted terminology and staff competencies to support the expansion of Adventure Programming into traditional treatments. These standards have to be published in professional journals of traditional treatment associations, a recommendation already stressed by Gillis (1992): "...we need to focus on sharing what we do with traditional therapists..." (p. 10).

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