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Surviving the 2015 Mount Everest disaster: A phenomenological exploration into lived experience and the role of mental toughness

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Abstract

Objectives The 2015 Nepal earthquake and subsequent avalanche at Mount Everest Base Camp is the deadliest mountaineering disaster to date. This study is novel in exploring the lived experiences of survivors and the role of mental toughness in their psychological responses to the disaster. **Design** Phenomenological study. **Method** Ten mountaineers, who were on expeditions during the earthquake, participated in phenomenological interviews. Data were analysed inductively and thematically, while strategies to enhance trustworthiness were also employed. **Results** Seven dimensions emerged from the data, which captured climbers' psychological responses to the disaster, ranging from the moments the earthquake hit to reflections on the disaster after returning home. Contrasting emotional responses were described, and suggested to depend on experience and mental toughness. Negative emotional and behavioural responses were reported in the aftermath. Some climbers reported post-traumatic stress, but also a strong desire to return to Mount Everest and continue mountaineering. **Conclusions** These findings provide detailed insights into the lived experiences of climbers who survived the 2015 Nepal earthquake and Base Camp avalanche. Findings also shed light on the role of mental toughness in coping with and responding to a major natural disaster.

Keywords

mental, role, toughness, experience, surviving, lived, into, exploration, phenomenological, disaster, everest, mount, 2015

Disciplines

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1 Running Head: MENTAL TOUGHNESS IN SURVIVING THE 2015 EVEREST DISASTER

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7 **Surviving the 2015 Mount Everest Disaster: A Phenomenological Exploration into**

8 **Lived Experience and the Role of Mental Toughness**

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1 **Abstract**

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3 Camp is the deadliest mountaineering disaster to date. This study is novel in exploring the
4 lived experiences of survivors and the role of mental toughness in their psychological
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11 responses to the disaster, ranging from the moments the earthquake hit to reflections on the
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14 responses were reported in the aftermath. Some climbers reported post-traumatic stress, but
15 also a strong desire to return to Mount Everest and continue mountaineering.

16 **Conclusions:** These findings provide detailed insights into the lived experiences of climbers
17 who survived the 2015 Nepal earthquake and Base Camp avalanche. Findings also shed light
18 on the role of mental toughness in coping with and responding to a major natural disaster.

19

20 **Keywords:** climbing; coping; emotion; extreme environments; mental health; natural disaster

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1 we focused on the psychological and emotional challenges involved for these climbers, and
2 the role of mental toughness in coping with this disaster. Such catastrophic events pose
3 significant short-term and long-term emotional challenges and psychological consequences
4 (Garcia, 2011). Indeed, survivors at Base Camp remained at an altitude of 5300-5400m, a
5 height which impacts on physical and cognitive functioning (e.g., Bahrke & Shukitt-Hale,
6 1993). Furthermore, these individuals were in an extremely isolated location with limited
7 supplies (including medical) or access in and out of the area. Therefore, this event presents a
8 significant but, as yet, under-researched context in which to understand climbers'
9 psychological and emotional responses.

10 **Mental Toughness**

11 Several motivational and cognitive mechanisms can contribute to different, and
12 sometimes opposite, psychological outcomes (e.g., meaning-construction or distress) after
13 trauma and loss (Park, 2010). For example, Garcia, Cova, Rincon, and Vazquez (2015) found
14 that rumination processes (e.g., brooding and cognitive strategies) mediated both
15 posttraumatic symptoms (PTS) and posttraumatic growth (PTG) following a natural disaster.
16 In particular brooding (i.e., passive focus on causes and consequences, recurrent
17 comparisons, and dwelling on obstacles) has been found associated with negative emotions
18 and maladaptive outcomes such as PTS, while more active strategies concerned with
19 deliberately and consciously coping appear related to adaptive outcomes and PTG (Garcia et
20 al., 2015). Similarly, personality has been found to influence behaviours and psychological
21 outcomes – especially in extreme environments such as high-altitude mountaineering (e.g.,
22 regarding risk-taking; Barlow et al., 2015; Monasterio, Alamri, & Mei-Dan, 2014). Mental
23 toughness (MT) is reported to have particular importance for high-altitude mountaineers
24 (Author 1 et al., under review; Fawcett, 2011). Researchers generally agree MT is a multi-
25 dimensional construct comprising values, attitudes, emotions and cognitions that enable

1 people to successfully pursue their goals and perform consistently well regardless of
2 obstacles or adversity (Coulter, Mallett, & Gucciardi, 2010; Hardy, Bell, & Beattie, 2014).
3 Researchers in sport and exercise have found mentally-tough individuals to be disciplined,
4 persistent, confident, and able to demonstrate resilience by moving on quickly (without
5 dwelling on negative experiences), and refocusing on goals following setbacks (Cook, Crust,
6 Littlewood, Nesti, & Allen-Collinson, 2014; Crust et al., 2014). Most researchers agree that
7 MT is a relatively stable disposition / trait construct that is important in coping with stress
8 and is unlikely to change quickly over time (Hardy et al., 2014).

9 Two previous studies used a phenomenological approach to examine MT in
10 mountaineering. Fawcett (2011) provided a case example from a larger sample of interviews
11 with elite high-altitude mountaineers and explorers, which emphasised the contextual nature
12 of MT. Safety and survival were found to be crucial issues and the participant reported
13 keeping emotions in check, control of ego, self-knowledge, and the ability to make correct
14 decisions under-pressure as indicative of MT. Generally, a realistic perspective was adopted,
15 involving perseverance and suffering, calculated risk-taking, but also the acceptance that
16 sometimes conditions were too dangerous to continue. Author 1 et al. interviewed 14
17 mountaineers including guides, expedition leaders, and doctors to understand the role of MT
18 in decision-making – particularly around the decision to persevere or abort summit attempts.
19 Participants emphasised the importance of MT in mountaineering, and described rational,
20 flexible, and vigilant decision-making. In contrast to much MT literature, these mountaineers
21 accepted limits, demonstrated restraint, and sacrificed personal goals to aid others, while also
22 reporting costly perseverance as some mountaineers were described as “too tough”, over-
23 competitive, goal-obsessed, and biased decision-makers.

24 While the measurement of MT has been the subject of intense debate (cf. Gucciardi,
25 Hanton, & Mallett, 2012; Perry, Clough, Crust, Earle, & Nicholls, 2013) several studies have

1 used questionnaire-based approaches to demonstrate the associated behavioural correlates.
2 These correlates have generally consisted of performance on physical tasks, with evidence
3 supporting MT relating to pain endurance (Crust & Clough, 2005), cross-country race times
4 (Mahoney, Gucciardi, Ntoumanis, & Mallett, 2014) and physical training tasks (Gucciardi,
5 Peeling, Ducker, & Dawson, 2016). These performance variables essentially measure
6 perseverance and the ability to persist despite the presence of pain or fatigue. Whilst these
7 studies support conceptual foundations by highlighting meaningful correlations (Mahoney et
8 al., 2014), most definitions of MT emphasise the ability to cope with psychological as well as
9 physical stressors. Outside of sport, findings have supported the conceptualisation of MT as a
10 positive psychological construct, with significant and positive relations reported with
11 psychological wellbeing (Stamp, Crust, Swann, Perry, Clough & Marchant, 2015), most
12 likely attributable to effective stress management. Furthermore, numerous studies have
13 examined the relationship between MT and coping. Using questionnaire-based research,
14 Nicholls, Polman, Levy, and Backhouse (2008) found higher MT to be associated with
15 greater use of approach / problem focused coping, and less use of avoidance / emotional
16 coping. Follow-up research found MT correlated with more effective coping (Nicholls, Levy,
17 Polman, & Crust, 2011). Qualitative research (Crust, Nesti, & Bond, 2010; Crust et al., 2014)
18 found maintaining perspective / sense of reality, seeking support, compartmentalising, and
19 refocusing quickly after setbacks were indicative of greater mental toughness.

20 While much extant literature has examined MT within traditional team sport settings
21 (Cook et al., 2014; Hardy et al., 2014; Gucciardi, Gordon, & Dimmock, 2008) this potentially
22 provides too narrow a view of the construct. Similarly, past researchers have been critical of
23 MT literature that focused mainly upon reactions to adversity, and the ability to cope and
24 recover following setbacks. Gucciardi et al. (2008) emphasised that MT is also important in
25 positively construed situations but is best understood “in the context of those conditions in

1 which mental toughness is required” (p. 262). Nevertheless, while adversity in team sports
2 might represent injury, de-selection, or performance slumps, in high-altitude mountaineering
3 adversity can involve critical survival situations involving life or death decision-making. The
4 extreme adversity faced during the earthquake and subsequent avalanche provides an ideal
5 and unique context to understand the decision-making, behavioural responses, cognitions,
6 and emotions perceived to underpin MT.

7 In seeking to understand the characteristics and development of MT, numerous
8 qualitative studies (see Anthony, Gucciardi, & Gordon, 2016) have interviewed elite athletes,
9 coaches, and/or parents. Past work has generally adopted a “career-based” semi-structured
10 interview that required elite participants to reflect on experiences which have occurred over
11 several years (i.e., throughout their career; see Swann, Keegan, Crust & Piggott, 2016).
12 Whilst this approach has added to knowledge (e.g., general behaviours, critical incidents etc),
13 it can represent a selective process where information conforming to the ideal mentally-tough
14 athlete is over-emphasised. This argument appears central to Andersen (2011) labelling MT
15 as an idealised, selective, and fantasy construct detached from realistic accounts of human
16 experience. As such, some literature on MT appears to represent a super-human ideal
17 inconsistent with even the toughest and most successful athletes who, like all other athletes,
18 are susceptible to mental lapses or moments of weakness.

19 First, this study aimed to understand high-altitude mountaineers’ *lived-experiences* of
20 surviving the 2015 Nepal earthquake and subsequent avalanche at Mount Everest Base Camp
21 - an under-researched yet highly significant and psychologically challenging event. The
22 second aim was to understand the role of MT in coping with this disaster. We therefore
23 required rich, descriptive accounts based upon real rather than idealised experiences. While
24 high-altitude mountaineers frequently experience avalanches, the nature of the earthquake,
25 the devastation, and aftermath, provided unique and extreme challenges that enabled more

1 and less mentally-tough behaviours and responses to be examined. Understanding the
2 experiences of these mountaineers might have implications for other individuals who
3 experience traumatic sporting or environmental catastrophes.

4 **Method**

5 **Participants**

6 Participants were 10 high-altitude mountaineers (nine male, one female) who
7 experienced the 2015 Nepal earthquake and subsequent avalanche at Mount Everest Base
8 Camp. Nine climbers were on Everest at the time of the disaster (at Base Camp, Camp One or
9 Camp Two) while one was on a nearby 8000m mountain (Makalu). The average age of the
10 sample was 42.3 years ($SD = 12.6$). The climbers were from England ($n = 3$), USA ($n = 2$),
11 New Zealand ($n = 1$), Mexico ($n = 1$), Wales ($n = 1$) Republic of Ireland ($n = 1$), and Iran ($n =$
12 1), and included expedition leaders/operators and a team-doctor. Four participants had also
13 been on Everest during the 2014 avalanche. On average, these participants had been on 10.8
14 expeditions to 8000m mountains (range = 2 – 46; $SD = 12.98$), and had summited 5.2 8000m
15 mountains (range = 0 – 14; $SD = 4.89$).

16 **The Phenomenological Interview**

17 Since this study sought to understand climbers' experiences of surviving the 2015
18 Everest earthquake and avalanche, and perceptions of the role of MT in coping with the
19 disaster, we employed phenomenological interviews. Phenomenology was selected as an
20 appropriate methodological approach for enabling the collection of detailed, descriptive
21 information exploring the *lived experiences* of these high-altitude climbers. Drawing on a
22 form of empirical phenomenology (Allen-Collinson, 2009, 2011), as applicable to
23 psychological and sociological research, interviews were designed to elicit rich, in-depth
24 accounts of lived-experiences. While many qualitative approaches seek to elucidate why/how
25 something happens, descriptive empirical phenomenology is primarily concerned with

1 investigating *what* participants report as being experienced, that is *what* appears to conscious
2 mind. This form of empirical phenomenology differs from the original “purer” forms of
3 philosophical phenomenology, in that it applies phenomenological principles to the collection
4 and analysis of empirical data, but acknowledges the impossibility of the researcher being
5 able to achieve “pure” transcendental reflection by engaging in the full phenomenological
6 *epochē* (sometimes termed phenomenological “bracketing”) as required by, for example,
7 Husserlian descriptive phenomenology (see Author 3, 2011 for an extended discussion).

8 Phenomenological interviews are characteristically open, relatively unstructured, and
9 “naturalistic”, with participants often construed as co-researchers (Brinkman & Kvale, 2005)
10 and co-producers of the research (Allen-Collinson, 2009). Unconstrained by a fixed interview
11 schedule, there is freedom to explore emerging concepts, and interviewees to take the lead, as
12 appropriate. Phenomenological interviews are not designed to “test”, confirm or reject
13 theories or conceptualisations (Bevan, 2014; Høffding & Martiny, 2015), therefore, but rather
14 the interviewer attempts to suspend her/his prior assumptions and presuppositions about the
15 phenomenon under study, to bracket “the natural attitude” as part of the phenomenological
16 *epochē* (Author 3, 2011) and to return “to the things themselves” in Husserl’s (1989) famous
17 dictum. As Gallagher & Zahavi (2008) argue, phenomenology aims to disclose structures of
18 consciousness that are intersubjectively accessible. Phenomenological interviews, we thus
19 emphasise, do not provide a transparent window to some inner private-self (Smith & Sparkes,
20 2005) but generate intersubjectively “data” that are co-produced by interviewee/interviewer
21 in the interactional encounter. These data are then subjected to phenomenologically-sensitive
22 analysis, as we describe below.

23 The first and second authors conducted interviews lasting between 49 and 118
24 minutes ($M = 76$ minutes; $SD = 19.46$). SKYPE™ and telephone interviews were used for
25 most as participants spanned a wide-range of geographic locations, although one interview

1 was conducted face-to-face. To minimize differences between interview methods a deliberate
2 process was employed to develop rapport in all cases. This included introducing the project,
3 scheduling the interview to maximize convenience, and making the participant feel at ease by
4 commencing with background information such as major career highlights and motives for
5 climbing. A flexible interview guide was used, and questions included: “are you familiar with
6 the term “mental toughness”?”; “can you provide an example of mental toughness in
7 mountaineering?”; “what role did mental toughness play in your response to the earthquake
8 and avalanche?”; and “what differences did you notice in how other climbers coped with the
9 disaster?”. Participants were asked to recall the moments the earthquake and avalanche hit;
10 the remainder of their time on the mountain; and reflections on leaving the mountain and
11 returning home. Due to the sensitive nature of the topic, participants were reminded that they
12 were under no obligation to answer any of the questions, and could withdraw at any point
13 (although none did). Probes such as “Can you tell me a little more about that?” were utilised
14 to provide elaboration and check initial understanding.

15 **Procedure**

16 Ethical approval was obtained from a University Research Ethics Committee.
17 Initially, purposive sampling (Patton, 2002) was used to recruit mountaineers who had
18 participated in a previous study. These participants were contacted via email and asked
19 whether they would be willing to be interviewed. Then a process of “snowball” sampling
20 (Patton, 2002) was utilised to recruit further mountaineers who had experienced the disaster
21 and were also willing to be interviewed. Specifically, these participants were approached via
22 email after their contact details were provided by other participants (who, in most cases, had
23 already spoken to them and introduced the study). Interviews were recorded using a digital
24 data-recorder and transcribed verbatim by a professional transcription company.

25 **Data Analysis**

1 Employing an iterative process of data analysis, research-team members
2 independently analysed transcripts to identify raw themes. Adopting elements of Giorgi's
3 (1985) guidelines for psychological-phenomenological research, the following process was
4 used: engagement with the phenomenological *epochē* (efforts to bracket preconceptions
5 regarding mental toughness; see *Trustworthiness*); initial impressionistic readings of
6 transcripts; in-depth re-reading to engage in data-immersion, and identify themes and sub-
7 themes (see Allen-Collinson, 2011). Separate initial discovery sheets of key words, concepts
8 and themes were generated to aid preliminary classification. Subsequently, comparisons were
9 made between these independent analyses to identify salient higher-order themes and general
10 dimensions. Each transcript was analysed to question the classification of meaning segments
11 into established theme categories. We thus sought to enhance the accuracy of the coding and
12 inductive analysis. In terms of judgment criteria, we adhere to a relativist perspective rather
13 than a criteriologist approach (Sparkes & Smith, 2013), in seeking to ensure the research
14 findings are well-grounded in an understanding of participants' lived experiences. Our initial
15 interpretations were discussed with participants in an effort to ensure congruence and
16 resonance with their lived experiences.

17 **Trustworthiness**

18 Procedures were undertaken to enhance the authenticity and trustworthiness of data
19 analysis (Sparkes & Smith, 2013). In engaging in the phenomenological *epochē*, researchers
20 make their best efforts temporarily to bracket or set aside tacit assumptions and
21 presuppositions regarding what is claimed to be "known" about a phenomenon, or at least to
22 identify and critique these assumptions (Allen-Collinson, 2011). A bracketing interview was
23 therefore conducted between two of the researchers to identify and challenge any potential
24 interviewer bias. All authors had read auto-biographical accounts of mountaineering disasters
25 and / or had undertaken previous research with mountaineers. Thus it was important to avoid

1 personal assumptions about what the experience would be like, and to obtain rich descriptive
2 accounts of the event and responses to it. Equally, all authors have previously studied MT
3 and have assimilated preconceptions about the construct that could have influenced
4 participant / researcher interactions. For example, MT research has generally identified tough
5 individuals appraise adverse situations as challenging rather than threatening so it was
6 important to bracket such assumptions. Then, after four interviews were complete, the first
7 two authors listened to a recording to engage in self-reflection, critique, and to further aid the
8 process of bracketing. This process led to greater agreement about areas to probe in
9 subsequent interviews – the content of which were reflected upon in weekly meetings during
10 data collection.

11 As part of the analysis and interpretative process, follow-up interviews were conducted
12 with two participants ($M = 37$ min.) to develop critical dialogue about results. The two
13 participants were selected based on access, that is, they both expressed interest in the topic
14 and were open to further discussion. The role of these follow-up interviews was to encourage
15 reflection upon, and exploration of, alternative explanations and interpretations as they
16 emerged in relation to the data (e.g., Smith & Sparkes, 2009). This process took place by
17 reflecting on key aspects of the participant's initial interview, and asking for feedback about
18 preliminary analysis. In addition, participants were provided with a draft of the manuscript
19 via email, and encouraged to question the team's interpretations and offer alternative
20 accounts. They did not report any issues or request any changes to the analysis or manuscript.
21 Indeed, they provided positive feedback about the extent to which the analysis 'captured'
22 their experiences, and this process helped generate confidence in data interpretation.

23 **Results**

24 The analysis revealed seven general dimensions which are presented in two sections
25 below. The first section addresses the climbers' lived experiences of the disaster (see Table

1 1), and the second section presents their perceptions of the role of MT in coping with the
2 events (see Table 2).

3 **Experiencing the 2015 Everest Disaster**

4 This section involved three general dimensions which represented the participants'
5 experiences on the day of the 2015 Everest disaster. These dimensions are discussed below in
6 terms of key themes with direct quotes to illustrate (see Table 1).

7 ***INSERT TABLE 1 NEAR HERE***

8 **Experiencing the earthquake.** The climbers described their initial experience of the
9 disaster in two themes: *recognising the earthquake*, and immediate *fear and helplessness*.

10 ***Recognising the earthquake.*** These climbers described the moments when the
11 earthquake hit, and initial confusion about what was happening: "I felt that something was
12 wrong. I didn't know if it was an avalanche or a rock fall. I never thought about [an]
13 earthquake...It was long, for two or three minutes, a very long time" (Participant 3). Another
14 described being on the edge of Base Camp when:

15 [We] started feeling the ground rumbling...And we thought: "That's a big
16 avalanche"...The whole ground under us is just moving from side to side...And we
17 realised, "Shit, this is an earthquake."...And then from behind us, the Pumori
18 avalanched...the whole top of the mountain fell off...and started a shockwave...We
19 turned around and we're seeing this white wall, as high as you can see and as wide as
20 you can see, just coming at us (Participant 1).

21 Higher on the mountain, the events unfolded differently, as Participant 2 described:

22 I had gone to Camp Two that morning, the earthquake was around noon and even
23 before I felt the earthquake there were many avalanches triggered around us coming
24 at once down all those mountains...I've never seen so many avalanches come down at
25 the same time but then started feeling the ice shaking underneath us, very violent[ly].

1 ***Fear and helplessness.*** The climbers reported immediate feelings of fear, shock, and
2 helplessness when the Pumori avalanche hit:

3 All of us thought we were gone, without a doubt...A most sickening feeling of fear I
4 have ever, ever had. It's just like the pit for your stomach...It's like nothing I have
5 ever experienced. But there's a sense of no control, there's nowhere to run, nowhere
6 to hide but you can hear it coming towards you in this big open valley (Participant 4)

7 Participant 1 described similar feelings as the avalanche approached:

8 When it first happened...there was more confusion than concern...Confusion
9 [because] you don't know what the hell is going on...When we turned around and
10 saw what was coming for us, blind fear"...I remember feeling, "We're in trouble
11 here"...And thinking..."What do we do?"...You're looking at this white wall
12 and...your mind thinks, "Do something," and you've got two seconds...So we ran
13 inside, got under the table...and we're sitting in the tent, waiting for it to hit us,
14 thinking, "Right, how do you brace yourself for this? What do we do here?"

15 ***Reorienting, reorganising, and recovery.*** After the initial impact of the earthquake
16 and subsequent avalanche, the climbers described the process of recovery which occurred at
17 Base Camp. Specifically, this theme captured processes involved in *initiating rescue and*
18 *recovery*, which included *leadership behaviours*.

19 ***Initiating rescue and recovery.*** After the earthquake and avalanches stopped, the
20 climbers described processes of reorientation and reorganisation – both at Base Camp and for
21 those climbing down from higher points on the mountain. Base Camp survivors experienced
22 a scene of devastation that resembled a "plane crash site" (Participant 1), with tents buried
23 under ice; equipment and bodies of dead and injured climbers strewn all around. On returning
24 to Base Camp, climbers described the devastation and reflected on potential consequences
25 had they been in that location during the earthquake: "It was disbelief seeing Base Camp just

1 shattered. We realised had we been there we would have been gone without a doubt. We
2 would have been wiped out because our tents were buried under a foot or two of ice”
3 (Participant 4). Others described seeing the bodies of climbers who had died: “walking
4 through camp trying to find your extra boots or whatever and you'd see a puddle of blood and
5 a body...So it was pretty brutal” (Participant 5). Subsequently, Participant 1 described how
6 the immediate recovery effort was co-ordinated at Base Camp:

7 One or two of the...the big expedition leads...said, “Right, we’ll use our camp for
8 this, use their camp for that; let’s go. What do you need?”...And that happened within
9 half an hour...If it wasn’t a disaster, it was an incredibly impressive thing to watch.
10 We had a full-scale rescue and recovery operation.

11 The medical recovery was described as being equally efficient: “the medical tent in the
12 middle [of Base Camp] was still intact somehow, and the medics were in full flow at that
13 point, treating the people [who] had been brought in...That was 20 minutes in, maybe”
14 (Participant 1). Higher up the mountain, Participant 2 described other processes:

15 Right after the avalanche, we tried to contact the other expedition at Camp Two to see
16 if everybody was accounted for. We called for meetings...We tried to figure out if we
17 could go down and how many supplies we had, how long we could stay up there. And
18 the people that were involved were people with experience, people...I would say
19 [who] were mentally tough.

20 Similarly, at Camp One processes of evaluation and assessment were also described:

21 Making sure we had enough food and supplies to survive where we were - the route
22 was out between Base Camp and Camp One so we couldn’t get any resupply. And
23 eventually coordinating the helicopter evacuation because the route was not climbable
24 and didn’t look like it would ever be repaired - which it never was - so just managing
25 ...the plan for how we were going to get out of there eventually (Participant 6).

1 **Leadership behaviours.** A number of core behaviours were described as being
2 important in the organisation and initiation of this recovery effort. For example, the climbers
3 reported that leaders in this situation showed *clarity*: “I think the guides they show more
4 clarity afterwards because they just seem to know what to do in that situation - even though it
5 is a terrifying situation to be in, no matter who you are” (Participant 4). Indeed, climbers
6 reported that the leaders were often very direct in co-ordinating the recovery: “You tend to
7 find those people will focus in very clearly on what they're doing and then will direct quite
8 clearly, back to the other climbers what to do, and it suddenly doesn't become a semi-
9 diplomatic way of conversing” (Participant 7). An expedition leader described how: “in order
10 to be effective you have to stay calm, you have to put together a plan and use whatever
11 resources are available and execute and do everything you can to help” (Participant 6).

12 **Making sense of the disaster.** These participants reported an ongoing process of
13 attempting to make sense of the disaster, and the situation around them. This theme involved
14 *becoming aware of the extent of the disaster*, as well as *continuing uncertainty* inherent in the
15 situation.

16 **Becoming aware of the extent of the disaster.** The climbers described increasing
17 awareness of the scale of the disaster throughout the day. Participant 1 reflected that:
18 As the day wore on you became more aware. At the beginning of it you were
19 thinking, “This is very weird. This is Base Camp. This doesn't happen on Base
20 Camp.” And then you become aware that, “Right, there's a lot of people injured, and
21 there's a couple of people killed.” And then by halfway through the day, “There's at
22 least half a dozen people are killed here.” By the next few runs that you do [to the
23 medical tent]...you think, “Right, we're in double figures here.” By the end of the day
24 it was 19, with 60 people in a bad way...the worst disaster in the history of Everest.

1 *Continuing uncertainty.* These climbers described a continuous sense of uncertainty,
2 and loss of trust in the physical environment surrounding them. Participant 1 described:
3 You don't know whether it's all going to happen again in two minutes' time...I
4 remember being more scared maybe that night because we were told, "Go back to
5 your tents, put on your helmet. Don't really sleep. If you hear something...make sure
6 you get out of your tent"...All of your presumed safety nets were gone, and that was a
7 particularly uneasy feeling. So I think it's the combination of fear and disbelief...We
8 didn't get much sleep that night...you lose your faith with the floor under you...
9 whatever firm connection you have to terra firma was gone. Now, anything could
10 happen, any ground could move...And you still have no idea whether everyone at
11 Camp One and Camp Two is okay, and I had a lot of my buddies at Camp One.
12 Climbers remained on the mountain for days afterwards, with some participants among the
13 last to leave Base Camp. In doing so, they described the role of MT - in their own coping
14 responses, and through their observations of others at Base Camp (discussed below).

15 **The Role of Mental Toughness in Coping with the Disaster**

16 Four dimensions represented the participants' perceptions of the role of MT in coping
17 with the 2015 Everest disaster. These general dimensions are discussed below in terms of
18 their key themes with direct quotes to illustrate, which are also presented in Table 2. The
19 climbers displayed understanding of MT and advocated its importance in mountaineering.
20 Participant 1 stated:
21 "Mental toughness"...I've heard that term used a lot...Everyone arrives at Everest
22 reasonably ready. Everyone is in the same shape...but the upper mountain is a
23 psychological battle...Those...mental battles are what gets you up the Lhotse Face.
24 They certainly get you from Camp 4 to the summit and back, because you're dying
25 that whole journey. It's horrible...And that toughness, I guess, is the only thing that is

1 going to get you through it... We've seen people who you think have it... and then,
2 when things start getting tough, they just fold in on themselves... Whatever mental
3 capacity was required to convince them to go even further beyond what they're used
4 to, they weren't able to do it. Some people are able to call on that extra reserve.

5 ***INSERT TABLE 2 NEAR HERE***

6 **Emotional responses.** Participants described two themes representing the role of
7 mental toughness in climbers' emotional responses to this disaster. These themes were
8 conceptualised as *contrasting emotional responses* and the importance of *experience and*
9 *mental toughness*.

10 ***Contrasting emotional responses.*** Distinct responses were reported by the climbers in
11 the immediate aftermath of the earthquake and avalanche. For example: "We had all been hit
12 by the same thing, but everyone reacted differently" (Participant 4). Similarly, at Base Camp,
13 Participant 4 described how:

14 After the avalanche has hit us... there was a distinct separation between the people
15 that were just very scared [and] weren't sure what to do - that kind of fear overtook
16 them - and then the other people... especially the guides and the Sherpas... as soon as
17 the avalanche had passed, they were back on their feet... directing a recovery effort.

18 Similarly, Participant 2 described:

19 I could see two patterns: people that were familiar with this type of accidents like
20 doctors, medical personnel or experienced guides... they were more calm and useful
21 to help other people; and people that I would consider inexperienced or weaker
22 because of their personality... They were in shock, they were just sitting around... they
23 were just like in a daze... I would say that they were just like numb.

24 ***Experience and mental toughness.*** Participants described experience and MT as two
25 key factors that distinguished those climbers who were more quickly able to regain emotional

1 control, remain calm, begin to reorganise thoughts, and focus on immediate concerns
2 following the initial shock and confusion. This essentially reflected a process of “*self-*
3 *righting*”. Participant 6 reported more rational processes were indicative of *experience*:
4 “someone who has dealt with the situation can function more like a robot and process and
5 continue to function and help remedy the situation in whatever way is possible”. Others
6 attributed such responses to *mental toughness*: “people that are mentally tough can take all
7 the ups and downs with more calm because I think we act in a more rational way...[and] I
8 think that keeps us from...not getting carried away...We see the bigger picture” (Participant
9 2). Less tough individuals remained in shock for longer, dwelling on events and as such were
10 incapable of helping themselves or others.

11 **Coping styles.** Two themes representing the role of mental toughness in the strategies
12 employed to cope with the disaster: *suppressing emotion* and *task-focused coping*.

13 **Suppressing emotion.** Many of these participants reported that they suppressed
14 emotions at the time and dealt with them later, as Participant 8 noted:

15 It's horrible. But I think you get into a format like many rescue people - you can't
16 deal with emotion...because...you just have to get on with the job at hand...I think
17 people put a hold on their emotion at the time and get on with the job but then have to
18 deal with the emotional part on a later date.

19 However, for some experienced and mentally tough climbers – particularly those who lost
20 close friends or team members – emotional responses were much more immediate and
21 difficult to handle: “I lost somebody at Base Camp who I was very close to and that...made it
22 really challenging for me, just emotionally to process that and also be the team leader in
23 charge of...clients and...Sherpas” (Participant 6).

24 **Task-focused coping.** Following the reorganisation, climbers described rational
25 rather than emotional responses during the subsequent rescue efforts that involved coping by

1 focus upon the task at hand. This form of coping was essentially directed to aiding others and
2 as such reduced the opportunity for dwelling on personal circumstances or ruminating:

3 “We’ve got to get stuck in here. We are trained, we have our gear...this is our mission
4 now”...It’s your mind’s way of...dealing with it...Every sense is exposed to a whole
5 series of different traumas...And I think it’s your mind’s way of just saying, “Okay,
6 well what are we going to do? We can either...put you to work, or we can send you
7 into the corner to huddle up into a ball”...I think it is a coping mechanism...“Great,
8 this is your way of coping with this. Get on with it.” (Participant 1).

9 A primary reason for staying actively involved in the recovery was to regain perceptions of
10 control that had been lost during the earthquake, as Participant 1 described:

11 That sense of purpose under fire, almost, that you weren’t helpless. The whole thing
12 was massively out of your control. The flipping earth moved. So you’re trying to
13 regain...some semblance of control of the situation around me?”...It was trying to
14 make sure that I could control something when the ground under me was now gone

15 **Deciding whether to continue the expedition.** In the days after the disaster, many
16 climbers were faced with uncertainty and a decision of whether to continue the expedition.
17 This dimension was captured in the themes *desire to continue; acceptance; emergence of*
18 *negative emotions and behaviours; and deciding to leave or stay.*

19 ***Desire to continue.*** Following the recovery, there were differences in how climbers
20 responded to the end of the expedition as, for example, “some still held on to their dream of
21 continuing the climb” (Participant 8). One expedition leader, Participant 6, described how:

22 For everyone who’s planned and trained and spent so much money and focused and
23 sacrifice to make this expedition happen I think it can be tough to let go of that
24 goal...for some of the individuals they just couldn’t accept that it could be over.

1 Similarly, Participant 10 described the desire of one team to continue with their expedition
2 and attempt to summit:

3 When I got to the Base Camp three quarters of those teams had already downed tents
4 and had gone and yet there was still, definitely [one team] and they were trying to
5 rally round all the people that were still there to try and reopen the route and go for
6 the summit. The ‘want’ was there still. I obviously declined...they were
7 definitely...not willing to let go, they were just “come on, let's keep going.”

8 Others expressed their disappointment at not being able to continue – especially after
9 returning to Base Camp from higher up the mountain. Nevertheless, most participants
10 reported a shift in focus and realisation that the goals of their expedition had changed from
11 attempting to climb the mountain to directing and aiding recovery efforts.

12 *Acceptance.* Participants reported that MT was a key distinguishing factor between
13 mountaineers who were able to maintain a sense of perspective and recognise their own
14 personal goals and ambitions were of diminished importance in the context of the earthquake.
15 Like others, the toughest climbers were frustrated and disappointed at not having the
16 opportunity to summit, but accepted the reality of the situation, as Participant 1 reported:

17 When I realised it was an earthquake, there was a second where I thought, “You’ve
18 got to be kidding me...Concern that it might be influencing your own mission,
19 because at that point you put your own life into it, so you’ve got that selfishness going
20 on...I remember for a second thinking that, and then not thinking it ever again.

21 In contrast, “Mentally weak people initially don’t accept it and then when they do accept it
22 it's very hard for them and overwhelming, and then [they] have reactions to it...they deny all
23 blame, and anger, probably the stages of grief and losing their own ambition” (Participant 8).

1 ***Emergence of negative emotions and behaviours.*** This struggle to accept that the
2 expedition could be over caused the emergence of negative emotions and dysfunctional
3 behaviours in some cases:

4 People began to rebel; people began to look at people or individuals to blame; people
5 became very selfish. All they talked about was the money they'd paid as opposed to
6 people dying. A lot of people wanted to go on regardless. It actually brought the worst
7 out in [some] people. [Those] people became very selfish; very aggressive; very
8 greedy; blinkered vision; uncaring; argumentative. It got worse and worse as the days
9 went on because we were stuck there" (Participant 10).

10 Other mountaineers reportedly made every effort to leave as soon as possible:

11 I have a lot of judgement for the folks who chose to try and run to the helicopters
12 when they arrived the next day to bring the sick back to Kathmandu...[some people
13 who] tried to feign injury to get on helicopters to get back to Kathmandu, to get
14 home...We lost patience with those folks (Participant 1).

15 ***Deciding to leave or stay.*** The climbers described differences in how individuals
16 responded with respect to leaving the mountain and once more associated these differences
17 with MT. Some climbers stayed at Base Camp to help with the recovery, while others left as
18 soon as possible. Indeed, a number of participants in this study stayed to help with relief
19 work in Nepal after coming down from the mountain. Participant 2 described how: "I was the
20 last person to be flown off the mountain...But I ended up staying in Nepal for another two
21 weeks to help with the search and rescue"; and Participant 1 explained that:

22 I stuck around for the two weeks for the relief work, partly because I just didn't want
23 to go home and...stare at the wall and realise, "That's happened"...Because your
24 mission is gone...and you're lucky to be alive...You've had to endure trauma that you

1 really would rather have not endured. And that's a private thing. So...I knuckled
2 down again and started doing the relief work.

3 **Returning home but staying with the mountain.** This dimension described the
4 experiences and reflections of these climbers – who all considered themselves to be mentally
5 tough - after returning home. Five themes were reported: *the emotional aftermath*; *post-*
6 *traumatic stress*; *continuing with mountaineering*; *rationalising luck and acceptance of risk*;
7 and a *changed perspective on life*.

8 ***The emotional aftermath.*** The climbers described how suppressed emotions were
9 experienced after leaving the mountain: “My first sort of sadness was when I got home”
10 (Participant 4); “anybody who says they can shrug that off emotionally is lying to themselves.
11 It's a big deal” (Participant 6). Many reported being unable to leave the experience behind:

12 Definitely when I got to Dubai airport, suddenly my team that had been around me
13 had gone and I just remember crying in the airport – first time I had broke down. I
14 think I had just realised the mess I had been in and what I had seen and how people
15 can be taken like that and yes, I was emotional for a long time actually (Participant 4).

16 Others, however, did not experience such emotion until much later: “the enormity of it kind
17 of hit me...a year on, and I thought, “Well, that really was a big thing, wasn't it?””

18 (Participant 1). Subsequently, these participants reported *grieving* long after leaving the
19 mountain: “there's the emotionally tough days, you're dealing with grief of losing someone”
20 (Participant 6). This process was particularly vivid for some, including Participant 4:

21 We lost three of our team. So we had that personal connection and I knew them from
22 last year so that got to me for a while and even today, ever since it happened, every
23 single day since my mind replays the avalanche and what had happened.

24 Participants reported a sense of *guilt* following their experience of the earthquake. This was
25 illustrated by one climber who described: “I think the feeling of guilt more than anything.

1 Safe in my house and thinking “why am I spared this, why not me?” - it didn’t really hit me
2 until I was on my own” (Participant 4).

3 ***Post-traumatic stress.*** Some climbers reported that the experience had longer-lasting
4 impact. Participant 5 explained that: “For the Everest [expedition], for this last Spring...I've
5 suffered trauma and yes it's led to some repercussions that weren't totally pleasant and that
6 would be post-traumatic stress”. This participant also considered himself to be mentally
7 tough, indicating that such characteristics did not render these individuals immune to the
8 effects of natural disaster. Other climbers, including Participant 1, described similar effects:

9 When I fly in aeroplanes now, it’s very different. Turbulence is utterly terrifying. And
10 I don’t know how to get rid of that...The rumble goes up into your muscle fibres, and
11 it’s part of your muscle memory. I still have it. Whenever I walk up to [the train]
12 station...the train comes through, the whole station vibrates, and every muscle in my
13 leg tells my brain to get out of there...My brain is so influenced by that experience.

14 ***Rationalising luck and acceptance of risk.*** Some climbers attributed their survival
15 (and the death of others) to luck: “I think about the 19 people that just died in a flash? That’s
16 because they were just in the wrong place. Just one of those things” (Participant 4). Others
17 attributed the death of others to the inherent risk in mountaineering: “losing somebody – yeah
18 it’s really hard and it’s sad. But everybody who’s there knows the risks that are involved”
19 (Participant 2). Similarly, Participant 1 – who also survived the Everest avalanche in 2014 –
20 rationalised the role of luck in two unsuccessful Everest expeditions:

21 If we were in the position at Base Camp that we were in in 2014, we would have been
22 killed. That’s just blind luck...The fact that I wasn’t just waltzing across the middle of
23 Base Camp at the time, which I would have been doing regularly...Any of that could
24 have been happening. Just right place, wrong time. So I guess on the whole, I feel

1 more lucky than unlucky. Because...I've come out of the two worst disasters in the
2 history of Everest without a hair on my head touched.

3 As the climbers were leaving the mountain, some reflected on the reality of the experience.

4 Although high-altitude mountaineering is a risky sport/activity, and these participants had
5 regularly experienced death in the mountains, some reflected a sense of realising their own

6 mortality: "I never believed it could happen to us, and then I realised it *could* happen to us"

7 (Participant 3). This sense was illustrated by one climber who described how: "I remember

8 looking out of the helicopter window and thinking I'd got away with it all" (Participant 10).

9 ***Continuing with mountaineering.*** All of the participants in this study continued in
10 high-altitude mountaineering. Participants reported a passion for the sport, feeling that
11 mountaineering was something that enhanced their lives. As such, climbing other peaks soon
12 after the disaster was reported as a way of regaining control (and confidence) rather than
13 dwelling and ruminating upon events: "You don't dwell on it...If you thought about it then
14 you wouldn't do it, would you? But I [still] just love everything about it [mountaineering]"
15 (Participant 10). Participant 1 explained the level of risk involved in returning to Everest:

16 Everest is inherently dangerous, so...you've rationalised in your mind the
17 danger...that's always going to exist. It existed before the earthquake happened, it
18 exists after the earthquake happened...In relative terms, it's not the same as coming
19 out of the building that had been half-destroyed and then walking back into it...The
20 mountain was no more dangerous now than it was the day before the earthquake.

21 Similarly, Participant 2 described how: "I think it (death) also helps me focus for the next
22 time - do everything right and you will come down". Participant 4 stated:

23 Seeing how fast life can be taken away from you has just spurred me on to keep doing
24 what I am doing because it could have been me. So in case it ever is, I want to make
25 sure that I achieve as much as I can.

1 expected, the expedition leaders, mountain guides, doctors, and Sherpas, who had previously
2 experienced traumatic situations in the mountains, tended to direct efforts and make initial
3 decisions. Similarly, recent work (Author 1 et al., under review) on MT and decision-making
4 in high altitude mountaineering found that the combination of experience and MT was crucial
5 in terms of survival and success in extreme conditions. These participants also described their
6 observations of the behaviour of others at Base Camp – including negative emotional and
7 behavioural responses such as selfishness and feigning injury, which relates to previous work
8 on antisocial behaviour following natural disaster (Garfin & Silver, 2015). All participants
9 reported an initial sense of shock, confusion, and disorientation as the earthquake and
10 avalanches occurred. From this point onwards, differences emerged. Examining MT in the
11 aftermath of a natural disaster allowed the behavioural responses of more and less tough
12 climbers to be identified in adverse and traumatic circumstances that are different to most
13 other sport settings.

14 Both the immediate and subsequent effects of the earthquake reported by participants
15 in our study are important in the context of previous work concerning psychological effects
16 following natural disaster (e.g., Henderson et al., 2010). Our participants, who all reported
17 themselves as mentally tough, were less likely to dwell or brood over events in the immediate
18 aftermath of the earthquake as coping was effectively achieved by a task-oriented focus that
19 placed emotions on hold. This finding is commensurate with Henderson et al.'s (2010) study
20 of coping behaviour amongst older adults in the aftermath of Hurricane Katrina, in that
21 mentally tough climbers also reported “staying busy” immediately after the earthquake, as a
22 coping mechanism. It could be the case that MT participants’ ability to reappraise,
23 reorganise, and shift focus from the initial threat to the challenges of a “new mission” (e.g.,
24 helping others and staying safe) meant that they were less likely to brood over the events.
25 Appraising stressful situations to be challenges rather than threats is linked to more positive

1 emotions such as confidence, as well as more effective performance (Folkman, 2008; Jones,
2 Meijen, McCarthy & Sheffield, 2009). Indeed, Kaiseler, Polman and Nicholls (2009) found
3 that MT was related to fewer stress appraisals and greater perceptions of control.

4 Alternatively, it could be the case that these participants had higher coping self-efficacy
5 which has been identified as a mediator of distress following natural disaster (Benight, Swift,
6 Sanger, Smith & Zeppelin, 1999).

7 In previous studies (e.g., Crust et al., 2010; Crust et al., 2014; Nicholls et al., 2011)
8 MT has been associated with effective coping, enabling performance to be relatively
9 unaffected regardless of setbacks or adversity, and reflects a task-oriented focus and not
10 dwelling on setbacks (quickly moving on). While this is evidently an effective strategy in the
11 short-term, the longer-term effects are less well understood. Evidence from the present study
12 suggests some participants who placed emotions on hold reported negative consequences of
13 this at a later time. While for some the outcomes concerned growth and reappraisal, others
14 reported PTS. Recent research (Shepherd & Wild, 2014) reported PTS symptoms associated
15 with greater emotional suppression strategies and less cognitive appraisal. Garcia et al.
16 (2015) also found that ruminating processes such as brooding and cognitive strategies could
17 explain different outcomes such as those experiencing PTG as opposed to PTS. Similarly, our
18 participants reporting growth appeared to rationalise and reappraise the event through direct
19 reflections in a process of deliberate rumination (Garcia et al., 2015). At the very least,
20 present results have established that MT, while an important resistance resource, does not
21 protect against PTS.

22 Furthermore, participants reported their core assumptions of the world were initially
23 shattered by the earthquake (similar to Garcia et al., 2015) but all eventually returned to
24 mountaineering. Thus, one longer-term coping strategy used by these participants was to
25 return to the activity relatively soon afterwards – as though they were actively avoiding the

1 potential of dwelling on the disaster or tackling the emotions involved. This suggestion is in
2 line with Crust et al. (2014) who reported that MT participants move on to the next task
3 quickly and do not spend much time thinking about success or failure in the short-term

4 Mentally tough participants reported quickly regaining a sense of equilibrium
5 following the initial shock and the ability to remain calm and think clearly about what needed
6 to be done. This is theoretically consistent with past work that has found MT related to self-
7 control in adverse situations (Cook et al., 2014; Gucciardi, et al., 2008). Emotions were
8 placed on hold (cf. Fawcett, 2011) as thoughts were immediately focused on the survival of
9 self and others, and then turned to aiding climbers who were in shock or injured. In terms of
10 coping, and similar to previous work (Crust et al., 2010), the toughest participants reported
11 compartmentalising their thoughts to allow a strategic plan to be formulated. This reflected
12 thinking about what needed to be done rather than personal concerns, and avoided dwelling
13 on events by moving thoughts onto the next problem that needed to be addressed (keeping
14 mentally busy). Nevertheless, even the mentally toughest mountaineers reported self-doubts
15 and effortful struggles to cope with the enormity of unfolding events and personal loss. In the
16 hours following the initial event, when recovery efforts were under way, participants reported
17 personal disappointment and frustration that goals (to summit) had been curtailed. This was
18 soon replaced, for the toughest, by a sense of perspective that in the circumstances personal
19 goals were of little significance against the tragic events that had unfolded. One characteristic
20 that was reported as defining the mentally toughest climbers was staying behind to provide
21 aid within Nepal rather than leaving the country immediately. Similarly, recent work has
22 challenged the notion of mentally tough individuals being selfish and focused only upon
23 personal ambition, as in the context of mountaineering, the toughest were found to set aside
24 personal goals to rescue and aid others (Author 1 et al.). The coping processes and the sense
25 of perspective reported appear consistent with findings from sports MT literature (Crust et al.,

1 2010; Crust et al., 2014, Nicholls et al., 2008) and also more theoretical work concerning the
2 directed forgetting paradigm – setting aside previously experiences to focus upon the present
3 task (Dewhurst et al., 2012).

4 In contrast, climbers who were perceived by these participants to be less mentally
5 tough were reported to remain in a state of shock for longer, were unable to contribute to
6 immediate relief efforts, and needed to be supported and aided by others. A number of such
7 individuals were reportedly ruminating and dwelling on events (e.g., “I could have died”) and
8 were unable to think clearly or rationally about what needed to be done. This included some
9 experienced mountaineers, demonstrating that MT and experience are not necessarily
10 synonymous. Some clear contrasts were evident between more and less tough climbers, in
11 regards to the end of the expedition. Some mountaineers with lower MT sought to leave the
12 mountain immediately and were on occasion reported to be feigning injury in order to be
13 flown out by helicopter. Other less tough mountaineers were reported to behave selfishly,
14 with a lost sense of perspective, and found it difficult to reconcile the end of personal
15 ambition; this manifested in anger, blaming others, wanting to continue climbing regardless,
16 and general dysfunctional behaviours at Base Camp before leaving the mountain.

17 **Limitations and Future Research Directions**

18 The present research offers insights into the lived experiences of surviving the 2015
19 Nepal earthquake and avalanche at Everest Base Camp, with new perspectives on
20 psychological responses, coping, and the role of mental toughness. However, as with all
21 research, some limitations were evident. For example, these are accounts of the lived
22 experience as this time - at another time (e.g., before or after this study), participants may
23 view the experience differently. Furthermore, these experiences are derived from a small
24 purposive sample, and generalisation should not be done on the basis of sample, as the
25 sample is not representative of all involved (e.g., Sherpa), but cautiously and critically

1 through analytical generalizability. Similarly, we obtained the perspective of mentally tough
2 mountaineers who provided their perceptions, observation, and experiences of the disaster
3 and the people around them/different coping responses. It would also be useful to interview
4 participants who experienced “less tough” responses to obtain their perspective. While these
5 participants were harder to reach and less willing to be interviewed, they may have offered
6 alternative experiences and interpretations of the disaster.

7 The findings offer several promising lines of enquiry for future researchers. These
8 participants described eagerness to go back to Everest and continue mountaineering despite
9 being involved in a natural disaster. Future research could aim to explore their experiences of
10 making such a return. Future research could also examine the relationship between mental
11 toughness and mental health (e.g., protection vs. susceptibility across issues such as post-
12 traumatic stress). Specifically, it appears important for future researchers to examine the
13 longer-term effects of coping strategies employed by mentally tough individuals. While the
14 logical and “in the moment” focus that is applied to manage during traumatic circumstances
15 can lead to effective results at the time, researchers should examine whether this approach
16 may actually suppress emotions which can surface later and cause longer-term issues. Indeed,
17 this suggestion reinforces the need to develop effective interventions for mountaineers and
18 survivors of other traumatic sporting or environmental events. Importantly, it should not be
19 assumed that the toughest individuals, who appear to cope well with events at the time, do
20 not need support at later stages. Indeed, it could be the case that specific interventions are
21 required for those who are low (e.g., shorter-term strategies) and high (e.g., longer-term
22 strategies) in MT. Finally, given the risk involved in these extreme environments, and high
23 mortality rates, guides and operators should consider providing psychological support for
24 climbers, for example, during preparation for expeditions and access to practitioners after.

25

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Tables

2 Table 1: Mountaineers’ experiences of the 2015 earthquake and avalanche on Mount Everest

Example Raw Data Themes	Higher-Order Themes	General Dimensions
Felt the ground rumbling; knew something was wrong; thought it was an avalanche	Recognising the earthquake	Experiencing the earthquake
Fear for self and others on the mountain; no control; thinking “what do we do?”	Fear and helplessness	
Response initiated by guides, Sherpas and expedition leads; assessment and evaluation key	Initiating rescue and recovery	Reorienting, reorganising and recovery
Clarity and knowing what to do; direct communication; calmness and planning	Leadership behaviours	
Realising how bad the disaster was; hearing increasing death toll	Becoming aware of the extent of the disaster	Making sense of the disaster
Don’t know what’s going to happen; waiting for aftershocks; no idea if friends are okay	Continuing uncertainty	

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4

1 Table 2: The role of mental toughness in coping with the 2015 Everest disaster

Example Raw Data Themes	Higher-Order Themes	General Dimensions
All hit by the same thing but everyone reacted differently; some pro-active, others shaken badly	Contrasting emotional responses	Emotional responses
Mentally tough and experienced climbers able to regain control, reorganise, and focus on the task	Experience and mental toughness	
Put emotions on hold; challenging to process emotions after losing friend/team member	Suppressing emotion	Coping styles
Rational rather than emotional responses; getting stuck in to avoid dwelling or ruminating	Task-focused coping	
Some still wanted to climb; tough to let go of the goal; disappointment at end of the expedition	Desire to continue	Deciding whether to continue the expedition
Mentally tough climbers able to maintain perspective; personal goals no longer important	Acceptance	
Brought out the worst in some: frustration, anger, blame, selfishness	Emergence of negative emotions and behaviours	
Some left as soon as possible; some stayed in Nepal for two weeks to help with recovery	Deciding to leave or stay	
Sadness and heightened emotional sensitivity; survivor’s guilt; grief	The emotional aftermath	Returning home – but staying with the mountain
Post-traumatic stress; still feel shakes/afraid of turbulence	Post-traumatic stress	
Almost immediate thoughts about climbing again; planning return to Everest	Continuing with mountaineering	
Everyone knows the risks involved; just one of those things; right place, wrong time; felt lucky	Rationalising luck and acceptance of risk	
Appreciating the importance of life; now have an attitude of “that’s life”; realise how lucky I am to be alive	Changed perspective on life	

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