BRIEF REPORT

Keeping Your Cool: A Case Study of a Female Explorer's Solo North Pole Expedition

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Objective.—This study explored stress and coping experiences during a solo expedition to the North Pole using concurrent and retrospective methods.

Methods.—A 47-year-old female explorer, with 12 years of polar experience, completed a daily diary during the expedition. On return, 2 semistructured interviews were completed to identify the challenges and coping efforts perceived as being most pertinent during her expedition.

Results.—Inductive coding identified 4 broad stressors, including environmental conditions, personal challenges, supporting resources, and expedition progress.

Conclusions.—Findings highlight the importance of expedition preparation in establishing coping efficacy in managing the extreme demands placed upon polar explorers. Findings also evidence idiosyncrasies in the choice and application of coping strategies and, thus, highlight the need to avoid generalizations regarding coping outcomes.

Key words: polar exploration, coping strategies, emotion regulation, stressors

Introduction

EMOTIONAL AND COPING RESPONSES TO NORTH POLE EXPLORATION

Stress is a key consideration for researchers and practitioners responsible for planning and overseeing expeditions in extreme environments.^{1,2} Exploration in both the North³ and South⁴ Pole presents a significant physiological and psychological challenge in an environment containing many hazards, and to which humans are not naturally suited.⁵ Physical stressors are numerous, including 24-hour light, crevasses, blizzards, slippery ice, frozen lakes, open leads, polar bears (North Pole), altitude from sea level to 2900 m, extreme cold, and uneven terrain.⁵ However, Palinkas, Suedfeld, and Steel⁶ contend that it is psychosocial stressors that exert the greater influence in polar regions. For solo explorers, these include prolonged periods of isolation, restricted travel due to weather conditions, difficulties communicating with friends and family, boredom due to the lack of environmental stimulation, and absence of

roles and status that the explorers hold in nonpolar contexts.⁴ The combination of chronic stressors can have negative consequences for those not indigenous to the region or those insufficiently prepared.

Results of a previous case study involving a female explorer's 44-day expedition to the South Pole⁴ found significant fluctuations in mood and sleep during the expedition, and a dramatic reduction in bodyweight, muscle form, and power. The explorer had to cope not just with environmental difficulties but also with emotional challenges of feeling anxious, angry, and depressed. However, coping strategies for dealing with these situations were not examined.

Documenting how an explorer copes with the significant physiological and psychological challenges presented by polar exploration may enable other individuals planning such an expedition to anticipate these challenges and, thereby, enhance proactive and reactive coping. This study documents perceived stressors, appraisal of stressors, emotional responses, and coping efforts during a solo expedition to reach the North Pole. This article shares the experiences of a female solo explorer—a demographic underrepresented in the extant literature.

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Method

PARTICIPANT

The participant was a 47-year-old female with 12 years of polar experience, including 3 successful expeditions to the South Pole. The explorer monitored her own progress via a Global Positioning System, thus she was aware of time, distance covered, and altitude. Additionally, the explorer was in daily contact via radio with a support team agent.

ASSESSMENT AND ANALYSIS

While completing the North Pole expedition, the explorer completed an open-ended diary and a standardized mood diary⁴ each day before sleeping. These daily diary records were utilized to aid recall during the interviews, in particular when exploring large shifts in emotion experienced during the expedition, or when elaborating on critical incidents. Two post-expedition interviews were conducted; the first was completed within a month of her return, with a second to explore emergent themes taken from the initial interview in greater depth. Both interviews covered 5 themes of inquiry, including: 1) preparation for the expedition; 2) challenges encountered during the expedition; 3) appraisal of challenges; 4) coping strategies utilized in managing challenges; and 5) lessons learned from expedition experiences.

Data were analyzed using inductive coding. Inductive coding is a process whereby the researchers analyze the interview data to identify patterns, themes, and interrelationships. Quotes were extracted from the interviews to represent key findings.

Results

The explorer held the strong belief that thoroughness, in terms of preparation, was a significant contributor toward coping effectively with the demands faced during polar exploration. She sought out “all the most revered polar travelers . . . I wanted the facts and I wanted the real firsthand account.” The explorer noted that the aim of pre-expedition preparation was to develop physical and mental strength, establish realistic expectations of environmental conditions, and enhance personal response capabilities. When reflecting on the expedition itself, 4 broad stressors were identified: 1) environmental conditions; 2) personal challenges; 3) supporting resources; and 4) expedition progress. First, environmental conditions offered more challenges than anticipated. Her thermometer failed and so she had to rely on her perception of temperatures that ranged from as low as -55°C to relatively warm levels of -2°C . These extreme condi-

tions can have significant consequences in terms of potential frostbite and the effects of thawing on the stability of the ground. She encountered many kilometers of ice rubble and, more dangerously, larger and more frequent open water leads (breaks in ice, exposing water). Furthermore, while she had anticipated pressure ridges (surfaces pushed up in ice), there were a greater number than expected. The explorer felt that the conditions that she endured throughout the expedition made progress especially challenging. “It was the rubble, rubble, rubble, some of it massive and nobody seemed to understand, even [identifies renowned polar explorers]; they all said at this stage you shouldn’t be leaving your sledge and going ahead and scouting for a route. I’m talking about pressure ridges that were about 30, 40 feet, I’m talking about huge amounts of rubble, no one got it.”

Her strategy for overcoming challenges such as pressure ridges was to see each challenge in isolation, so as to minimize the possibility of becoming overwhelmed. She would say to herself, “one at a time,” and used this phrase to rationalize the difficulty of the challenge. The explorer also identified a number of daily routines that she perceived as contributing to the management of environmental conditions and survival. These included routines for packing the tent, crossing leads, responding to ice packing, putting up the tent, preparing tea, treating her frostbitten foot, and so on.

The second broad stressor was personal challenges. These include reactions to pain, and an awareness of—and managing—fear. She noted, “What really belted me very early on in that first week was getting frostbite on my toes.” Her foot became gangrenous, and she disclosed feeling squeamish when treating it. In order to overcome these feelings, she developed an unusual but effective coping strategy. “I pretended it wasn’t my foot, but I was very fond of that foot so I always treated it with great affection and care, and that helped me disembody myself from the nastiness.” The explorer perceived “all sorts of pain challenges; the frostbite was a very different sort of pain, I’ve never known anything like it; it was stratospheric, searing, sometimes I worried about blacking out with the pain.” She engaged various strategies to manage pain that included instructional self-talk, venting, breathing control, and reappraising the pain, “look at it, not avoid it, and I tried to look at it with curiosity.”

The explorer eloquently described an awareness of different types of fear experienced during the expedition. “There’s the Hitchcock fear, the psychological fear of the unknown. . . then there is the Harrison Ford fear when there is action happening all around you. . . and then there’s the sort of fear that I hope people don’t ever have to experience in their life when you really think you’re going to die and you have time to think about it because

there's nothing left to do." In terms of coping with fear, the explorer felt, "you have to believe in yourself and your survival"; she also noted a need to accept things you cannot control.

The third broad stressor identified was her perception of supporting resources. A relatively late change in support team personnel—with the introduction of someone with whom she had not previously worked— influenced her perception of team dynamics. This, along with equipment failure, presented ongoing challenges. For example, she indicated that "research I asked him to do on my behalf . . . he wasn't doing, so I was leaning on the outside more . . . 2 re-supplies that I did have weren't correctly packed; one of the biggest disasters was the medicine wasn't packed so I didn't have any fresh bandaging or antibiotics or painkillers. . . I was feeling vulnerable in the sense I was much more solo than I'd anticipated and I didn't like it." The explorer coped with this sense of vulnerability by pursuing alternative sources of emotional and practical support. For example, she contacted a renowned polar explorer she personally respected on a number of occasions, and also talked to her husband "several times, which I've never done on an expedition before because I didn't want that emotional tug back all that time. We had to talk practicalities because of the support team problems arising." She found the experience and advice of the polar explorer to be particularly helpful in facing what she described as her "psychological slip." "It was pointed out . . . 'you know you must be careful not to slip into a victim mentality.' Having been there himself, he recognized a lot of the symptoms I was getting; we both had a voice in our head that would go 'why me,' 'why me,' you know, and you remembered all the pictures of more recent expeditions and they didn't seem to have it like you'd had it."

A further coping strategy was the use of what the explorer termed a "mission-critical piece of equipment." She carried with her at all times a prayer that her mother had asked her to take with her on previous expeditions. This was handwritten by her brother and, on the other side, there was a picture drawn by her son. The purpose of this prayer as used by the explorer was protection; "during my first Antarctic expedition, when there was very poor team dynamics, it was to protect me against harsh words, and on this expedition it was protect me from death." She noted that, at times when she feared she might die, the prayer and picture "gave me a sense of nonworldly priority, that there were other things that continued after me, that love mattered more, that I would be remembered."

A fourth broad stressor noted by the explorer was expedition progress. The explorer's goal was to reach the

geographical point of the North Pole, with 75 days established as the maximum timeframe for attainment. However, weather conditions—along with environmental and health conditions—cumulatively increased the difficulty of this expedition goal. Three-quarters of the way into the expedition, the explorer experienced what she termed a "psychological slip," whereby she fell to her knees and cried "why, why, why." She was able to articulate the rationale behind this venting, "I was lashing out blame at the strange forces, the benign forces that wanted to do me down; the further it got into the expedition, it was more a question of 'well, haven't I suffered enough, haven't I proven myself?' you know." In terms of the impact of emotive outbursts, she perceived that "big serious ones, particularly my breakdown point, were healing and good, it was like being rinsed, you know; but the ones that were becoming habitual were becoming dangerously so, and I always used to say it's very dangerous to let self pity get its foot in through the door on these expeditions and I think I was actually doing precisely that, you know 'poor me.'" To manage emotions, the explorer sought emotional support and reassurance from polar explorers as suggested in theme-supporting resources.

During the latter stages of the expedition, she notes that "by 75 days, when you've been relentlessly assaulted by the arctic 24/7, you feel like you've been there for an infinity; knowing that I was so close was a funny sort of kaleidoscope of being so geographically close and yet you knew physically you were so far away." The explorer recalled that "when I got past the 75th day, then my heart definitely felt heavier because I became obsessed by the idea that [her son] was beginning to think that I was breaking a promise and that I wasn't coming back, and that haunted me, and I saw that in my log—that I began writing much more about [son] and thoughts of him."

After 84 days and 525 km, the explorer was pulled from the ice 89 nautical miles short of the North Pole. This marked the end of her attempt to become the first woman to reach the North Pole solo.

Discussion

Results indicated that preparation for the expedition was characterized by examples of proactive coping efforts.⁷ At least 5 ways in which she coped proactively are evidenced from the data: 1) she identified potential stressors; 2) she completed initial appraisals of potential stressors; 3) she generated resources (including physical, informational, and social resources) to prevent or minimize the impact of potential stressors; 4) she established and tested preliminary coping efforts; and, 5) she elicited

and used feedback concerning the success of these efforts. As a consequence of these efforts, the explorer set off for the expedition confident that all necessary preparations had been made. We suggest that these robust preparations enabled the explorer to “believe in yourself and your survival” when faced with chronic (eg, frostbite, adverse weather conditions) or acute (eg, ice cracking, crossing leads) situations that were potentially life-threatening.

During the expedition itself, a combination of anticipated, unexpected, and novel challenges were encountered. The way in which the explorer adapted to these challenges is consistent with theoretical relationships proposed in the Cognitive-Motivational-Relational Theory.⁸ This theory conceives the coping process as comprising causal antecedents (person and situational variables such as fatigue levels and weather conditions), mediating processes (cognitive appraisals of the situational demands and ability to cope with these), and effects. Data indicates that the explorer’s emotions and cognitions (effects) tended to change as a result of encounters with the environment (antecedents), and the meaning derived (mediating processes) from the underlying context.⁹ For example, this was apparent when the explorer experienced frostbite (which she had not previously experienced) within the first week of the expedition. The explorer concurrently encountered unprecedented temperature shifts and quantities of ice rubble greater than had previously been encountered either personally or by other explorers. These stressors all presented causal antecedents managed by a combination of problem solving, reappraisal, and support seeking. However, as the expedition progressed, these chronic challenges began to test the explorer’s coping resilience and produced emotional disturbances (effects).

A sense of resource loss was also central to the explorer’s stress experience. The Conservation of Resource Theory¹⁰ suggests that stress is a reaction to an environment in which there is the threat of a loss of resources, an actual loss in resources, or lack of an expected gain in resources. The influence of resources was evidenced in several ways. Establishing a goal of completing the solo expedition within 60 to 75 days was informed by a belief that she had sufficient personal resources and the expedition was well organized. However, as the expedition unfolded, she progressed at a rate slower than expected and, therefore, the likelihood of attaining her goal decreased. Her personal resources were depleted by painful frostbite, increased fatigue from having to traverse ice rubble and pressure ridges, and performing in significantly colder conditions than expected. Resource depletion was exacerbated when resupplies lacked essential medical kit, and information provided by the support

team was insufficient. As resource threats and losses continued, their impact on goal attainment became increasingly apparent to the explorer. It is likely that a combination of unfavorable task conditions, failure-inducing situational cues, and resource loss provoked feelings of emotional distress⁹ and contributed to the “psychological slip” that occurred three quarters of the way into the expedition. It was at this point that the explorer sought out alternative resources by contacting a fellow explorer and her husband to seek “moral sustenance” and “practical support.”

Perceiving a sense of control over events may allow an individual to believe she or he holds sufficient resources to cope successfully. Conversely, a lack of perceived control can render the individual vulnerable to distress.¹¹ The explorer illustrates this concept, noting that, during the expedition “I discovered that it’s very important on the ice to know that nature is completely out of your control, but you have complete control over your environment and what is happening.” The explorer’s use of routines offered a strategy that maintained a sense of control. To cope with stressors beyond her control, such as the environmental conditions, she used religion. This differential use of coping supports the goodness of fit hypothesis as suggested by Conway and Terry.¹² The fit in the present study concerns using active, problem-focused forms of coping in situations where the explorer perceived control, and passive or emotion-focused coping mechanisms in situations where the explorer perceived a lack of control.¹²

The explorer frequently noted the use of social support in helping her cope. Given the limited availability of social support in polar exploration, it is important that any support offered meets the needs of the recipient. She perceived some of the support provided as inappropriately matching her needs, especially where it mirrored her mood (particularly low/unpleasant mood) and/or failed to provide critical informational support. For example, when experiencing and/or sharing low or unpleasant moods, she found it more challenging to alter or reduce them when they were also mirrored/evidenced among her support structure. In such instances, she desired a pleasant/optimistic mood from her support structure. This highlights the critical role social support can play in maintaining, or indeed undermining, a positive outlook during polar exploration.

The explorer also used a positive inner dialogue as an effective coping strategy. When describing her inner dialogue, the explorer noted that instructional self-talk was used to “bellow out instructions very clearly,” while motivational self-talk was used to focus attention and effort onto those tasks that would facilitate goal attainment. For example, conquering pressure ridges by saying

“one at a time” enabled her to remain focused on—and confident in meeting—the ultimate goal of reaching the geographical point of the North Pole.

The personal and environmental stressors identified in the present study are similar to those previously reported.^{5,13–15} Environmental challenges included pressure ridges, ice rubble, and extreme temperatures, while personal stressors include feeling pain, fatigue, and isolation. As with previous research examining polar exploration, the explorer also reported instances of performance doubts or negative mood resulting from a failure to meet personal expectations.¹³ However, the coping responses of expeditionists are less commonly reported within the published literature,¹⁴ therein identifying the utility of this article for those planning or supporting polar exploration. The present article offers an honest and detailed account of coping with the challenges presented by polar exploration.

Conclusions

We found that this experienced polar explorer demonstrated the use of a range of coping strategies across different situations rather than the rigid application of a few coping strategies. This data may be useful for researchers interested in investigating coping theory, and for individuals and support personnel planning solo or small group expeditions.

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