Emotions and Emotion Regulation among Novice Military Parachutists

Key words: Emotions, Mood, Sport, Psychological Skills, Self-regulation

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Abstract

Novice soldiers (N = 95) reported their emotions and their use of emotion regulation strategies across a range of domains. Results indicate significant differences between emotions and emotion regulation strategies across situations. Prior to parachuting, participants reported feeling intense anxiety and happiness whilst also feeling energetic, a profile similar to that which they experienced in sport. This was however different to those experienced in work and in life in general. In terms of emotion regulation strategies, participants reported greater use of strategies to increase unpleasant emotions an hour before parachuting than in other situations. Findings suggest that developing training protocols to increase the flexibility and versatility of emotion regulation skills might enhance the preparation of novice soldiers for military duties.

Key words: Emotions, Mood, Psychological Skills, Stress, Self-regulation

Emotions and Emotion Regulation among Novice Military Parachutists

Emotion regulation is the automatic or deliberate use of strategies to initiate, maintain, modify or display emotions (Gross & Thompson, 2007). Emotions are subjective feelings experienced in response to events either in an individual's environment, for example in an aircraft immediately prior to a parachute jump, or in an individual's mind, for example anticipating the same jump (Lazarus, 2000). Emotions usually encompass three types of response: physiological such as increased respiration and heart rates; cognitive such as changes in attention, perception and information processing; and behavioural such as avoidance or aggression. Via these responses, emotions are proposed to influence peoples' goals and actions. Emotions also have a subjective 'felt' component that results in people tending to describe them as either pleasant (e.g., happiness and excitement) or unpleasant (e.g., anger and fear). People often seek to experience more pleasant emotion and less unpleasant emotion, and indeed much of the scientific and philosophic literature on emotions construes them in this context. Emotions can also be functional, for example, the emotions of anger and fear can motivate people to deal with the causes of those emotions through, for example, assertion or avoidance respectively. However, emotions such as anger or fear can be dysfunctional if the behaviours of assertion or avoidance are not an option in the situation in question. For example, a soldier might be anxious about having to parachute, but realise that to not jump would jeopardize his career or the success of an operation. In such a situation, maintaining the emotion in question might not facilitate performance and a more appropriate emotion might be desired, for example bravery or calmness. Emotion regulation strategies are employed when such a discrepancy exists between current and desired emotions.

The above paragraph describes two distinct motivations to regulate emotion. Firstly to *feel* a certain way, often termed 'hedonic emotion regulation', perhaps typified by, for

example, improving how one feels by listening to music, drinking alcohol or seeing friends (Thayer, Newman & McClain, 1994). Secondly to achieve a certain objective, often termed 'instrumental emotion regulation', and perhaps typified by an athlete using imagery to increase anger to thereby improve physical performance (Tamir, 2009). Whilst hedonic emotion regulation has been a feature of the emotion literature for many years, recent research has focused on emotion regulation strategies that facilitate performance. Tamir (2009) demonstrated that individuals prefer to experience high-activation unpleasant emotions such as anger if the task involves confrontation. Hanin (2010) demonstrated that athletes hold strong beliefs that anger can help performance through feeling energized, whilst others in sport have reported that anxiety can influence performance by helping the athlete focus on task-relevant information (Eysenck & Calvo, 1992; Harris, Hancock, & Harris, 2005; Janelle, 2002). Consistent with the above idea, evidence suggests that the management of emotions is a determinant of performance outcome in a variety of stressful circumstances, including aviation (Sexton, Thomas, & Helmreich, 2000), education assessment (Lane, Thelwell, & Devonport, 2009), law enforcement (Le Scanff & Taugis, 2002; Saus et al., 2006), surgery (Wetzel et al., 2006), and sports performance (Beedie, Terry, & Lane, 2000; Hanin, 2000).

Emotion regulation has also been reported as a critical factor in performance (Davis, Woodman, & Callow, 2010; Fiore & Salas, 2008; Janelle & Hatfield, 2008; Tenenbaum et al., 2008; Totterdell & Leach, 2001; Wallenius, Larsson, & Johansson, 2004). In the military however, the intensity of emotional states experienced in theatres of operation presents a challenge to researchers and to military personnel endeavouring to develop effective training protocols (Friedland & Keinan, 1992; Steinberg & Kornguth, 2009). However, although the performance demands and associated emotional states experienced in theatres of military operation are unique and not easily replicated, the cognitive and physiological responses elicited by intense emotions arguably parallel some of those identified in sport (Janelle &

Hatfield, 2008). Sport, and sport-like physical activity, have a long-standing place in military training, although the traditional emphasis of these has been on physical preparation. There is however growing recognition that mental training for sports competition might transfer to military settings (e.g., the Army Center for Performance Enhancement, see http://www.acep.army.mil/index.php/Home).

A limitation of previous research in this area is that it has not examined the extent to which emotion regulation strategies transfer across different domains in ecologically valid settings. The notion that emotional profiles associated with success might vary by situation and task is well documented (Hanin, 2010; Lane et al., 2009). For example, in a study that investigated within-subject differences in optimal emotional profiles for sport and academic settings, Lane et al. (2009) reported that anger was helpful before sports competition but not prior to an academic examination. The implication of this finding is that athletes involved in education require flexible emotion regulation skills, and therefore that training of a variety of emotion regulation skills will be beneficial to performance in both domains.

Eccles and Feltovich (2008) proposed that psychological skills such as mental imagery, self-talk management, goal-setting, and organization can be learned in a general sense, and then applied to specific domains. For example, if an individual learns to use imagery to control pre-competitive anxiety in sport, that individual would also be able to use imagery to control anxiety in a military situation. It is reasonable to suggest that the skills that facilitate success in sport could overlap those required to be a successful soldier (Zinsser, Perkins, Gervais, & Burbelo, 2004). It could be argued that strategies that encourage transfer of emotion regulation skills from sport to military settings are therefore desirable.

Eccles and Feltovich (2008) argued that use of psychological skills is a fundamental individual difference variable that influences the rate at which individual's learn new skills. Individual differences in expertise have been identified as being influential in sport and

military performance (Fiore, Hoffman, & Salas, 2008; Janelle & Hatfield, 2008). Novice military personnel, defined as "someone who is new—a probationary member" (Fiore et al., 2008, p. S162), have to learn new skills at a very fast rate. They will be asked to complete demanding and potentially dangerous tasks, such as parachuting, that require both skill and effective emotion regulation. However, they have limited experience and knowledge of the emotional states they will be subjected to during demanding performance situations, and of how to regulate these. Therefore, developing emotion regulation strategies that can be transferred across situations has utility in the training of military recruits. This seems particularly important in tasks such as parachute jumping, in which not only would avoidance or withdrawal have implications for a recruit's progress, but in which anxiety-induced error can be fatal.

Research conducted in one performance domain is increasingly being applied across disciplines (Fiore et al., 2008; Goodwin, 2008). For example, cross-disciplinary research between sport psychology and the military has produced a range of findings that have enhanced the training of expertise (Williams, Ericsson, Ward, & Eccles, 2008), perceptual-cognitive skills (Ward et al., 2008), and coping strategies (Tenenbaum, Edmonds, & Eccles, 2008). However, the proposed transferability of emotion regulation strategies between situations has yet to be examined. The present study examined the emotions and emotion regulation strategies of novice soldiers before their first parachute jump, and compared these with the same variables in sports competition. We also assessed emotions and regulation strategies used in work (i.e., basic military training) and in life in general in order to produce a comprehensive overview of the full range of emotions and regulation strategies used by novice soldiers. In consideration of previous research examining emotions and emotion regulation (e.g., Hanin, 2000; Tamir, 2009), we hypothesized that sport and parachute

jumping would be associated with high anxiety and consequently greater use of emotion regulation strategies to reduce anxiety.

Method

Participants

Ninety-five active-duty male soldiers (Age; *M* = 22.04 years, *SD* = 4.16) who were newly enlisted with the British Armed Forces but who had not previously parachute jumped volunteered for the study. A condition of recruitment was that participants also competed in sport. The most commonly reported sports were: soccer n = 28; rugby n = 19; running n = 10; and boxing n = 8. Participants were novice soldiers in the first year of service and as such all were at the rank of private.

Measures

Emotions.

Emotion was measured using items from the UWIST (Matthews, Jones, & Chamberlain, 1990). Items assessed emotion representing all areas of the circumplex model of emotion (Russell, 2003). Items assessed low activation pleasant emotion (‘Calm’ and ‘Happy’), low activation unpleasant emotion (‘Gloomy’ and “Sluggish”), high activation unpleasant emotions (‘Anxious’ and ‘Angry’), and high activation pleasant emotion (‘Energetic’). Items were rated on a 7-point scale from 1 (*not at all)* to 7 (*a great extent*).

Emotion Regulation.

Emotion regulation was measured using the Emotion Regulation of Others and Self scale (EROS: Niven, Totterdell, Stride, & Holman, 2011). The EROS scale has demonstrated content, factorial and criterion validity (Niven et al., 2011). The scale comprises two subscales: strategies to increase pleasant emotions (e.g., “I thought about my positive characteristics to try to make myself feel better”, “I laughed to try to improve how I felt”), and strategies to increase unpleasant emotions (e.g., “I looked for problems in my current situation

to try to make myself feel worse", "I thought about my shortcomings to try to make myself feel worse"). Participants rate items on a five point scale where 0 = *not at all* and 5 = *a great deal*. Participants are informed that they should rate the frequency of usage rather than evaluate whether each strategy was effective.

Procedure

The study received institutional ethics approval from the ethics review board at the university carrying out the research, and written permission was obtained from the officer in charge of the Parachute Training School. Prior to the study, a full explanation of the procedures and risks was given to all participants and written informed consent was obtained.

Participants attended the Royal Air Force (RAF) airfield and training center approximately four hours prior to making their first parachute jump, and were required to complete pre-jump training which lasted approximately 90 minutes. Participants completed questionnaires addressing their emotional state and their use of emotion regulation strategies in relation to three scenarios; at a recent sport event in which they participated, during military training, and in life in general over the past four weeks. One hour prior to the parachute descent, participants were also asked to indicate their "*current*" emotional state and their use of any emotion regulation strategies at that point in time.

Upon completion of their descent and return from the drop zone to the aircraft hangar (approximately twenty minutes from the time participants exited the aircraft), participants completed the measures of emotions and emotion regulation in relation to the moments immediately prior to jumping.

Data analysis

Differences between situations in emotion and emotion regulation were compared using a repeated measures multivariate analysis of variance (MANOVA). Given the focus of the study was on pre-jump experiences, we examined differences that might have occurred

between an hour and immediately before jumping. If these differences were significant, then follow-up analyses were conducted separately for an hour and immediately before respectively. We used repeated measures MANOVA to conducted follow-up analysis. An acknowledged limitation of this method is the increased likelihood of a Type-1 error (false positive). Consequently Bonferroni corrected alpha values were used (alpha = .0125). However, given the relatively large sample size, emphasis is placed on the magnitude of the effect rather than its statistical significance.

Results

Descriptive statistics for emotions experienced between different situations are contained in Table 1 and displayed graphically in Figure 1. Emotion regulation strategies used by situation and by time are contained in Table 1 and depicted graphically in Figure 2. Follow-up tests to examine where differences lay can be found in Table 2 for emotions. With regards to emotion regulation, descriptive statistics are contained in Table 3 with follow up tests in Table 4, with results being displayed graphically in Figure 2. An internal consistency check indicated alpha coefficients over .70.

Emotion results

MANOVA to investigate situational differences in emotion revealed a significant overall effect (Wilks' lambda $_{28,61}$ = .21, $p < .001$, Partial Eta^2 = .79, see Table 1). The intensity of emotional responses differed significantly across situations. A comparison of situational effects indicated significant differences (Wilks' lambda $_{7,84}$ = .81, $p < .05$, Partial Eta^2 = .19) between emotions experienced one hour and immediately before leaving the aircraft. Immediately before jumping participants reported higher scores for Energetic, and lower scores for Anger ($F_{1,90}$ = 10.86, $p < .01$, Partial Eta^2 = .11) and Sluggish ($F_{1,90}$ = 8.25, $p < .01$, Partial Eta^2 = .08) than one hour before jumping. Using the 1-7 Likert scale as a guide

to judging the relative intensity of the emotions experienced, Figure 1 shows that mean scores over 5 for Anxious.

A large effect size was observed for differences in emotions immediately before leaving the plane, emotions experienced in a stressful situation experienced at work (Wilks' lambda $_{7,88}$ = .47, p < .001, Partial Eta^2 = .53), and emotions experienced in life in general (Wilks' lambda $_{7,88}$ = .46, p < .001, Partial Eta^2 = .54). Smaller effect sizes were observed for differences between pre-jump emotions and those emotions experienced in competition (Wilks' lambda $_{7,88}$ = .63 p < .001, Partial Eta^2 = .37). In comparison to the feelings in general, pre-jump scores for Anxious were higher with lower scores for Sluggish and Angry. Participants reported significantly higher scores for Angry when playing sport.

A comparison of emotions experienced an hour before jumping and emotions experienced at work indicated a large difference (Wilks' lambda $_{7,88}$ = .49, p < .001, Partial Eta^2 = .51) with pre-parachute jumping associating with higher Happiness, Anxiety and lower Anger than at work (see Table 2). A moderate effect size was associated with differences in emotions experienced an hour before jumping and those experienced in life in general (Wilks' lambda $_{7,88}$ = .39, p < .001, Partial Eta^2 = .39) with parachute jumping associating with significantly higher Anxiety and lower Anger. When compared to sport, there was a moderate effect size (Wilks' lambda $_{7,88}$ = .63 p < .001, Partial Eta^2 = .37), with emotions experienced in sport being associated with higher Anger ($F_{1,94}$ = 10.66, p < .01, Partial Eta^2 = .11) and feeling more Energetic than ($F_{1,94}$ = 16.87, p < .001, Partial Eta^2 = .16) than emotions experienced an hour before jumping.

Emotion regulation

MANOVA results for differences in emotion regulation strategies across situations indicated significant differences for each. A comparison of regulation strategies used immediately before jumping with those used an hour before indicated a large effect size

(Wilks' lambda $_{2,90}$ = .35, p < .001, Partial Eta^2 = .65). One hour before jumping participants reported greater usage of both strategies to increase pleasant ($F_{1,91}$ = 12.77, p < .01, Partial Eta^2 = .12) and strategies to increase unpleasant emotions ($F_{1,91}$ = 142.41, p < .001, Partial Eta^2 = .61) than immediately before jumping. Further analysis (Table 4) indicated that participants reported greater usage of strategies to increase pleasant and unpleasant emotions when playing sport (Wilks' lambda $_{2,90}$ = .63, p < .001, Partial Eta^2 = .38), a stressful work situation (Wilks' lambda $_{2,91}$ = .79, p < .001, Partial Eta^2 = .21) and life in general over the past 4-weeks (Wilks' lambda $_{2,91}$ = .71, p < .001, Partial Eta^2 = .26).

Greater usage of strategies to increase unpleasant emotions was evidenced between an hour before jumping and work (Wilks' lambda $_{2,90}$ = .39, p < .001, Partial Eta^2 = .61) and between those strategies used in life in general (Wilks' lambda $_{2,90}$ = .38, p < .001, Partial Eta^2 = .62).

Discussion

The present study investigated the emotions experienced and emotion regulation strategies used by novice military parachutists before their first jump, in sport, in work (i.e., basic military training), and in life in general. A key objective of the present study was to assess the potential transferability of these strategies between situations. Results revealed that participants' emotions and emotion regulation strategies varied significantly across situations and within the time period leading up to the first parachute jump.

Participants generally reported relatively high scores for pleasant emotions such as happiness and energetic. Participants reported significantly higher anxiety in parachute jumping (both one hour and immediately before) and in sports competition, than in work or life in general. Participants were highly anxious one hour prior to parachuting, the intensity of these feelings reflecting those reported during recent sports competition. As parachute jumping and sport are pre-planned and discrete tasks where success and failure is clearly

defined and understood, this emotional response is consistent with conceptions of anxiety in achievement settings described elsewhere (Hanin, 2000; Lazarus, 2000).

Intense anxiety has implications for information-processing capacities and attention (Eysenck & Calvo, 1992; Harris et al., 2005; Janelle, 2002). In the hours leading up to the execution of their first descent parachutists received basic training and final instructions outlining the appropriate procedures for successful task completion. The ability to comprehend and integrate this information may have been undermined by anxiety. Consequently, in this situation, any interventions aimed at reducing anxiety will have greater implications for performance the earlier they are initiated (Eccles & Feltovich, 2008). We suggest that planned attempts to regulate anxiety be instigated with sufficient time for the benefits to be realized and prior to anxiety escalating beyond control. This optimal point in time might be sometime ahead of the point in time at which the recipients of the intervention would seek to regulate their own anxiety. For example, soldiers might only seek to regulate anxiety in the few minutes before a parachute jump, and by so do fail to recognise that high levels of anxiety whilst receiving instructions, orders or information might compromise performance or increase risk.

The findings of the present study in relation to emotion regulation suggested that the most frequent use of strategies to increase pleasant emotions was in sport. We suggest that this result can be explained by examining the nature of emotion and emotion regulation in such pre-planned activities that typically evoke intense emotions (Lazarus, 2000; Hanin, 2000). Evidence in sport indicates that athletes organically initiate strategies to regulate their emotions; that is they learn to recognise what to do change their emotions before competition (Thomas, Murphy, & Hardy, 1999). As pointed out by Eccles and Feltovich (2008), psychological skills such as managing self-talk are highly important for performance. Arguably, the participants expressing greater use of strategies to increase pleasant emotions

were indicating conscious use of self-talk. Further, the use of strategies to increase pleasant emotion in sport might suggest that participants understand that pleasant emotions and associated thoughts have implications for performance and attempted to improve their emotions accordingly (Robazza, Pellizzari, & Hanin, 2004).

Participants used strategies to increase unpleasant emotions one hour ahead of the parachute jump. Use of these strategies corresponded with high levels of anxiety but low scores for other unpleasant emotions, suggesting that the increasing unpleasant emotions strategies focused on anxiety. This is an interesting finding, and perhaps warrants some explanation, albeit speculatively. One hour before a first parachute jump is perhaps when the realisation that the jump *will* occur becomes tangible, and the associated thoughts – often voluntary – might be construed by participants as anxiety-increasing (e.g., "I was thinking about what could go wrong and that made me anxious"). Moments before the jump of course, there is little participants can do other than focus on the logistics of the jump itself, that is, what needs to be done and in what order. These demands might reduce anxiety via competing for cognitive resources, effectively distracting the parachutist. Alternatively, it is possible that participants instrumentally increase anxiety one hour prior to the jump in order to then instrumentally reduce it in the minutes prior to the jump; that they reported happiness at one hour prior suggests that the anxiety was welcome, much as many athletes welcomes a degree of anxiety prior to competition (research in sport has found a great deal of evidence that athletes experience relatively high levels of anxiety coupled with vigour before competition, and that athletes report such an emotional state to help performance, Beedie et al., 2000; Hanin, 2000, 2010; Lane & Terry, 2000).

However, given the notion that high anxiety negatively influences skilled performance (Ward et al., 2008), and that the requirements of parachute jumping suggest clear thinking is needed, it might be advisable to try to reduce anxiety prior to a jump. We suggest that an

appropriate emotion regulation intervention would seek to limit the use of strategies intended to increase unpleasant emotions. It is proposed that for novice parachutists, the act of jumping out of a plane carries sufficient threat and as a consequence is likely to activate sufficient levels of anxiety. A reduction in the use of strategies to reduce unpleasant emotion may result in less anxiety, and liberate cognitive resources that could be allocated towards other task demands. Instructors can play a key role in reducing the parachutists' use of strategies to increase unpleasant emotions, by perhaps highlighting positive aspects of the situation for the parachutists (e.g., reminding parachutists of previous successes experienced during training or displaying confidence in their ability).

We propose that the model of Eccles and Feltovich (2008) has value in this context. Evidence from the present study shows that athletes engage in strategies to increase pleasant emotions in sport, but despite reporting negative emotions of a similar intensity, did not apply these strategies to parachute jumping. We suggest that the use of psychological skills training might therefore augment existing training, and particularly, encouraging parachutists to anticipate the emotions that they are likely to experience before jumping and begin to develop self-regulating strategies. By encouraging the transfer of psychological skills from one domain to another, the rate of learning might be increased, as is the individual's confidence in their ability to control emotions before undertaking novel tasks of critical importance.

An interesting observation from the present study is evidence suggesting that basic military training evokes a similar emotional profile to the emotions novice parachutists experience in the moments preceding their first jump, especially in the case of anxiety. This finding lends support to the notion that the cognitive and physiological responses elicited by intense emotions in the military parallels those identified in sport (Janelle & Hatfield, 2008). The ability to effectively regulate emotions is central to military performance outcomes and the success of future missions (Janelle & Hatfield, 2008). The performance demands and

associated emotions experienced by novice parachutists prior to their first jump appear to be unique and not easily replicated; consequently, developing realistic training protocols presents a challenge to military personnel responsible for providing parachute tuition. The above data support the idea that sport can serve as a training ground for developing the transferable skills that position a soldier to be successful in combat (Zinsser et al., 2004).

Although the results of the present study are promising, the research design presents some limitations. Firstly, the measures of emotion and emotion regulation may suffer from weaknesses outlined by previous research in regards to the retrospective recall of emotions (e.g., Parkinson, Briner, Reynolds, & Totterdell, 1995). That is, the accuracy of momentary emotional experiences has been found to suffer from degradation when the delay in recall is over a long period of time (Barrett, 1997). However, in the present study participants' accuracy of their reported feelings immediately before the jump would have suffered minimal degradation as the delay in recall was between one and two hours. Moreover, the autobiographical recall of previous moods can suffer from a bias towards mood congruence that is influenced by current emotional states (Parrott, 1991; Terry, Stevens, & Lane, 2005). In the present study, this does not appear to have been a contributing factor to the novice parachutists responses to the emotion measures as their reported emotional profiles of previous emotional experiences (i.e., sport, work, life in general) displayed significant differences that were unique to each situation.

A second potential limitation to the present study relates to socially desirable responding. In particular, the performance environments of sport and the military can influence the likelihood of emotional responses being expressed in a desirable fashion (Dunn, Smith, & Smoll, 2001; Lönnqvist, Paunonen, Tuulio-Henriksson, Lönnqvist, & Verkasalo, 2007). For example, the competitive circumstances of sport may predispose athletes to "fake good" in their responses in order to hide emotional vulnerabilities from their competition

and/or themselves. Moreover, in the military displaying emotions that could be perceived to reflect weakness may have implications for group morale and judgement by superior officers. However in the present study, participants were informed that all responses were kept confidential and there was no benefit to be gained from socially-desirable responding.

TAKE HOME MESSAGE

The key message emanating from this study is that the soldiers experience intense emotions in a range of different situations and that emotion regulation strategies differ between these.

- We suggest that instructors encourage soldiers to become cognisant of their beliefs in emotions that help performance and the strategies that they use to bring about these emotions.
- Once this has been done, soldiers will have a greater awareness of similarities and differences between emotion regulation strategies used in different situations and how these could transfer.

Given the intensity of emotion in parachuting and likely in other domains of military service, everyday life and basic training may not prepare soldiers to regulate emotions in every aspect of their role. Participation in sport might help prepare soldiers given the intense emotions also experienced in that domain. In summary, the present study provides support for the utility of cross-disciplinary research between sport and the military. In particular, the investigation of emotions and emotion regulation across various performance domains provides insight into the emotional experiences of novice parachutists. The similar levels of anxiety between sport and the time preceding the novice parachutist completing their first parachute jump suggests that emotions and emotion regulation may have a significant role in determining performance outcomes. These findings support the notion that conducting theoretically-driven research across performance domains will assist in the development of effective training protocols in the military.

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Table 1

Emotions experienced between different situations

	sport		work		4 weeks		1 hour		before				
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*	*Sig.*	*Partial Eta*^{2}
Happy	4.47	1.60	3.53	2.03	5.13	1.47	4.72	1.40	4.71	1.63	14.26	0.00	0.14
Gloomy	2.35	1.46	2.54	1.73	2.35	1.17	2.22	1.48	1.90	1.54	2.55	0.04	0.03
Anxious	5.10	1.60	3.94	1.87	4.30	1.63	5.19	1.69	5.21	1.65	13.03	0.00	0.13
Angry	2.54	1.87	3.57	2.35	2.96	1.72	1.83	1.38	1.28	0.77	28.58	0.00	0.25
Calm	3.57	1.52	2.99	1.56	4.20	1.52	3.62	1.62	3.66	4.34	3.22	0.01	0.04
Energetic	5.54	1.41	4.56	1.81	5.19	1.44	4.84	1.51	5.39	1.58	7.56	0.00	0.08
Sluggish	1.87	1.36	2.08	1.45	2.21	1.33	2.07	1.46	1.49	1.09	4.53	0.00	0.05

Table 2

Differences in emotions between situations: Comparison between pre-parachute jumping and other situations

Emotion	Sport *F*	Sport *Partial Eta²*	Work *F*	Work *Partial Eta²*	4 weeks *F*	4 weeks *Partial Eta²*
Immediately before jumping						
Happy	2.12	0.02	20.55	0.18	3.29	0.03
Gloomy	6.66	0.07	6.48	0.07	7.14	0.07
Anxious	1.02	0.01	23.15	0.20	14.75	0.14
Calm	0.08	0.00	2.11	0.02	1.35	0.01
Energetic	0.02	0.00	15.26	0.14	1.91	0.02
Sluggish	5.61	0.06	8.72	0.09	20.49	0.18
Anger	40.37	0.30	74.33	0.45	75.74	0.45
An hour before jumping						
Happy	1.83	0.02	33.69	0.28	5.95	0.06
Gloomy	0.21	0.00	2.59	0.03	0.35	0.00
Anxious	0.34	0.00	32.70	0.27	24.95	0.22
Calm	0.10	0.00	11.20	0.11	9.85	0.10
Energetic	16.87	0.16	1.66	0.02	5.70	0.06
Sluggish	1.17	0.01	0.00	0.00	0.69	0.01
Anger	10.63	0.11	47.79	0.35	27.83	0.24

Table 3

Emotion regulation strategies used between different situations

	Sport		*Work*		*4 weeks*		*1 hour*		*Immediately pre-jump*			
	M	SD	M	SD	M	SD	M	SD	M	SD	F	Partial Eta^2
Increase pleasant emotions	3.44	0.79	3.07	0.81	3.17	0.85	3.17	0.89	2.71	0.99	13.94*	0.13
Increase unpleasant emotions	1.56	0.77	1.63	0.80	1.64	0.73	3.28	1.75	1.23	0.54	97.28*	0.52

- $P < .001$

Table 4

Differences in emotion regulation strategy use between different situations

Emotion	Sport F	Partial Eta^2	Work F	Partial Eta^2	4 weeks F	Partial Eta^2
Immediately before jumping						
Increase pleasant emotions	32.26	0.26	7.26	0.07	11.36	0.11
Increase unpleasant emotions	18.05	0.16	18.45	0.17	22.53	0.20
An hour before jumping						
Increase pleasant emotions	8.12	0.08	1.66	0.02	0.00	0.00
Increase unpleasant emotions	118.21	0.57	137.75	0.60	147.14	0.62

Figure 1

Emotional responses between different situations

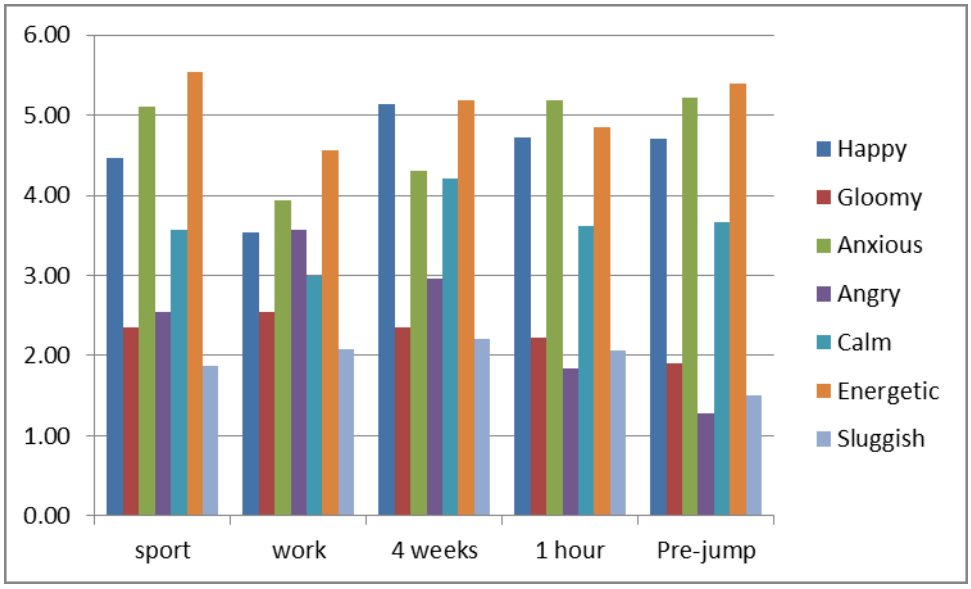

Figure 2

Emotions and emotion regulation strategies across situations