

Stress in Adventure-Recreation: The Identification of Types of Stressors and Their Roles in an Extended, Adventure-Based Expedition

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INTRODUCTION

The 1989 Mackenzie Expedition, designed to promote greater public awareness of Canada's rich and varied fur trade heritage, involved 25 students (13 males, 12 females) and two experienced leaders (all from Lakehead University, Ontario) canoeing 3,500 kilometres from Fort McMurray, Alberta to the Beaufort Sea over a period of ten weeks. In addition to its physically intensive nature, this endeavour was characterized by the psychological stresses typically associated with extended expeditions in potentially dangerous and isolated environments. This expedition group was further subjected to the pressure of regularly performing audience-interactive ceremonial events in communities along the expedition route.

The expedition members were identified by means of a rigorous selection process which reduced an original training group of 109 to the final 25 participants over a seven month period. The pre-expedition training involved both a "physical-preparedness" training programme and a "psychological-preparedness" programme, the latter of which clearly documented the stressful nature of the expedition, and provided direction for dealing with such concerns in the field.

While stress has usefully been categorized into two types (Barnard, 1968), namely, *distress* (positive, exciting and thrilling experiences) and *dys-stress* (unpleasant, even painful experiences), researchers agree that adventure-recreation settings necessarily contain elements of both, with dys-stress often being an unavoidable consequence of the search for eustress. Clearly, however, the extent to which an individual or group is able to deal with dys-stressful aspects may determine, in large part, the success or otherwise of the endeavour being undertaken.

In this light, as part of a broader project which will document the "psychological nature of the adventure-recreation experience", this particular study sought to identify: (a) the types of situational stressors which are salient to an extended, adventure-based expedition; (b) the stages of the expedition at which particular types of stressors are important in the generation of group stress levels; and (c) discrepancies between the expedition leader's perception of group stress levels and actual (self-report) group stress levels.

METHOD

To establish baseline measurements and to determine the relative importance of the various stressor items, the group was pre-tested prior to the expedition's departure. Testing in the field occurred at five crucial "deadline" dates interspersed over the timeframe of the expedition. On each test date, the trip-members completed Spielberger's (1983) State Trait Anxiety Inventory (STAI) as a measure of individual stress level and an extended version of Ewert's (1988) Situational Fear Inventory (SFI) containing 40 stressor items. In addition to this, the expedition leader completed a modified version of the STAI which measured his perception of the stress levels of the individual trip-participants at each stage of the expedition.

RESULTS

Employing Gray's (1987) fear stimuli taxonomy, the stressor items in the extended SFI were categorized into the four stressor types of: (a) intensity, (b) social interaction, (c) novelty, and (d)

specific situations. Internal consistency was demonstrated for each of the four stressor categories, with alpha indices ranging from 0.72 to 0.89 on the pre-test scores, and similar values being obtained on each of the five field tests. Multiple regression analyses, using composite scores on each of the four stress types as predictors and the group state anxiety score as the criterion, were then employed to identify which type(s) of stressor was most influential in the generation of group stress levels at specific stages of the expedition.

Pre-test analyses indicated a moderately high group stress level (mean = 51.17; sd = 3.70), and revealed that expedition members anticipated that social interaction and intensity would be important stressors, but that novelty and specific situation were of lesser concern to the group. During the course of the expedition, group stress levels showed a gradual decrease and levelling-off (see Table 1).

Table 1
Group Mean Stress Levels Over Time

Test Sequence	Mean	Std.Dev.
Test 1	47.00	5.59
Test 2	33.36	10.09
Test 3	37.17	11.60
Test 4	36.39	6.30
Test 5	37.65	15.43

Over the five field tests the four stressor types accounted for moderate-to-good proportions of the variance (Test 1:20%; Test 2: 46%; Test 3_: 38%; Test 4: 42%; Test 5: 24%). Regression equations, incorporating all of the stressor categories, were significant for Test 2 ($F_{4,18} = 3.85$; $p < 0.05$), Test 3 ($F_{4,18} = 2.80$; $p < 0.05$), and Test 4 ($F_{4,18} = 3.32$; $p < 0.05$). Interpretation of the regression beta values revealed a fairly clear pattern to the influence of the four stressor types in the generation of group stress. Results indicated that: (1) intensity was consistently a dominant stressor over the timeframe of the expedition; (2) novelty was also consistently important, but more so during the early stages of the expedition; (3) social interaction had an augmenting influence during the early and middle stages of the expedition, but had a limited influence in the latter stage of the expedition; and (4) as would be expected, specific situation stressors contributed an important influence only at those stages where situational danger was high and potential for misadventure clearly existed.

Finally, t-test procedures were employed to assess differences between the expedition leader's perception of group stress level and actual (self-report) group stress level during the timeframe of the expedition. Contrary to previous research findings, the leader's perceptions were consistently accurate, with only one test date showing a significant difference (Test 1: $t_{22} = 5.25$; $p < 0.01$).

DISCUSSION

The preliminary findings of this study indicated that:

1. certain stressors are inherent in the adventure-recreation settings, and that these stressors can be usefully classified into four types;

2. when considered in terms of the activity timeframe, these stressor types have roles of varying importance in the generation of group stress, but with intensity and, to a lesser extent, novelty and social interaction having consistently important roles;
3. while observing stress levels in others is a process fraught with limitations, familiarity with the psychological and physical capabilities of individual expedition members is conducive to accurate leader perceptions of group stress levels; and
4. a "psychological preparedness" training programme is an essential tool for a successful, adventure-recreation activity of an extended nature.

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