

Achievement involvement and stress coping in elite wrestling

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Abstract

The present study explored the relationship between task involvement and coping with stress in elite competition. Participants were 82 elite wrestlers, both male (n=60) and female (n= 22) from four different European countries, age 16-37. The data for the study were gathered over an 18-month period, and both qualitative in-depth interviews (n=6) and quantitative approaches were used. The quantitative study measured motivation from an Achievement Goal Theory (AGT) perspective: achievement goal orientation (Perception of Success Questionnaire; POSQ), perceptions of the motivational climate (Perceived Motivational Climate in Sport Questionnaire; PMCSQ) and coping strategies (Brief COPE). The qualitative part explored motivation and coping in depth. As expected, task involved wrestlers coped better in competitive situations due to their use of more adaptive coping strategies. The wrestlers' experiences seemingly make them prefer to stay task involved and use adaptive coping strategies (both problem-focused and emotion-focused strategies) in competition.

Introduction

The ability to cope with stress in competition is an integral part of successful performance in elite sport, and athletes must develop a range of cognitive and behavioural coping skills to deal with stress (e.g., Dugdale, Eklund, & Gordon, 2002; Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999). The descriptions given by athletes when asked how they cope with stressful competitions are often vague, because some athletes are not conscious of their coping efforts. There are many situations that elite athletes must cope with, where athletes may feel that dealing with a stressful experience during competition is either threatening or challenging. Also, different sports have different sources of stress and consequently require special strategies to cope successfully. Recently, several studies have identified and examined different sources of stress and how athletes cope with these (Gould, Eklund, & Jackson, 1993; Gould, Finch, & Jackson, 1993; Holt & Hogg, 2002; Pensgaard & Roberts, 2003).

Coping

In its simplest form, coping is the way athletes attempt to deal with demands such as choking, stress, injury, high expectations and time management – just to mention a few. Coping consists of learned behavioural responses that successfully lower arousal by neutralizing or minimizing the importance of a threatening condition (Lazarus & Folkman, 1984). Coping has been defined in a number of different ways, but the dominant model today is the transactional process perspective (Giacobbi, Lynn, Wetherington, Jenkins, Bodendorf, & Langley, 2004; Hardy, Jones, & Gould, 1996). According to this view, Lazarus and Folkman (1984) define coping as “constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (p. 141). Coping is dynamic, and a wide range of responses are included in the model. This perspective also focuses on personal factors as well as on an understanding of the situation or the context in which coping takes place.

Numerous coping behaviours or strategies can be exhibited as a response to stressful situations. As a result, broader categories of coping behaviours have been developed to lend a hand in discussion of research findings. Lazarus and Folkman (1984) made a basic distinction between the widely used problem-focused and emotion-focused coping categories (Hardy et al., 1996). These two fundamental types of coping are based on the intention or function of coping efforts (Compas, Banez, Malcarne, & Worsham, 1991). The distinction has been used by many researchers (e.g., Crocker & Graham, 1995; Crocker & Isaak, 1997; Giacobbi et al., 2004; Lazarus & Folkman, 1984; McLeod, Kirby, & Madden, 1994; Pensgaard, 1997;

Pensgaard & Roberts, 2003), and goes between strategies that manage or alter the problem and strategies which regulate the emotional pressure the problem is causing. Other higher order concepts, such as approach and avoidance coping have been used as well (e.g., Roth & Cohen, 1986), and this dichotomy was further developed and used by Anshel, Kim, Kim, Chang and Eom (2001).

While the dichotomization of coping strategies may serve as a conceptual guide, researchers quickly realized that two dimensions were inadequate to describe and measure the complexity of coping (Crocker & Graham, 1995; Leventhal, Suls, & Leventhal, 1993). Nevertheless, because of its extensive use in the extant literature and ease of use, the concepts problem-focused and emotional-focused coping strategies are used in this study. In response to criticism about having only two dimensions, the concepts adaptive and maladaptive coping strategies are discussed where appropriate (Carver, Scheier, & Weintraub, 1989). Adaptive strategies include coping that help the athletes better cope with competitive stress, whereas maladaptive strategies reduce their chance to perform well. Adaptive strategies may therefore include both problem-focused and emotional-focused strategies.

Several scholars (e.g., Lazarus, 1991; Roberts, 1986) have underscored the motivational implications of the personal-environment relationship: “How the person copes depends not only on the coping possibilities and how they are appraised but also on what a person wants to accomplish in the encounter” (Lazarus, 1991, p. 115). In other words, the goals that athletes seek in a particular context influence their coping options and strategies. Lazarus (1991) identified the relatively stable motivational dispositions and the motivational influences of the environment. The transactional model of Lazarus and Folkman (1984) places importance on the “mutually, bi-directional relationship” between the person and the environment (p. 325). This relationship has parallels with goal orientations and the motivational climate (e.g., Roberts, 2001). Recently, social-cognitive theories such as achievement goal theory have been used to examine the relationship between motivation and coping as a mediator of emotional outcomes in physical settings (e.g., Ntoumanis, Biddle, & Haddock, 1999).

Achievement Goal Theory (AGT)

Achievement Goal Theory (AGT; e.g., Ames, 1992; Duda & Hall, 2001; Nicholls, 1984, 1989; Roberts, 2001; Roberts, Treasure, & Kavussanu, 1997) assumes that the individual is an intentional, goal-directed organism that strives to demonstrate ability or competence in achievement situations. In such situations, individuals are assumed to function in either a state of task or ego goal involvement at any one time, however the state of

involvement may change quickly (Gernigon, d'Arripe-Longueville, Delignières, & Ninot, 2004). The usual assumption is that an athlete can only be in one state of involvement at a time (Nicholls, 1989; Roberts, 2001; Williams, 1998). Comprising each state of goal involvement are both dispositional and situational motivational factors. The dispositional factors are termed achievement goal orientations, which are individual difference variables that reflect the person adapting task or ego involving criteria of success. When an athlete is task oriented, the focus is on demonstrating mastery of tasks, and perceptions of ability are typically self-referenced. An ego oriented athlete, on the other hand, is preoccupied with winning and therefore interested in demonstrating superior ability to others and perceived ability is characteristically normatively referenced.

Situational factors also influence whether an athlete adopts a state of task involvement or ego involvement, and research has indicated that situational goal structures may supersede one's goal orientation regarding the influence on affect and behaviour in competitive sport (e.g., Roberts, 2001). The perceived motivational climate (Ames & Archer, 1988) is the athlete's perception of the situational cues or the perception of the motivational emphases of other individuals on the team, such as the coach and the team-members. Similar to goal orientations, perceptions of the motivational climate are assumed to reflect task and/or ego involving criteria of success and failure, and are termed mastery and performance climate, respectively. When a mastery climate is perceived, then the athlete is more likely to be task involved, and conversely, when a performance climate is perceived, the athlete is more likely to be ego involved in sport.

Task involvement and coping

Achievement goal theory has been used to test the theoretical assumptions embedded in Lazarus and Folkman's (1984) work on emotion and coping. Ntoumanis et al. (1999) used the theoretical framework to test whether British college level athletes coped differently depending on whether or not a task involving climate was perceived. They found that both task orientation and perceptions of a task-involving climate were positively associated with the reported use of problem-focused coping strategies such as increased effort and the suppression of competing activities. On the other hand, Ntoumanis et al. (1999) found that ego orientation and perceptions of an ego-involving climate were coupled with emotion-focused coping together with a tendency to disengage during stress. These results were in concert with the results in a study by Kim and Duda (1998).

The findings presented above indicate a possible advantage in maintaining a state of task involvement. Our purpose was to examine this assumption with elite athletes, where it

was hypothesized that task involvement is associated with the use of more adaptive and more problem-focused coping strategies. Ego involvement, on the other hand, was hypothesized to be associated with maladaptive and emotion focused strategies. In addition, we wished to select a sample of the participants in order to probe into the particular strategies selected by wrestlers in elite competition through qualitative interviews.

Method

We used both quantitative and qualitative data to investigate our hypotheses. The quantitative data were used to examine possible associations of task and ego involvement on the coping strategies of the wrestlers who were the participants in the study. We then used qualitative procedures to probe more deeply into the specific task and ego mechanisms that prevail in elite competitive wrestling. This triangulation of methods is a tool both to grasp the complexity of task involvement influences on coping, as well as to increase the credibility of a study as a form of comparative analysis (Patton, 2002). Previous qualitative studies (Gould, Eklund, & Jackson, 1993; Gould, Finch, & Jackson, 1993) have revealed that the categories which emerged through content analyses align with the categories and subscales contained in the Brief COPE, and this procedure may therefore serve as an additional form of validity of the results in the present study.

Participants and procedure

82 wrestlers (male= 60, female=22) from Norway, Denmark, Sweden and Poland participated in this study (see table 1). All wrestlers were currently on their national teams. Within this sample we have distinguished between international elite, which is consistently having been among the best 10 in the world in their weight class, and national elite, which is belonging to the national team. Consequently, the *elite wrestlers* included both World Champion and Olympic Champion title holders. The data were gathered over a period of 18 months (March 2003-October 2004) at major championship sites or training camps. The age of the participants ranged from 16-37, with a mean of 21.8 years (SD 5.07).

[Table 1 here]

An influential coach helped the first author to make initial contact with the coaches and wrestlers. After securing agreement to participate, to which all athletes agreed, the athletes were informed of the focus of the study and it was made clear that participation was voluntary. When agreeing to participate, the first author gave a questionnaire package to the wrestlers. The package included both motivation and stress management questionnaires.

Measurement

The specific questionnaires were Perception of Success Questionnaire (POSQ; Roberts & Balague, 1989; Roberts, Treasure, & Balague, 1998), Perceived Motivational Climate Questionnaire (PMCSQ; Seifriz, Duda, & Chi, 1992) and the Brief COPE (Carver, 1997). The Norwegian versions of the questionnaires have been translated from English previously and have demonstrated adequate validity and reliability (e.g., Pensgaard & Roberts, 2002; Roberts & Ommundsen, 1996). The Norwegian questionnaires were given to the Scandinavian wrestlers as Danish and Swedish athletes can read Norwegian easily. For the Polish wrestlers, the scales were translated into Polish using the translation – back translation procedure, and the translation procedure was in accordance with the guidelines given by De la Puente and colleagues (De la Puente, Pan, & Rose, 2004). The in-depth interviews took place at a major championship site (the European Championship, Haparanda, 2004) or at training camps in Norway, Sweden and Poland prior to the Olympic Games, Athens, 2004.

POSQ, the Norwegian version of the Perception of Success Questionnaire (Roberts & Ommundsen, 1996) was used to measure dispositional goal orientations (Roberts & Balague, 1989; Roberts et al., 1998). This questionnaire measures task and ego goal orientations in sport, with phrases such as “I work hard” and “I win” to reflect these orientations. Responses are indicated on a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). The internal consistency of the scale was adequate in the present study, with Cronbach’s alpha for ego orientation ($\alpha = .88$) and for task orientation ($\alpha = .79$).

PMCSQ, the Perceived Motivational Climate in Sport Questionnaire (Seifriz et al., 1992) consists of two valid and reliable subscales, the Mastery and Performance Climate scales. The questionnaire has been translated to Norwegian previously and has demonstrated acceptable validity and reliability (Roberts & Ommundsen, 1996). Pensgaard (1997) modified the questionnaire in order to use it on athletes not practicing a team sport, making it an 18 item questionnaire. The athletes were told to reflect upon how they experience the climate in their team, and “on this team...” preceded each item. For elite athletes, it was natural to consider the national team as a group because they practiced together. The internal consistency (Cronbach’s alpha) for the scale was adequate for the performance climate subscale ($\alpha = .89$), and although acceptable, it could have been better for the mastery climate subscale ($\alpha = .63$).

The Brief COPE (Carver, 1997) consists of 14 scales of different coping strategies with two items per scale, for a total of 28 items. Each item is scored on a 4-point Likert scale and they responded to “how often” they had used the different coping strategies to cope with stress (1= I haven’t been doing this at all, to 4= I have been doing this a lot). The Brief COPE

is a shortened version of the COPE inventory (Carver et al., 1989), and the COPE inventory has been recommended by several authors as *the* measure of coping strategies (Giacobbi & Weinberg, 2000; Gould, Eklund, & Jackson, 1993; Hardy et al., 1996; Pensgaard, 1997). In order to make the research protocol shorter, Carver (1997) regards Brief-COPE to be an adequate replacement. In order to get an overview and group the 14 strategies, two scores were derived from the Brief COPE. We chose to use the concepts *adaptive* and *maladaptive* coping strategies (Carver et al., 1989; Hastings & Brown, 2002). A summed score of ratings typically identified as adaptive (acceptance, active coping, planning, religion, using emotional and instrumental support and humour) was the metric used in the analyses and the same procedure was followed for the maladaptive coping strategies (behavioural disengagement, venting, self-distraction, substance use, self-blame and denial). The strategy adaptive coping had adequate reliability ($\alpha = .72$), while the maladaptive coping strategies failed to reach an acceptable internal consistency ($\alpha = .48$). Thus, we created two higher order factors from the Brief COPE.

Observations and interview protocol

Qualitative methodology consists of three kinds of data collection; in-depth and open-ended interviews, direct observations and written documents (Patton, 1990). In the present study, the two first data collection methods were used, though an emphasis was on the former strategy. Because the first author spent a great deal of time in the wrestling setting during training camps and competition, it provided an opportunity to observe whether athlete statements were correct, or may have been influenced by social desirability which has been found in relation to coping strategies previously (Weichman, Smith, Smoll, & Ptacek, 2000).

Several ways of recording observations were used. Personal impressions were written down in a notebook together with interpretative ideas, a process where the important aspects would stand out. These notes were later important when preparing the interview guide and as a hermeneutic background for us to understand what the wrestlers described as stressful situations during the interviews, such as weight control, the competitive draw of opponents, and unfair referees. In many ways, part of this project therefore turned out to be a field study, using ideographic research as recommended by Martens (1987).

Finally, six elite athletes were interviewed. They may be regarded as a strategic sample as described by Patton (1990). The youngest of the interviewees was 21 years old and the oldest 37, from three of the nations. Two of them were former World Champions, one was both former World and Olympic Champion. The three others have consistently been among

the best 10 in the world in their weight category, and all competed at the 2004 Olympic Games.

Qualitative interviewing usually refers to in-depth, semi-structured or loosely structured forms of interviewing (Mason, 1996). The approach chosen in this study is what Patton (1990, 2002) labels *the general interview guide*, an inductively analytical approach that opens with a list of questions or issues explored during the course of the interview. The guide was prepared to ensure that we would obtain the same information from the different athletes, without losing the spontaneity of the conversation by being bound up to do the questions in the same order. The guide was based on the important questions inherent in the study dealing with coping mechanisms and the perception of the appropriate motivational perspective.

Each interview lasted for approximately 40-50 minutes. The interviews with the Polish athletes were conducted in English, and some language problems occurred but were solved by using a translator nearby, that could help on these wrestlers' request. The interviewer tried to remain as open as possible, in order to let athletes bring up major topics themselves.

All the interviews were taped, and they were transcribed verbatim. We listened several times to every tape, in order to get all the details right. All the time we tried to keep in mind that we were not making a sociolinguistic transcription of the interviews. The interpretation of the data of each wrestler was shared with the wrestler, and in each case the wrestler agreed with the interpretation. The transcriptions were reread and new ideas and suggestions that emerged from the interviews were categorized and analyzed inductively in order to make a comparison of the different themes that athletes mentioned. Then we organized the transcripts into general themes (higher level themes), first order themes, dimensions and raw data themes. This is a common way to organize interviews (Kvale, 1997; Patton, 2002; Scanlan, Ravizza, & Stein, 1989).

Results

In general, our findings supported our hypotheses. Being task involved was associated with the use of more adaptive coping strategies compared to being ego involved. For the overall picture of the most important findings, we present the quantitative data first. Then we expound on these data with the qualitative findings, in order to give a more in-depth knowledge of elite wrestlers' use of coping mechanisms.

Descriptive statistics

In general, the participants were highly task oriented and also perceived a fairly high mastery climate as evidenced by the high mean scores (see table 2). Further, table 2 also

[Table 2 here]

illustrates that these elite athletes reported using more adaptive coping strategies than maladaptive strategies. This was tested by using Cohen's $d = 1.3$, which is regarded as a large effect size. When comparing the means between adaptive and maladaptive coping strategies, a paired t-test found a significant difference between the two variables ($t=12.213$, $df=81$, $p<.001$). Gender differences in the use of coping strategies have been reported (e.g., Anshel, Jamieson, & Raviv, 2001; Crocker & Graham, 1995). Thus, we tested for possible gender differences, using Multivariate Analysis of Variance (MANOVA) for the variables of interest. Notably, there were no significant gender differences in coping strategies (Wilk's Lambda = .76, $F(18; 63) = 1.117$, $p = .36$). Therefore, the rest of the analyses were conducted with male and female data collapsed.

The quantitative relationship between task involvement and coping

Simple correlation (Pearson's product moment correlation) revealed several significant correlations between personal orientations and perceptions of the motivational climate (2-tailed); an ego orientation and a performance climate were positively correlated (.435, $p<.01$) and task orientation was associated with mastery climate (.358, $p<.01$). A bivariate analysis between mastery climate and performance climate revealed a negative association (-.373, $p<.05$). These were expected findings. Interestingly a positive correlation between ego and task orientation was found (.373, $p<.01$). In table 3, the corresponding orientation and climate (e.g., task orientation with task climate) is presented next to each other (the probable state of involvement), and show the correlations between these and coping.

Task involvement was moderately correlated with the more adaptive and problem-focused coping strategies such as self-distraction, active coping, emotional support, instrumental support and positive reframing (see table 3). Obversely, ego involvement was moderately correlated with denial, positive reframing, acceptance and religion. Positive reframing revealed a significant positive correlation with mastery climate and a negative correlation with performance climate.

[Table 3 here]

To determine if there were any multivariate relationships between perceived motivational climate and coping strategies, and between personal orientations and coping strategies, we conducted canonical correlation analyses. First, performance and mastery climates were used as predictor variables, while the fourteen coping strategies served as criterion variables. A multivariate relationship emerged and revealed two significant functions, Wilk's Lambda = .47, $F(2; 67) = 2.47$, $p<.01$. The canonical loadings show the

variables that contribute the most to the multivariate relationship between motivational climate and coping, and in general the analysis supported the results from the simple correlation analysis.

[Figure 1 here]

Function 1a (high performance/low mastery) had a canonical correlation of .63 ($R^2=.40$) with a redundancy index of 22%. The findings are presented in Figure 1 and show that a high score on perceived performance climate combined with a negative low score on mastery climate is linked with positive scores on denial and religion, and negative scores on positive reframing and acceptance. It supports the assumption that a perceived performance climate is not associated with adaptive coping strategies. The other variables did not reach a meaningful canonical loading, because only canonical correlations above .30 are deemed to be meaningful (Tabachnick & Fidell, 1996).

[Figure 2 here]

Function 1b (high mastery/low performance climate) had a canonical correlation of .46 ($R^2=.21$) with a redundancy index 10%. A high mastery climate combined with a non significant low performance climate score is linked to positive scores on self-distraction, active coping, emotional and instrumental support, positive reframing and planning. Additionally, a positive association for religion and venting of emotions emerged, which was not found in the simple correlations. The findings are presented in Figure 2. We hypothesized that both perceptions of the motivational climate and also achievement orientations of the athletes would reveal a multivariate relationship with coping strategies. However, the canonical correlation test with personal orientation and coping strategies failed to reach significance, which was an unexpected finding.

The qualitative relationship between task involvement and coping

In general, the qualitative results pointed in the same direction as the aforementioned quantitative results. However, the qualitative data provided a deeper insight into the particular coping mechanisms more associated with wrestling than did the quantitative findings. Four of the interviews were conducted in English, and therefore transcribed in English, in the same way as the Nordic interviews were transcribed in Norwegian. When quoting the Nordic athletes, a careful translation was made from the transcripts. Because the Polish wrestlers are not native English speakers even though they all spoke adequate English, we have allowed ourselves to make a few corrections in some of the quotations.

We followed the procedures recommended by Patton (2002), identifying and classifying the items from the interviews inductively. Table 4 illustrates the raw data themes

extracted from the scripts of the interviews. The data were then organized into 9 higher order themes which were further extracted into 3 general dimensions. These three dimensions were classified as: (a) Task involvement in the preparation phase; (b) Coping strategies in competition; and (c) Task involvement in the most stressful situations of a match.

Collectively, the three dimensions cover phases of how athletes cope with competitive stress.

[Table 4 here]

Task involvement in the preparation phase

The hypothesized relationship between task involvement and adaptive coping is most evident in the interviews, for example: “I focus on my tasks, what I am supposed to do in a match. That keeps me from getting stressed and tired out, that keeps me calm”. The wrestlers stated that little details must be repeated every day, and they considered the coach as an important motivating and inspirational source:

I use my brain all the time [during training], if I can't do a move perfectly, I get mad, take time-out and sit down to think it through. I think about how to make it better, because little details are very important. And then the coach can come up to me and help me with small details. If you come to practice just to sweat without thinking, you better stay at home.

To work with details, to stay concentrated and focused seems to be related to athletic success for the wrestlers. Repeatedly, the wrestlers stressed that one should stay task focused and not think too much about winning, however one of them also stated: “You must think of both. Every move you make - makes you one step closer to winning. Every point is one step closer to winning”.

To be mentally prepared was stated to be as important as physical preparation:

Everything will be important, strength, preparations, and tactics and so on. If you are in the final, I think this is important [pointing to his head]. Good thinking will be very important. And then, if you train a lot before [major competitions]. Training beforehand is very important. You win before the Olympics; the job is done before you arrive. If you do a good job, strong, before a competition, then you will know that you are prepared. And you will probably win. That will be the result of your job.

To be well prepared for the athletes generally meant the same as never losing sight of their goal and always focusing on the job they were doing in order to reach their goal. Years of practice have given them the tools for how to succeed in a competition, and how they use self-dialogue to push themselves demonstrating the hard work behind success.

I had spent months in preparation for this tournament, and this was a very important match – I needed to win in order to be qualified for the Olympics. I recall it was 2-2 after full time, and I was getting really tired. But this is what you have worked for

through the whole season; you cannot be tired now, so therefore I managed to give that little extra. Keep going – I repeatedly told myself.

Not only problem-focused coping strategies were frequently cited to be used by the elite wrestlers, many of the emotional-adaptive strategies were also underlined as important by the athletes. Often the social support from the team was viewed upon as crucial, and as one elite wrestler told us: “it is better to be a team, you are more than one together towards a goal, you work together to make it – which creates a positive atmosphere”. One wrestler reflecting back on the preparations for a previous Olympics, stated that he thought that being on a small team was stressful and hard to cope with:

The preparation was really good, and we followed the plan with few adjustments. And we went to many training-camps all over Europe. I had two big competitions after the European Championship, and it went a little up and down. I felt we were doing everything right, but it was so boring that I was the only athlete. I wasn't tired of my coach – he didn't get on my nerves, I was just tired of it being the two of us all the time. When I was in a bad mood, there was only one person to talk to. [...] Finally we had a talk about it, at a training camp in Germany where I felt really bad about everything; training, weight control and my general situation. Then we took a talk, he told me about his similar experience of a similar situation, it cleared the air and I managed to focus on how to make my situation better.

Coping strategies in competition

Without a doubt, elite athletes have sophisticated plans and automated routines for almost everything. With no exception, the wrestlers in the present study claimed that they had a special strategy: “I have a special strategy, I got to do things my way – and it usually works”. But none of them were especially concrete when talking about “their” strategy or to explain what it was. Their strategy mostly consisted of routines, which is a result of trying, failing and succeeding through as many as 20 years; and may be summed up as “focus thoughts on task”, and deal with one problem at a time:

I am a calm person, work methodically with problems. I have participated in many competitions, you kind of get into the same rhythm. There are things you cannot change, and you might as well stop worrying about them at once, and some things just happen. You must focus on the things that you can do something about – like what you do on the mat.

It might also seem as automated routines have another advantage, they help you not to think and stay focused and concentrated:

You don't think much in the matches you win. At this level it all happens automatically, I think it is a good thing that I don't think too much [...] But in my worst matches I can recall that I thought *this is going straight to hell*. Actually I am no good at all to do this. If I feel that the match is not going well, something which is

actually possible after the first minute, but you got to work. It is very de-motivating not to score on less good wrestlers.[...] I have also noticed that in more local competitions I have lost matches with opponents that I always beat in major competitions, I was not concentrated and prepared. I must stay focused.

To stay concentrated until the match is over was another repetitive theme, one must never take a victory for granted:

If you are not concentrated, you have nothing to do at the mat. I know how important it is, but it does happen that I lose my concentration. I have lost matches in the last second because of my lack of concentration. It has happened that I think the match is over, and thenoops.

Besides keeping the correct focus and totally concentrating about the job, visualization was mentioned as an important coping strategy. All of them mentioned that they go through the match the last minutes before competition in order not to get stressed:

I always go through the match in my head just before the start. I only focus on the match, try to shut out everything else. Usually I know what my opponent looks like, and then I picture him and me and how the match may turn out; tempo, how I may respond to his move, how I'll get him down – I picture the complete match in my head, and I know that after one minute, one's called off passive and must get down in par terre, and then I focus on how I can get an opening.

Task involvement in the most stressful situations of a match

During the interviews, we always asked them about major sources of stress in competitions and how they deal/cope with them. The referee, weight control and the competitor draw in tournaments were some of the most stressful parts of wrestling according to the wrestlers.

Most wrestlers do at times question referees' decisions, and to them it may even feel like they are fighting with them:

Sometimes they make bad decisions, and you must fight both against your opponent and the referee. If you don't have the referee on your side, then there are two that you have to fight. Then it is important not to lose your head, you must make your points more clearly, so there are no doubts about them.

Making their techniques more clear was frequently mentioned as a challenge.

However, the biggest challenge with not having the referee on their side, was to stay focused on the task:

It is not easy to distract me, but if I get a wrong decision against me, I get really pissed. I think I have lost my concentration a few times when that has happened. I may start screaming and yelling, and it takes time to get myself back on track. I was worse when I was younger, then I wanted to beat the referees. But you get older in your head, and you learn that to get mad won't help [...]. During the last Olympics I had a really bad experience with the referees in one of the matches. We believe that the other team had bought the referee group, because a different group showed up than the one we

expected. Then 15 minutes of argument started, and I guess it did something with my concentration. “*What the hell is happening?*” I remember I thought, and my opponent was just standing there laughing. We went up and down on the mat three times before the match started, it was crazy. I have no proof that the referee group was bought, and I cannot blame the referee for the loss, I kept on telling the media that I lost to a better wrestler. I guess I was concentrated when the match started, but then he got a score that he shouldn’t have, and then I completely lost my head. And suddenly both your leader and coach are up on the mat with you – both of them yelling at the referee.

This long quotation demonstrates two things. First that the referee could be a distraction for a wrestler who felt he was prepared for everything except the referee; secondly, that coping with this unforeseen event is something you learn how to deal with through experience. Therefore, the older and more experienced wrestlers emphasized that anger was not the right response when they felt that the referee was not on their side.

The wrestlers also had different strategies to deal with such situations; “If the referee is wrong, then I can get really mad at him. But at the next whistle, I use that as a signal to concentrate again. One cannot wrestle well and be angry. My aim to win was a help with my concentration”.

Weight-control is one of the aspects that elite athletes do not talk that much about. The interviewed wrestlers make their weight in time without stress:

I have never failed my weight class. It is stressing, and we do get help with the diet. I have to lose between 10-11 kg, but I have routines and I know my body. But sometimes I get really hungry for something sweet. But this is very individual, some use 4 months, but I have my own way. I try to avoid fat and unhealthy food during this period.

The interesting question is of course; how do you eat normally, practice twice a day and still reduce your weight by 11 kg. Losing weight is difficult for many wrestlers, and 11 kg is not an exception. Experience is a helping factor. How they do it is individual, mostly they informed the interviewer that they had their own special routines that they followed before every competition. To use 4 weeks or 4 months is individual, and it appears that the wrestlers fighting in the lowest weight categories prefer to use a longer time on the reduction. The wrestlers repeated that if one loses too quickly, then the wrestlers lose energy, and if they reach match weight too soon, they will have a hard time eating up to the competition day.

One of the athletes chose to use 4 months under professional help in the Federation before a major tournament, but:

It was a heavy job. I started out early and got professional help with my diet. It was OK, because I wasn’t hungry all the time. When dieting, you lose a lot of energy if

you keep thinking “what am I eating, when is the next meal etc. That puts restrictions on me, and I feel it takes lots of energy too.

The athletes repeatedly underlined that how you do your weight control is individual, and that it may be a stressful aspect of the preparation for competition. However, the wrestlers reported that the right focus, experience and routines may make this part of the preparation less stressful.

In major competitions, much tension is connected with the drawing the night before the first match:

I usually start to think strategy the night before major matches, after the drawing. Then you become nervous when you know who you will meet. When you go to bed, all you can think about is wrestling movements. You visualize yourself doing the lift perfectly.

Besides watching videos of their opponents, they also “try to remember what they did the last time we met, because I have seen most of them compete earlier. You kind of spend your time thinking and rethinking what to do”. While the wrestler is doing this, the coach and support team around him/her will usually keep on discussing whether it is an easy or hard pool, good or bad drawing etc. This kind of conversation may be stressful for the wrestler while trying to concentrate on the right moves; “they all said it was an easy pool, but I wasn’t so sure”.

When thinking back on a drawing, one of them expressed mixed feelings when he heard which pool he was in:

I was happy with the drawing; I could have ended in a worse pool. There was no clear favourite in the pool, but they were all good wrestlers. But none of those I really feared to meet in the qualification were in my pool. They are all hard to meet, but some are harder than others. [...] I had studied videos [of my opponents] during the summer. So I was ready when we arrived in the village, I knew what all my opponents usually do; in standing and par terre.

Months of preparations are now supposed to pay off for the wrestlers. However, when the wrestlers really think they are prepared, there always seems to be an overlooked aspect that truly takes them by surprise:

I knew that my pool wasn’t an easy one. When you draw a wrestler on his home ground you know that it won’t be easy. He is good, but he has never become Olympic or World Champion before. But it is different when it is your home ground. You may imitate matches and how it will be like to be there, but it is actually impossible to imitate 8000 patriots who are shouting and screaming before you arrive at the mat. It exploded. I have participated in the Olympics before, but I have never experienced anything like that. The stadium exploded – it took off. Completely.

Discussion

Recent research has emphasized the importance of planning, preparation and automated routines to manage stress in a competitive environment (Gould et al., 1999; Dugdale et al., 2002; Orlick & Partington, 1988). Elite athletes need coping mechanisms that allow the individual to cope with all the opportunities and obstacles that they will face in future competition, and this study has pointed out some of the obstacles for athletes, and in particular wrestlers.

The study revealed that task involved wrestlers seem to cope better in competitive situations due to their use of adaptive coping strategies. The relationship between state of involvement and coping was expected and is in concert with previous arguments made by achievement goal theorists (e.g., Ames, 1992; Nicholls, 1989; Roberts, 2001) and with research findings (Ntoumanis et al., 1999; Pensgaard & Roberts, 1995).

First, the simple correlation analyses indicated the expected association between task involvement and coping. The adaptive (e.g., Carver et al., 1989) coping strategies correlated with both task orientation ($p < .05$) and mastery climate ($p < .01$). Of the coping strategies viewed upon as adaptive (acceptance, active coping, planning, religion, emotional support, instrumental support, positive reframing, and humour), active coping, emotional support, instrumental support and positive reframing had a significant association in the expected direction with task involvement. From the results, it is possible to argue that task involvement is moderately correlated with more adaptive and problem-focused strategies.

Secondly, the results from the canonical analyses illustrate that being task involved through being in a mastery climate is preferable in order to cope with competitive pressure, even though it was only the perceived motivational climate that was related with coping strategies in the present study. The canonical correlation analyses support the findings of Ntoumanis et al. (1999) who found that a combination between a high task orientation and perceiving a mastery involving climate was associated positively with social support, increased effort, suppressing of competing activities, and negatively with behavioural disengagement. Further, they found that a high ego orientation combined with perceptions of a performance climate was related positively with venting of emotions, and that there was an association between task orientation and task climate with adaptive coping strategies.

In the present study, the wrestlers who perceived a high performance climate and a low mastery climate reported lower use of adaptive coping strategies than wrestlers perceiving a low performance climate and a high mastery climate. Additionally, high mastery (and low performance) climate was associated with coping strategies such as active coping,

instrumental support, religion, emotional support, positive reframing, planning, venting and self-distraction. One odd finding was the religion subscale which loaded up on both functions, which may indicate that the motivational climate had little influence on that subscale. That impression was confirmed in the interviews, especially as religion seems to be an important part of the Polish Catholic culture. However, taken together, 55% of the total variance in choice of coping strategy was explained by task involvement (task orientation and mastery climate).

An important aspect of the quantitative data in the present study was the relationship between task involvement and the reported use of *both* problem-focused and emotion-focused strategies. The data revealed that the two types of coping strategies work together and affect each other. Previously, research has underlined the importance of only the problem-focused coping strategies (e.g., Gould, Eklund, & Jackson, 1993; Pensgaard & Roberts, 1995), and these coping strategies have also been associated with task orientation and mastery climate (Ntoumanis et al., 1999; Pensgaard & Roberts, 1995). This relationship has often been explained by stating that problem-focused coping strategies are helpful in dealing with and feeling in control of the competitive situation. However, athletes seem to need both problem-focused and emotional-focused strategies in order to display adaptive coping (Anshel, 1990; Lazarus & Folkman, 1984). This is in line with the suggestion of Folkman and Lazarus (1985) that “problem-focused strategies were associated with a specific form of emotion-focused coping, namely, emphasizing the positive” (p. 168). Emphasizing the positive aspects of a stressful encounter facilitates problem-focused coping. The present study, therefore, supports previous research that has indicated that it is too simplistic to assume that problem-focused strategies are always adaptive and emotion-focused coping strategies are always maladaptive (Kim & Duda, 2003).

The qualitative findings gave further support for a relationship between task involvement and adaptive coping. The wrestlers worked methodologically with problems, and routines were highlighted as important. Their routines were the result of trying, failing and succeeding over the years, and may be summed up as: “focus thoughts on task”. The wrestlers had developed automated routines for nearly all the wrestling stress sources such as weight control, the drawing and bad calls from the referee. In the matches they lost, the wrestlers repeated that automated routines and focus on task were typically lost. As one of them said, he started to think: “this is going straight to hell”. Having a focus on the task was also one way to avoid thinking about winning for most of the wrestlers. However, one wrestler claimed that it was not possible to divide a focus on the task with a focus on winning. Without doubt,

to win and become Olympic/World Champion is the motivation to continue the daily training for all of these elite wrestlers interviewed. However, their mental strength seems to come from the way they are able to keep the correct focus and let routines, especially detailed competition plans for tournaments, govern when it matters. And it may be argued that being task involved is a chosen motivational strategy in order to perform well for these wrestlers.

The focus on planning is in concert with the findings of previous research. Olympic medallists adhere to extensive competition plans (Gould, Eklund, & Jackson, 1992; Orlick & Partington, 1988). In many ways, the qualitative data better capture the particular repertoire of coping responses used by the wrestlers, an observation in accord with other recent qualitative studies (e.g., Crocker & Isaak, 1997; Gould, Finch, & Jackson, 1993; Park, 2000; Poczwadowski & Conroy, 2002). We support what has previously been noted by Lazarus (1999, 2000) and Ntoumanis and Biddle (1998); qualitative methodology may be a better tool for trying to provide a basis for understanding coping.

Our results hold potential for the applied practitioner and the coach. Even though the goal orientations of the wrestlers in the study were not associated with coping strategies in the canonical correlation analyses, the perceived motivational climate was associated with adaptive coping. Being in a task involving environment is evidently better in terms of solving achievement related stress and is consistent with previous research (see Ntoumanis et al., 1999; Pensgaard & Roberts, 2003). This means that the sport psychologist and coach may work to establish a mastery climate within the team, thus helping athletes to better solve the various coping demands in elite sports.

The role of the coach as a support person was mentioned several times in the interviews. The long preparation phase for a tournament such as the Olympics revealed that the coach is seen as an important support person, and often the only one for several months for these athletes who spend much of their life in training camps and travelling to elite competitive events. As a result, it may be argued that it is important for the coach to stay task involved and keep the wrestlers in the same state of involvement. One wrestler especially spoke of the advantage he had as a senior wrestler by being taught the “right attitude” at a young age by the coach. With the right guidance from the coach/support team, elite athletes may learn how to utilize their mental preparation routines in a consistent manner when coping with the stress in major competitions.

In conclusion, the findings of this study show that task involvement is associated with the use of problem-focused coping strategies. It may be argued that being task involved is an attribute that seems to be associated with coping strategies that help the athlete to overcome

distractions and develop competence to focus on the essential performance aspects of competing successfully. These findings contradict the claim by some authors (e.g., Hardy et al., 1996) that in order to be a successful elite-performer, one has to be ego oriented, and focus on winning.

Limitations

Only 82 wrestlers participated in the present study. However, by definition, an elite group of wrestlers is not large and a large sample is not feasible. To access as many elite wrestlers as possible, we brought in wrestlers from four different countries. However, the cultural determined differences that are possible (e.g., a more performance oriented climate was found among the Polish elite wrestlers than the Scandinavians) are not addressed in this paper. Research that investigates the cultural determinants to the perception of stress and coping with stress is needed to complete our understanding of the perception of stress and the means to cope with stress.

Perspectives

In conclusion, we propose that elite wrestlers have learned by experience to keep an adaptive state of competitive involvement, i.e., to be task involved and use adaptive (problem-focused and emotional-focused) coping strategies that help them in their sport. Our findings indicate that task involvement is the preferred motivational state of involvement of elite wrestlers when coping with competitive pressure.

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Figure 1 Function 1a - Canonical loadings: High performance climate and low mastery climate and use of coping strategies for all wrestlers

Figure 1

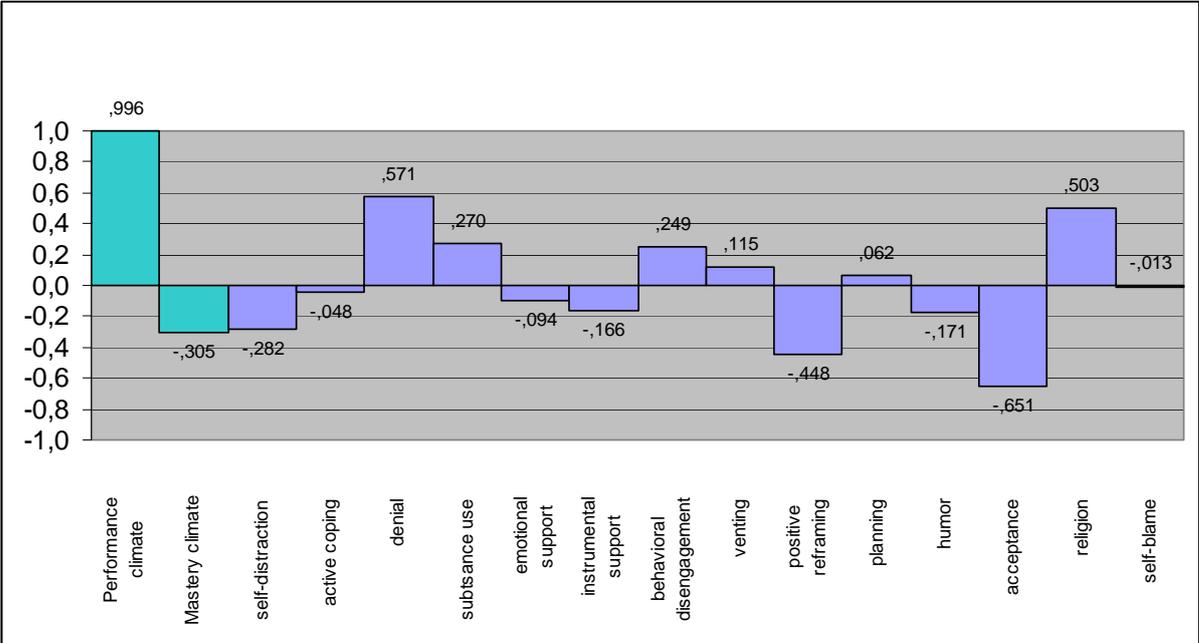


Figure 2: Function 1b - Canonical loadings: High mastery climate and low performance climate and use of coping strategies for all wrestlers

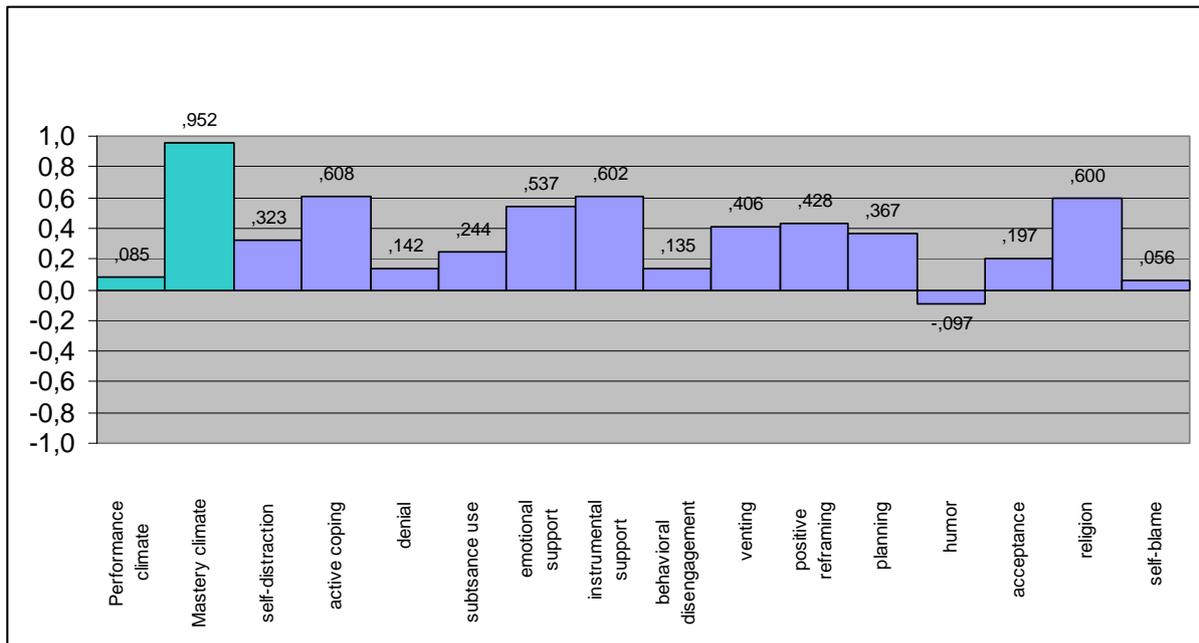


Figure 2

Table 1 Information regarding the athletes' sex, nationality and performance level (elite or national)

| Nationality | WOMEN (n=22) | | MEN (n=60) | |
|-------------|--------------|----------|------------|----------|
| | Elite | National | Elite | National |
| Norwegian | 3 | 15 | 3 | 21 |
| Polish | 1 | 0 | 16 | 15 |
| Swedish | 3 | 0 | 0 | 0 |
| Danish | 0 | 0 | 5 | 0 |

Table 2 Descriptive statistics for Goal orientations, Perceived Motivational Climate, and Coping Strategies

| Variable | Mean | Std. Deviation |
|-------------------------------|-------------|-----------------------|
| GOAL ORIENTATION | | |
| Task | 4.54 | .595 |
| Ego | 3.82 | .938 |
| MOTIVATIONAL CLIMATE | | |
| Mastery | 4.45 | .571 |
| Performance | 3.40 | 1.021 |
| COPING STRATEGIES | | |
| ADAPTIVE STRATEGIES | 2.48 | .451 |
| Acceptance | 2.51 | .718 |
| Active coping | 2.80 | .648 |
| Planning | 2.65 | .727 |
| Religion | 1.78 | .930 |
| Emotional support | 2.62 | .739 |
| Instrumental support | 2.54 | .834 |
| Positive reframing | 2.76 | .704 |
| Humour | 2.15 | .860 |
| MALADAPTIVE STRATEGIES | 1.94 | .368 |
| Behavioural disengagement | 1.59 | .702 |
| Venting | 2.24 | .625 |
| Self-distraction | 2.42 | .687 |
| Substance use | 1.17 | .418 |
| Self-blame | 2.37 | .861 |
| Denial | 1.88 | .735 |

Table 3 Coping strategies correlated with personal dispositions and motivational climate

| Coping strategy correlated with | TASK INVOLVEMENT | | EGO INVOLVEMENT | |
|------------------------------------|---------------------|-----------------|-----------------|------------------------|
| | Task orientation | Mastery climate | Ego orientation | Performance climate |
| Adaptive | .22* | .34** | .03 | -.09 |
| Acceptance | .12 | .21 | -.22* | -.40** |
| Active coping | .16 | .28* | -.02 | -.01 |
| Planning | .02 | .15 | -.05 | .05 |
| Religion | .02 | .17 | .13 | .34** |
| Emotional supp. | .27* | .26* | .14 | -.04 |
| Instrumental sup. | .27* | .30** | .05 | -.08 |
| Positive reframe. | .22 | .28* | -.01 | -.27* |
| Humour | .04 | -.01 | .05 | .11 |
| Maladaptive | .01 | .13 | .06 | .17 |
| Behavioural disengm. | -.16 | .01 | .09 | .16 |
| Venting | .03 | .16 | -.05 | .08 |
| Self-distraction | .33** | .20 | .20 | .17 |
| Substance use | -.07 | .06 | .06 | .18 |
| Self-blame | .05 | .03 | -.07 | -.01 |
| Denial | -.09 | -.04 | .02 | .33** |

*. Correlation is significant at the .05 level (2-tailed)

** . Correlation is significant at the .01 level (2-tailed)

Table 4 An overview of general dimension, higher order themes and raw data

| RAW DATA | HIGHER ORDER THEMES | GENERAL DIMENSIONS |
|---|--|---|
| <i>Read books, write diary, practice at home, been to seminars, professional help through federation, optimistic and positive thinking, don't believe in the benefits from mental training, video analysis, visualization, become more systematic in everyday life.</i> | View of and use of mental techniques | Task involvement in the preparation phase |
| <i>Focus during training and in competition, Constantly perfecting techniques thinking about match and not winning in competition.</i> | Concentration | |
| <i>Visualize matches before competition, Realistic pictures at training, Keeping up your motivation, include music and colours.</i> | Visualization | |
| <i>Routines and system keep you calm before matches, help on concentration, routines for every step in a competition, borderline superstition, importance of religion.</i> | Routines | Coping strategies in competition |
| <i>Important with correct mental attitude, nervousness as a positive factor, you lose if you start thinking about winning, automated routines help you to stay focused, keep focus on task and go through the match the last minutes before start, weak moments, what others do, self-dialogue.</i> | Focus thoughts on task | |
| <i>The benefit of being part of a team, coach as a resource, the need of a team in the preparation phase, coach-athlete relationship, ideal coach.</i> | Team support | |
| <i>The major distraction, experience helps you to cope with it, anger – lose concentration, whistle as a signal, power and control, margins on your side, 80%, weakness of the system, claims of corruption, focus on the things you may control.</i> | Referee | Task involvement in the most stressful situations in connection with a match |
| <i>Stressful aspect, own routines, hunger, 3 weeks – 4 months, experience makes it easier.</i> | Weight control | |
| <i>Think about tactic after the drawing, recall the opponents' moves, discussions about easy and hard pool, overlooked aspects.</i> | Drawing | |
| <i>Play card, play computer chess, keep a focus on task</i> | Using distractions in order to relax between matches | |