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BREAKING TROUGH "THE WALL": AN EXAMINATION OF ELITE ROWERS
AND THEIR EXPERIENCE OF CONQUERING THEIR MENTAL BOUNDARIES.

by

NICOLE JORDENS

(Under the Direction of Noah Gentner)

ABSTRACT

Throughout sports, elite athletes have faced mental boundaries in pursuit of their success. These mental boundaries, often referred to as "The Wall", have typically been investigated in endurance sports. Within the sport of rowing, Baltzell (1999) found that elite rowers coped with their mental boundaries by using; mental preparation, goal setting, social support and psychological well-being. However even though rowing is a sport where athletes experience "The Wall" frequently, modest research has been done to further understand this phenomenon. The purpose of this study was to examine the lived experience of elite rowers when challenged with "The Wall". The study utilized a humanistic theoretical framework. Semi-structured interviews were completed with eight to ten elite rowers. Data analysis procedures will follow Henderson (1992). Six themes emerged from the data analysis: (1) Team Support, (2) Hunger - strong desire for success, (3) Preparation, (4) War between body and mind, (5) Focus, and (6) Confidence. Implications from this study may benefit coaches, athletes, sport psychology consultants, and those who may encounter mental boundaries.

INDEX WORDS: "The Wall"

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by

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DEDICATION

I would like to dedicate this thesis to my family who although far away have managed to support me through thick and thin. Dad, your daily emails, never ending love and encouragement are the words I hear in my head every day. Mom, your warm nature and ability to see light or to calm me down no matter the situation is just plain special. Baigel boy for making me proud to be your sister and for all the laughs. You never cease to put a smile on my face, thank you! To Trac, thank you for guiding me and always allowing me to be me. Having your family near (in more ways than one), has been my comfort. To each member of "The Campbell Clan", you are always close to my heart and in my thoughts. Thank you for the never ending string of stories that you send my way (always a chuckle) and for your constant praise. To my Gran, at eighty three to do all you do the way you do it is nothing short of miraculous. Thank you for showing me the way to live. Other things may change us, but we start and end with family.

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“I am the master of my fate, I am the captain of my soul...” (Henley, 1888).

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CHAPTER 1

INTRODUCTION

In a recent New York Times article an athlete was quoted as saying, “Mental tenacity — and the ability to manage and even thrive on and push through pain — is a key segregator between the mortals and immortals...”(2011, p. D5). As this quote suggests, the ability to deal with pain is a key component to success in many sports. In particular, endurance sports place extreme physical and psychological pressures on athletes for extended periods of time. It is in these unforgiving conditions that athletes are forced to conquer their mental boundaries in their pursuit of success. In elite competition, success is often determined by one athlete pushing through these boundaries with more effort and success than another. In fact, it has been suggested that psychological differences, including the ability to push through pain, between elite competitors often decides the outcome of an event (Shin & Lee, 1994).

In endurance sports, the term "The Wall" has been used to describe these boundaries that athletes encounter. Stevinson and Biddle (1998) describe "The Wall" as "an extremely unpleasant experience with symptoms including; a lack of physical co-ordination, dehydration, nausea, dizziness, an inability to think clearly, and extreme physical and mental weakness" (p. 3). The phenomenon of "Hitting the Wall" is used to describe an athlete encountering this experience. It has been described as "an event distinguished by a rather discrete and poignant onset and duration, and is multidimensional nature" (Buman, Omli, Giacobbi & Brewer, 2008, p. 2).

Investigations into the concept of "The Wall" have typically been in sports such as marathon running (Buman, Britton, Cornelius, 2009; Buman, Omli, Giacobbi & Brewer, 2008;

Stevinson & Biddle, 1998), cycling (LaChausse, 2006; Gat & McWhirter, 1998) and distance swimming (Couture, Tihanyi & St-Aubin, 2009; Hollander & Acevedo, 2000). Although other endurance sports have received some attention when investigating "The Wall", the majority of research has been completed in marathon running. Buman, Omlie, Giacobbi and Brewer (2008) found certain strategies used by marathon runners to cope with "Hitting The Wall". These included many physiological and psychological descriptors that led to race related physical coping efforts (e.g., supplementation and hydration), emotion-focused coping (e.g., social support), and cognitive strategies (e.g., willpower, mental reframing). Much research has specifically focused on the cognitive orientations of marathon runners when they are faced with the challenge of conquering "The Wall". Stevinson and Biddle (1998) investigated the cognitive orientations of marathon runners and found that runners that "Hit The Wall" used more internal dissociation. Association strategies used by athletes involve keeping attention focused on bodily sensations, whereas dissociation would refer to an athlete's attempt to avoid thinking about these sensations. Among other findings in this study were that internal dissociation was related to an earlier onset of the wall, whereas external dissociation related to the wall occurring later in the marathon. Further investigation into the psychological characteristics of elite marathon runners when they are faced with "The Wall", found that elite marathon runners are highly motivated to achieve and are driven primarily by their own intrinsic satisfaction and internal reward system, (Raglin, 2007).

Compared to other endurance sports limited research has investigated rowing as a sporting discipline. Rowing is a strength-endurance type of sport and competition performance depends on factors such as aerobic and anaerobic power, physical power, rowing technique and

mental tactics (Mäestu, Jürimäe & Jürimäe, 2005). The majority of existing performance-related research on rowing has focused on the biomechanics of the motion of rowing and the physiological changes that occur during a rowing session (Kellman & Gunther, 2001, Maestu et. al., 2005). However, along with the growing focus on the mental attributes of elite athletes in other sports, investigation into the psychological factors that rowers may hold has increased.

Morgan and Johnson (1978) were among the first authors to examine the psychological factors involved in rowing. Their study focused on the personality characteristics of successful and unsuccessful rowers. It was concluded that rowers of higher ability scored lower on anxiety, tension, anger, and fatigue and higher on vigor scores than less successful rowers. These findings were similar to those found by Raglin (2007) when investigating elite marathon runners and "The Wall". He found that elite marathon runners generally have less anxiety, depression, and score higher in vigor and emotional stability than less successful runners. Overall, there's evidence to suggest that personality differences among amateur and elite rowers do exist (Williams, 1980).

In addition to possessing certain personality characteristics, many elite athletes develop mental coping strategies in order to perform at an optimum level. Baltzell (1999) found that elite rowers coped mentally in competition by making use of four variables: mental preparation, goal setting, social support and psychological well-being. Among these findings were also distinct differences in the coping strategies used in the most and least effective scenarios. Before the most effective scenarios the rowers reported high levels of self-efficacy and a lack of fear of failure. In contrast, the least effective scenarios rowers were worried about losing and mentally gave up.

Similar to studies seen in marathon running, investigations into the attentional strategies of rowers have also been undertaken. Tenenbaum and Connolley (2008) found that attention significantly shifted from dissociation to association as workload increased. The workload increase also resulted in elevated perceived exertion and heart rate. Similarly, thought classifications validated attention shift as workload increased. These rowers were found to shift their attention from outside distractions to bodily sensations as the workload increased throughout the session. This shift in attention resulted in higher physical demands placed on the rowers.

Other research has investigated the mental preparation strategies used by elite rowers. Barr and Hall (1992) found that imagery was used by the majority of elite rowers prior to competition as a mental preparation strategy. In a qualitative study, Gentner et al., (2008) investigated mental preparation strategies of an Olympic Gold Medalist rower. Among their findings were that the athlete viewed personal mental preparation, high levels of confidence, trust in the team, the ability to keep a positive perception throughout the competition, and the ability to remain “laser focused” as the biggest factors in her success.

Although research has investigated mental preparation strategies of elite rowers, no study has looked specifically at elite rowers "Hitting The Wall" during competition. Through experience and anecdotal evidence, numerous rowers have attested to "Hitting The Wall" at various stages during their rowing careers. Sir Steven Redgrave, winner of five Olympic Gold Rowing Medals in 2000 wrote, “The pain of rowing is the scream of lungs, legs, back and muscles. That's just one stroke. Multiply that by 240 strokes in a 2,000-metre race. There is a

point that hits when it seems unimaginable that you can go on” (Redgrave & Townsend, 2000, p. 134).

Purpose of the Study

Despite this evidence that rowing is a sport where athletes experience "The Wall" frequently, modest research has been conducted to further understand this phenomenon. The purpose of this study was to gain an in-depth understanding of elite rowers when they are challenged with "The Wall".

In order to gain an in-depth understanding of the athletes in this study, qualitative inquiry was used. The Humanistic framework which is concerned with the development of the whole person was utilized throughout this study. This framework gives researchers the ability to advance their knowledge on a particular phenomenon by investigating rich lived experience (Hill, 2001; Patton, 2002). It is important to note that every individual has their own experience and will therefore have their own view of the phenomenon. Since each person has his/her “unique experience”, qualitative inquiry would consider the individual as the expert on their experience (Patton, 2002).

To further investigate and understand this unique experience, semi-structured interviews were utilized as a methodology in this study. This method is concerned with a certain perspective on human existence and a certain mode of investigating that experience (Dale, 1996).

CHAPTER 2

METHODS

Modest investigation has been conducted to further understand the phenomenon of rowers and how they are able to conquer their mental boundaries, specifically when faced with "The Wall". The purpose of this study was therefore to gain an in-depth understanding of the lived experience of elite rowers when they are challenged with "The Wall".

Bias Exploration and Bracketing

In phenomenological research the primary instrument is the researcher. To ensure the researcher does not influence the findings of the study, certain precautions need to be taken. Czech, Wrisberg, Fisher, Thompson & Hayes (2001) note that there is a certain amount of involvement by the researcher that could hinder acquisition of collected data, should the researcher's biases not be considered. Therefore, exploration into the researcher's potential bias was completed through conducting a bracketing interview. In the bracketing interview the researcher followed the exact same procedures as the participants involved the study.

As the primary instrument in the study, it was important for the researcher to become aware of her experience in the topic under investigation. The researcher followed the interview protocol by conducting a bracketing interview to ensure that experiences and bias are known. The person that took the researcher through the interview protocol was a student from Georgia Southern University who has had training in the various qualitative research skills needed to conduct the interview. Although the bracketing interview took place before data collection, it is important to note that bias exploration did take place throughout the course of the study.

Bracketing of one's presuppositions should be a continuous process in qualitative research (Dale, 1996).

The results of the bracketing interview consisted of three themes: (1) Team relationships, (2) Determination, and (3) Responsibility. Theme one, team relationships, was a prominent theme throughout the data. The bond and trust that the researcher had in her rowing partner was a key factor in her experience of "The Wall". Determination, the second theme, dealt with how the researcher when faced with "The Wall" found that she had to decide what she wanted. It was a choice to be able to break through "The Wall" rather than something that occurred naturally. In the final theme, the researcher found that she was ultimately accountable for her actions and would therefore "own" her race. The influence of others and not letting them down was a further responsibility that the researcher experienced.

Pilot study

Although research has examined the psychological characteristics of rowers, no investigation into rowers and their experience of "The Wall" has been found. Therefore in order to test the research questions, one pilot study was conducted. This further allowed the researcher to practice the interview procedure before the official interviews with the participants take place. The interview, collecting of the data and analyzing of the data followed the same procedures as those set out in the actual study methodology.

Four themes emerged from the data collected through the pilot study: (1) Drive, (2) Confidence, (3) Team support, and (4) Focus. In theme one, the participant mentioned the term "drive" throughout the interview while explaining how she was able to break through "The Wall". This drive was seen to be a mixture of determination and willingness to win at various

stages of the race. Confidence, the second theme was the belief that the participant had in her ability as well as the ability of her team mates in order to succeed. This was closely linked to theme three, team support where the participant explained how vital it was to have her team mates behind her all the way. This team bond and trust was a recurring theme that the participant mentioned while explaining how she was able to break through her mental boundaries. Lastly in theme four, the participant spoke about how she was able to distract herself from her pain and focus on the task at hand. She mentioned counting strokes as a means of focusing on one stroke at a time rather than imagining the full distance of the race.

Participants

The participants involved in this study consisted of eight elite rowers. Elite rowers refer to female or male athletes that have been selected for or are currently on a national rowing team and have competed in an international event within the past year. Purposeful sampling was used to select these participants in order to have athletes that are information rich in the topic (Patton, 2002).

Table 1:

Description of Co-participants

Participant number	Athlete Gender	Athlete Age	National Team
1.	Female	22	South Africa
2.	Female	21	South Africa
3.	Female	23	South Africa
4.	Male	22`	South Africa

5.	Male	20	South Africa
6.	Male	19	South Africa
7.	Male	21	South Africa
8.	Female	19	South Africa

Procedures

Semi-structured interviews were utilized in this study when collecting data. This approach was used to examine the essence of human experience and gain a holistic perspective of the lived experience of elite rowers. As researchers in the field of Sport Psychology, we can learn a great deal about the experience of the athletes if we allow them the opportunity to tell us via interviews where they are free to describe their experiences. The semi-structured interview based on the concept of phenomenology appears to be an appropriate tool for such an investigation.

The data collection procedure used in the study was semi-structured interviews conducted separately with each participant. These interviews lasted approximately sixty minutes and were conducted over the telephone.

Recordings took place in a private setting to ensure discretion of the participant. The interview transcripts were coded and placed in a lock box to ensure confidentiality. The code sheet to the pseudonyms and all notes regarding the co-participants were also kept secure for the duration of the study.

The participants were asked to sign a consent form prior to taking part in the study. The consent forms described the exact procedures that took place throughout the study. The informed consent stated; (a) participation in the study is voluntary, (b) they may refuse to be interviewed and withdraw from that study at any point without penalty, (c) all interviews will be recorded

and transcribed, (d) there are no incentives for participation, (e) transcripts of the interviews will be returned for review before analysis, (f) the transcripts will be reviewed by the researcher to establish themes.

Interview protocol

There were several questions used in this semi-structured interview to facilitate the participants' exploration of their experience of "The Wall". The following questions were asked to each participant;

1. In your rowing career what has been your experience of "The Wall"?

- Tell me about a time where you were able to break through "The Wall".
- Tell me about a time where you were unable to break through "The Wall".

2. In your experience what are some mental strategies or techniques that you have used to conquer "The Wall"?

3. Has there ever been a time when someone else has influenced your ability to break through "The Wall"?

Probing questions were asked throughout the interview in order to gain further understanding of the participants' experience. However these questions were stated in a way that would not influence the answers of the participants in any way.

“Could you think of any other examples of _____?”

“You mentioned _____, would you mind elaborating on that?”

The interviews were recorded by the researcher using a Dictaphone. The recordings were then transcribed by the researcher. These were then sent back to each individual participant and they were allowed to check whether the information was correct and if there are any changes or elaborations that needed to take place. The transcripts were then analyzed by the researcher.

Data Analysis

An adaptation of Czech et al. (2004) and Patton (2002) was used in order to analyze the data. This process included four steps as outlined below.

1. Approaching the interviews
 - Transcribing the interview*
 - Obtaining a grasp of the interview*
2. Focusing the data
 - Bracketing the data*
3. Phenomenological reduction
 - Eliminating irrelevant, repetitive, or overlapping data*
 - Verifying the elimination of the data*
 - Member checking*
4. Releasing meanings
 - Forming categories*
 - Identifying the themes*
 - *Research team*
 - Describing the themes*

Throughout the analysis of the data, the constant comparison method was utilized. Patton (2001) described the constant comparison method as a technique used in qualitative research "to group answers . . . to common questions [and] analyze different perspectives on central issues" (p. 376).

Approaching the interviews

Transcription. The data was transcribed verbatim by the researcher. This ensured that the exact information that was relayed by the participants was transcribed accurately.

Obtaining a grasp of the interview. The data was then read and listened to by the researcher several times to allow access to the wholeness of the data. By obtaining a holistic grasp of the information collected, the researcher was able to come to true conclusions about the findings of the study.

Focusing the data

Bracketing the data. Focusing the data was done by clearing and grouping the text that has been collected. Bracketing of the data assisted in this process. It is important for the researcher to identify and bracket out any presuppositions so that the data can be examined in a pure and unclouded manner (Patton, 2002). It is important to note that it is unlikely that this process will bracket out all biases that the researcher may have. Therefore the purpose is rather to allow the researcher to become aware of their personal thoughts and biases prior to the investigation of the phenomenon.

Phenomenological reduction

Eliminating irrelevant, repetitive, or overlapping data. In this step, the researcher created a shortened version of the interview that still retained vital information, words, and thoughts of the participant (Henderson, 1992).

Verifying the elimination of the data. These summaries were then returned to the participants. The participants were given a chance to read what had been summarized. This ensured an accurate interpretation of their experiences have been documented.

Member checking. Throughout the triangulation process, participants were allowed to view the transcribed interviews. If needed they were able to modify and/or expand on what had been recorded to ensure there is a truthful representation of their experiences.

Releasing meanings

Forming categories. Phenomenological reduction was conducted to ensure there were no overlapping themes and the data can become clearer. This was done by forming ‘meaning units’ which are “a segment of text that is comprehensible by itself and contains one idea, episode or piece of information” (Patton, 2002). These units were then grouped into clusters consisting of

different themes. The researcher and her primary advisor were involved in this process to ensure bias is limited.

Identifying themes. The individual interviews were then looked at one by one by the researcher and her advisor to identify themes. The summaries were then compared to each other to identify "global themes" within the data. These "global themes" were coded into categories and given labels that capture the aspects and substance from the given set of data (Czech et al., 2001).

Describing themes. Patton (2002) outlines how to present the results of qualitative data: a) focusing and balancing and b) description and interpretation. Due to the large amount of data that was obtained from the interviews, it was necessary to omit some information to focus on the experience of these elite rowers. The description and interpretation of the data highlighted what was common across the athletes experiences, capturing the essence of the phenomenon.

Henderson (1992) states that throughout the process of a qualitative study, the researcher is required to make efforts to ensure validity and reliability of the resultant description.

Reliability

A major criterion for reliability in qualitative research is trustworthiness. Therefore if the descriptions can be shown to be true, it is considered reliable (Patton, 2002).

To determine the reliability within the study, four questions will be asked of the data:

1. Do the descriptions match the data?
2. Does the structure match the participant's experience?
3. Does the structure emerge from the data?
4. Do others see the description?

(Czech et al. 2004)

Validity

Validity of the instruments will be shown through triangulation. Triangulation will be used to show that the data did not only come from one source and will be able to reduce the impact of potential bias within the data collected. Methods such as the researcher conducting a bracketing interview, member checks, peer debriefing as well as a pilot study that were used in the process of triangulation.

CHAPTER 3

RESULTS

All of the eight co-participants are currently on a national rowing squad and have taken part in at least one international competition where they have represented their country at some point within the past year.

The purpose of this study was to investigate elite rowers' experience of breaking through "The Wall". After conducting qualitative interviews with eight elite rowers analysis of the data revealed six themes : (1) Team Support, (2) Hunger - strong desire for success, (3) Preparation, (4) War between body and mind, (5) Focus, and (6) Confidence. Each of these themes were supported by four or more of the participants involved in the study.

Theme # 1: Team Support

The first theme from the data involved the participants' familiarity with their teammates and how these relationships could impact their experience of "The Wall". The co-participants felt that the strong bond between themselves and the other rowers in their boat helped them get through "The Wall".

One participant found that breaking through his mental boundaries was easier if he trusted that the other members in his boat were giving of their all.

"When I knew someone else was in the boat– it was actually easier racing and easier to push through that because you knew. You knew they were right there" (Co-participant #4)

"So, when you've got those other people in the boat you push harder because you know that they are. So if you can trust your crew, and you trust that they're actually doing their best, then you do your best, whereas if you had a crew that's not really doing it you kind of think, "Well, okay, fine, I can push my ass off but what's the point if they're not going to do it?" So you have to kind of find the right crew whether it's an eight to four, doubles" (Co-participant #4)

Other participants described the influence that their teammates can have on their motivation to continue to push through in a race situation.

"For me it's about my team, if they are not on my side then there is no point in me putting in the work. I need to know they are behind me all the way" (Co-participant #7)

"My crew got me through that one, they were not going to go down without a fight. It took one shout from our stroke and we all went" (Co-participant #8)

Throughout this theme it is evident that many of the participants stressed the importance of the support of their team mates in and out of competition in order to conquer their mental boundaries.

Theme # 2: Hunger

Many of the co-participants of the study referred to a strong desire to succeed as being a contributing factor to conquering "The Wall". This determination was often referred to by the co-participants as "Hunger" or "How hungry they were" to break through "The Wall" and ultimately succeed.

"It all depends on how hungry you are on the day, that is what it comes to who wants it more? Some days you let things get in the way of it" (Co-participant # 6)

"It comes down to winning and what you want or rather how much you want it. My hunger gets me through the pain" (Co-participant # 1)

Another participant mentioned the goals that were driving her determination and how these goals were always in her mind.

"that ultimate goal of wanting to go to the Olympics always would come into my head fifty times a day. The same for that hunger. It's fueled by these goals that we have. Like in the case of you know, if I train a little bit harder that day by the end of the week I'm a little bit better, and by the end of the week a little bit better, and then I'll have a great trial, and then I'll have a greater chance of being in the race. Or I'll go faster on the water" (Co-participant # 3)

This theme reflected how the willingness to achieve success at a particular time can be a great contributing factor to whether these participants were able or unable to break through "The Wall".

Theme # 3: Preparation

Preparation was a theme that most of the co-participants in this study found to be vital to breaking through "The Wall". It was found that the participants had two different approaches to their preparation. Some of them spoke of the pre-race physical and mental preparation needed to get through "The Wall" while others spoke of simply being prepared for the fact that they would face "The Wall" during the race. In these quotes participants spoke about mentally getting ready for the onset of "The Wall" and being prepared to face it.

"I know it's gonna come and so I'm almost prepared for it and when it does come, I know what I've done in the past to get through it, so if it's just counting strokes or calling for help I know what I'm going through, that often helps me. Making sure I have done everything I can do up until that point" (Co-participant # 1)

"it's kind of like when you hit the wall it's too late. If you aren't prepared to push through the wall before you hit the wall, then once you hit the wall a lot of the times it's like crash and it is out of our control" (Co-participant # 3)

Other participants explained how their preparation came down to details that they could have prepared for before the race in order to get through any challenge that may be waiting for them.

"I have thought before, oh I wish I had done this or I wish I had done that before a race. I never want to have that feeling again, I want to be prepared for anything that may come my way" (Co-participant # 7)

"It is all about getting ready and being in charge of your own race. No one is going to do it for you so it is your responsibility to get all your stuff together, make sure you have done all the training and have thought through how the race may go. If you go into it blindly it is not going to help you when things get tough" (Co-participant # 8)

Within this theme participants spoke about how important preparation was before taking part in their competitions. Being prepared mentally as well as physically were great resources to have in order to perform at their peak.

Theme # 4: War between body and mind

This theme gave insight into how the participants of the study had to develop a skill that would allow their mind to take over when their bodies were challenged with the physical pain of "The Wall". Most of the participants spoke about mind over matter and the impact it can have while competing.

"I often think of it as a war between the body and the mind, and that the body doesn't want to get hurt by what the mind wants it to do, and so that is when we may try and make it feel like stopping" (Co-participant # 2)

"and I think of it more as your mind just like trying to make excuses to – or your body trying to you just – you start – for me, I start looking for reasons to stop the race, but its sore and I start thinking well, I was sick yesterday, if I just stop now then no one will worry about it or no one will mind. You know, what I mean, like looking for an excuse to stop. And I think that the wall is mainly mental. Obviously, it comes from the physical pain or whatever, but it's – I think the – it's won by the mind" (Co-participant # 2)

"But, you know, I never really thought of it as a wall, personally, I always just think of it as a more – a war rather than a wall. I mean, you know, just extend your best, win your personal mind things and then you'll be fine to beat other guys" (Co-participant # 2)

"Focus and go is what ultimately gets your through the pain, realizing that you are stronger than you know is what goes through my mind. It is all mind" (Co-participant # 5)

"I often speak to the wall and let him know that he is not going to get the better of me today, if I stick to my guns and make sure my mind is ready for it I am good" (Co-participant # 7)

"So I think if you can choose to use your head more in relation to what your body and actually let your head rule you sometimes, it can definitely work in your favor. And I think that's a huge part of what my strategy is" (Co-participant # 7)

Many of the participants valued the power of the mind and the impact that it can have while placing physical strain on their bodies.

Theme # 5: Focus

The ability for these participants to stay focused and remain in the moment was evident throughout the interviews. There were various strategies used by some participants whereas others were able to just remain focused on the task at hand.

"And I don't know if you're necessarily conscious of what you're doing because I think a lot of it just comes down to like almost blocking out everything else and just thinking about one more stroke" (Co-participant # 3)

"focusing on one thing, one stroke at a time, it's like – I don't know how to explain this – yeah, it's always like I'm just – I just have one more stroke to go and then I need one more after that so it's only taking one stroke at a time and focusing on that stroke and then taking the next one, and the next one and the next one" (Co-participant # 5)

" I think when you zone in you sort of find a quiet area just to think about what you're actually got to do... so I think a big part of it is you just focus on the task at hand because I think, if you haven't thought about what you gotta do before you do it or if my mind isn't focused for a race and the task at hand, I often lose sight of it all" (Co-participant # 8)

Staying in the moment and being able to focus on what is was that had to be done was one of the skills that allowed some of the participants to overcome their toughest mental boundaries.

Theme # 6: Confidence

Confidence is an attribute that has been seen in successful athletes across many sports. The co-participants of this study expressed that if they had self belief in their abilities they were able to perform at their best, however without this belief in themselves it was a challenge to get through "The Wall".

"the belief basically comes from I think a lot of the training that you've done and just like a mixture of the training that you've done. You've got to believe that you've done the

best you can up to that point, and you also just got to believe that when you get on the line, I mean, you can't, you can't doubt yourself because I think if you doubt yourself then you're gonna hit a wall quite easily. If you believe that you can push through it and like – and attack the race or the earlier trial, you're gonna be a lot better off" (Co-participant # 1)

"You have to trust yourself, your team, your coach. Without believing in them and your ability to do it, you may as well not even get on the water" (Co-participant # 7)

" I know that I can do this, is what I say to myself all the time. And I really do think that... I believe in me" (Co-participant # 8)

The participants were able to conquer their mental boundaries if they had confidence in their capabilities. Among the times were they were able to break through "The Wall", there seemed to be a belief that it was possible before, during and after a race situation.

Interaction between themes

The collection of these six themes: (1) Team Support, (2) Hunger - strong desire for success, (3) Preparation, (4) War between body and mind, (5) Focus, and (6) Confidence, rather than the implementation of them individually is what allowed these participants to break through their mental boundaries or "The Wall". Existing research has described elite athletes as possessing a combination of certain characteristics or using a set of skills in order to succeed in their various sports (Fisher & Borns, 1990; Gould, Dieffenbach & Moffett, 2002; Hollander, D. B., Acevedo, 2000; Jones, Hanton, & Connaughton, 2002).



Figure 1: *Interaction between themes*

CHAPTER 4
DISCUSSION

Team Support, Hunger, Preparation, War between body and mind, Focus, and Confidence were the six themes found through the data analysis. The results of the study will be examined with previous research revolving around "The Wall" in sports, specifically the experience of elite rowers when faced with conquering their mental boundaries. This section also includes implications and limitations based on the findings.

To address the study's primary research question, What is the lived experience of elite rowers when they encounter "The Wall"?, the participants echoed that the experience involved a collection of various aids. In order for these participants to conquer their mental boundaries, they needed to draw from these resources both mental and physical. Although limited research has been found regarding elite rowers and their experience of "The Wall", some literature suggests that there are similarities and differences among the various themes that have emerged through the data.

Theme # 1: Team Support

Across numerous sporting fields, team work and team support seem to be a fundamental asset towards the success of the team. As seen through the views of the participants in this study, this seems to be no exception in elite rowing. Tenenbaum & Eklund (2007) stated that a single rower would easily outperform a team of two rowers if the team could not achieve the coordination of oar strokes required to steer and power the boat.

Although participants expressed the importance of working together as a team and continuing to "row as one", the relationship or bond that they shared seemed to be held in a

higher regard. Cech (2007) described rowing as "distinctive as it is not an individual sport, however neither is it a team sport - instead it is a unique partnership" (p. 16).

In elite sports there seems to be great emphasis placed on the bond, trust and environment that athletes share with their team mates. In a study with elite athletes in a variety of sports it was found that having a positive interaction with team mates contributed to the success of the individual athletes. It was this positive environment that was shared among the athletes that allowed them to perform at their best (Jackson, 1992). In another study Gould and his colleagues found that team efficacy was chief among factors that US Olympic athletes reported to influence their performance (Gould, Greenleaf, Lauer, & Chung, 1999). Further in a recent study Gentner et. al., (2008) reported an elite rower as having a high level of trust and confidence in teammates which was extremely important to their success.

Theme # 2: Hunger and the strong desire for success

The strong desire to succeed is a characteristic that can be found amongst most elite athletes. For some athletes it is an absolutely compelling drive to win; they hate losing so much that they will do anything within the laws of the 'game' to succeed. The participants in this study expressed that if they wanted to get through any mental boundary, they needed to possess a certain determination which is seen as greater than the opposition. Many of the participants made use of the term "hunger" or "how hungry they were" to describe their efforts on the day. The hungrier or the stronger their desire to pursue their goals at that moment was what assisted them in either defeating "The Wall" or not being able to break through their mental boundaries. Research has shown that when asked who does or does not make it at an elite level in sports, words such as desire, determination, attitude, heart and self motivation are used (Orlick, 1980). These words when placed into action can be a powerful asset to possess in order to break through

all boundaries and truly succeed in an elite sporting environment. In a further study conducted with Olympic athletes it was found that "a total commitment to pursuing excellence" was a common theme among the participants (Orlick & Paddington, 1988, p. 129).

Theme # 3: Preparation

Preparation through unique forms is something that is performed by elite athletes in order to ensure a solid successful performance. Preparation can be viewed as physically getting ready for an event, where efforts such as; training or equipment checks could become part of an elite athletes routine. However many of the participants in this study viewed preparation as mental. These participants needed to know what they were about to be faced with and more importantly know that they are going to be mentally able to cope with it.

Kirsten (2007) found that elite athletes regard the week of preparation preceding a big match and the match itself being about fine-tuning. 'Fine-tuning' in this instance refers to mentally getting into the best space for that athlete to ensure they perform at their optimum level. Elite athletes tend to know about the hours that they have spent training and preparing over a substantial period of time, knowing that this can all come together can be something that could potentially have an impact on the sporting outcome. In a study conducted with elite skaters, following precompetitive plans and preparation tended to be a major factor in athletes reaching the goals they had set (Russell, 2000). Thomas and Over (1994) found in a study with elite golfers that those athletes who lead the pack tended to have better mental preparation. It seems to be the combination of the physical preparation and mental preparation that lends to a greater chance of athletes overcoming their mental boundaries.

Theme # 4: War between body and mind

The war between the body and the mind is one which is evident in many endurance sports. The mind over matter concept is particularly obvious in rowing because of the extreme physical demands that are placed on the athlete during competition.

Cooper (2007) described rowing as a sport with an interesting dynamic between mental discipline and physical fitness. It is one of the ultimate tests of fitness; rowers push themselves physically to the point where they almost pass out. It is so physically taxing that many rowers feel that they only 'have so many' races in them. Cech (2007) found that elite athletes have the ability to reframe or change the meaning of pain which is mentioned as extremely important in a physically demanding sport like rowing.

Theme # 5: Focus

Throughout the interviews, athletes mentioned various ways in which they are able to retain their focus and stay in the moment. Some used strategies such as; counting strokes, breaking up a race into "chunks" or keeping their mind on just one stroke at a time in order to maintain their focus on the task at hand. Similarly McCaffrey and Orlick (1989) interviewed professional touring golfers, all of whom had won professional tournaments and found that focusing totally on one shot at a time was a common element of excellence. Similar conclusions were drawn in a study with elite athletes where a narrow focus of attention, typically on one specific thought or action was among the psychological characteristics associated with peak performance (Cohn, 1991).

However maintaining focus on the task at hand is not always easy, especially at an elite level of competition. It takes a great deal of personal control in order to cope with these distractions in a productive manner. Gentner et. al., (2008) found that one elite rower described

"laser focus" as the ability to get rid of all other distractions around her (e.g., flags, cameras, opponents, and the finish line) and stay focused in the moment. Further Statler and Henshen (2008) found that the key to effective performances at higher level competitions is the ability to control emotions and focus on the now.

A similar finding while discovering elements of mental toughness among elite athletes, Jones, Hanton, and Connaughton (2002) report the need for: 1) remaining fully focused on the task at hand in the face of competition-specific distractions; 2) remaining fully focused in the face of personal life distractions; and 3) switching a sport focus on and off as required.

Middleton and Marsh (1998) also stated that mentally tough athletes are able to focus on the execution of the task whilst blocking out or not being adversely affected by "distractions."

Theme # 6: Confidence

Belief in the ability to perform was a prominent theme among all of the participants of this study. When these athletes were able to perform at their highest level there was a belief that they were able to do it. Similarly when they did not think that they were able to tackle to challenge ahead, they expressed that they were defeated before even getting on the water.

The most consistent finding in peak performance literature is the direct correlation between self-confidence and success (Williams, 2006). Through a series of interviews with international caliber athletes, Jones, et al., (2002) identified the most important attribute of mental toughness as "an unshakable belief in your ability to achieve your competitive goals". The importance of high levels of confidence in elite athletics has also been highlighted in the studies of Jones and Hardy (1990) and Hemery (1986). In Jones and Hardy's report of interviews of elite athletes, they found that in general, elite athletes tended to have very high levels of confidence and felt that the athletes felt that these high levels were needed

for the performances that they were looking for. Hemery's study of 63 elite athletes showed that 90% of the sample had "a very high level of self-confidence." (Hemery 1986 p. 156).

The confident thoughts that elite athletes carry around with them can have an enormous impact of their ability to break through "The Wall". Research has shown that thoughts directly affect feelings and ultimately actions; inappropriate or misguided thinking usually leads to negative feelings or poor performance, just as appropriate or positive thinking leads to enabling feelings and good performance (Kendall, Hrycaiko, Martin, & Kendall, 1990; McPherson, 2000; Van Raalte et al., 1995). In rowing Baltzell (1999) found that when elite rowers had high self-efficacy and were confident in their abilities they were able to perform at a higher level than when they did not have the belief in their ability which caused them to mentally give up at various stages during a race.

Interaction between themes

Through combining the six themes found in the data the participants were able to break through their mental boundaries or "The Wall". Various studies have found that it is this interaction between coping strategies or characteristics used by elite athletes that allows them to reach their peak performance.

Gould et.al., (1992) found that during their best matches, elite wrestlers were extremely confident, totally focused, and optimally aroused. They also focused on clear tactical strategies. It was the collection of these findings that assisted these athletes in getting to their best matches. Similarly Williams (2006) found that a combination of team support, focusing attention, confidence, and preparation assisted in the success of elite endurance athletes. In another study Loehr (1986) examined over 300 elite athletes' "ideal performance state" by requesting athletes

to describe their "finest hour" in sport participation. Twelve categories were identified to reflect the ideal internal climate for performing optimally. These categories were: physically relaxed; mentally calm; low anxiety; energized; optimistic; enjoyment; effortless; automatic; alert; mentally focused; self-confident; and, in control. Elite athletes in Garfield and Bennett's (1984) study were asked to describe their feelings at "those moments when they were doing something extraordinarily well" (p.158). Eight mental and physical conditions, labeled "peak performance feelings", were identified as being characteristic of these moments. In findings which paralleled those of Loehr (1986), the conditions conducive to optimal performance were the feelings of being mentally alert, physically relaxed, confident and optimistic with a generally positive outlook, focused on the present, highly energized, extraordinary awareness, in control, and in the "cocoon" without fear or anxiety. In rowing Williams (1980) found that elite rowers held a combination of traits such as: confidence, vigor, toughness, focus and assertiveness.

Although various characteristics of elite athletes are present when conquering their mental boundaries in their pursuit of success, it is the grouping of these resources that allows for exceptional performances.

Implications

The findings of this research add to the knowledge and understanding of the experience of elite rowers when they are faced with "The Wall". This knowledge could be useful to sport psychology consultants, elite athletes as well as coaches. Understanding of how elite rowers utilize various skills to break through "The Wall" may allow consultants, coaches or athletes themselves to provide more accurate descriptions and be able to assist in enhancing their performance.

There are however still areas which could be explored in further detail. Future research into this phenomenon could be done to gain a deeper understanding of these experiences. All co-participants were from South Africa so it may be beneficial to examine experiences of elite rowers of other nationalities. Further it could be beneficial to investigate the differences that exist between genders in elite rowers and their experience of "The Wall".

Limitations

One must be careful in the generalizations of the current study based on a very small sample size, as qualitative research isn't normally concerned with the number of research subjects. Interviews were conducted with participants in who were available and willing to participate in the study at this time. Further, all co-participants competed at an elite rowing level and experiences of other sports at other amateur levels were not reflected in the study's findings.

Conclusions

Findings from the present study may allow for the following conclusions to be drawn. When faced with conquering their mental boundaries elite rowers have been shown to make use of various resources in order to break through "The Wall". Team Support, Hunger, Preparation, War between body and mind, Focus, and Confidence were resources that were found to be commonly utilized. It is the combination of these resources rather than the application of them individually that assisted elite rowers in breaking through "The Wall".

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APPENDIX A

RESEARCH QUESTION, DELIMITATIONS, LIMITATIONS, ASSUMPTIONS, AND

DEFINITIONS

Research question

1. What is the lived experience of elite rowers when they encounter "The Wall"?

Limitations

1. The participants involved in the study would be at an elite rowing level; therefore the results may not be generalizable to all rowers.
2. The sample size will include a portion of elite rowers and therefore will not be able to include all elite rowers that are presently in the sport or available for the study.
3. As the researcher has participated at an elite rowing level, there is potential for bias.

Delimitations

1. Even though mental boundaries exist in numerous sporting fields, this study will be focusing specifically on rowing as a sport.
2. The participants will consist of elite rowers over the age of eighteen of age.
3. This size of the sample will be about eight elite rowers.
4. Purposeful sampling method will be used when selecting the participants for the study.
5. Further the rowers that will be included in the sample will be those that are willing and available to take part in the study at this time.

Assumptions

1. It will be assumed that the main instrument used in the study, namely the interviewer, is reliable.
2. The participants that will be involved in the study will be truthful when describing their experiences and when involved in the other procedures of the study.
3. The participants have pushed through or experienced a mental boundary in the course of their athletic career.

Definitions

1. Elite rowers - In this study would refer to athletes over the age of eighteen who have completed for or are currently competing in a national rowing team.
2. Mental toughness - The natural or developed psychological edge that enables athletes to cope better than opponents with the many demands of the sport, be more consistent, and better than opponents in remaining determined, focused, confident, and in control under pressure (Jones, Hanton & Connaughton, 2002).
3. "The Wall" - An extremely unpleasant experience with symptoms including a lack of physical co-ordination, dehydration, nausea, dizziness, an inability to think clearly, and extreme physical and mental weakness (Stevinson & Biddle, 1998).
4. Hitting "The Wall" Phenomenon - An event distinguished by a rather discrete and poignant onset and duration, and is multidimensional nature (Buman, Omli, Giacobbi & Brewer, 2008).

APPENDIX B

EXTENDED REVIEW OF LITERATURE

Baltzell, A. (1999). Psychological factors and resources related to rowers coping in elite competition. Retrieved August 28, 2009, from *SPORTDiscus* with full text database.

The research problem that was investigated was the psychological factors and resources that were related to rowers coping in elite competition. The purpose of the study was to further the understanding of coping in elite sport by determining the predictive powers of coping based on various variables; such as hardiness, optimism, social support and psychological well-being. The participants included 74 rowers that were in contention for, or members of the U.S national rowing and or Olympic team. The findings of the study indicated that 64% of coping variance could be explained by three variables; mental preparation and goal setting, social support and psychological well-being. It also showed that when athletes were coping effectively they experienced high levels of self efficacy and lack of fear. In contrast, before the least effective scenario athletes experienced low levels of self efficacy, a sense of giving up and high levels of worry regarding the expectation of others.

Bertollo, M., Saltarelli, B., & Robazza, C. (2009). Mental preparation strategies of elite modern pentathletes. *Psychology of Sport and Exercise*, 10 (2), 244-254.

This study examined the wide range of preparation strategies and coping mechanisms that a group of elite pentathletes display pre, during and post competition. Six woman and eight men were interviewed using various approaches during the study. The findings indicated that perseverance, commitment and consistency during their training were vital components in preparation leading up to an event. A range of mental and technical strategies were apparent in the various pentathletes during competition such as; competition simulation, mental practice, goal setting, emotion control, behavioral routines, specific technical strategies, attentional strategies, reaction to mistakes, and post-competition self-assessment. There were also findings of athletes' negative expectations during competition which were seen as potential threats.

Buman, M.P., Britton, W. B., Cornelius, A.E. (2009). A discrete-time hazard model of "hitting the wall" in recreational marathon runners. *Psychology of Sport and Exercise*, 10, 662 – 666.

The purpose of the study was to extend on previous research findings by exploring the probability of 343 recreational marathon runners hitting the wall and to describe the overall risk of this occurring over the course of the marathon. The findings indicated that 57 % of the participants claimed to hit the wall at some point during the marathon. The authors concluded that characterizing *when* individuals hit the wall is an important factor to take into consideration when trying delay or to prevent hitting the wall altogether.

Buman, M.P., Omli, J.W., Giacobbi, P.R., Brewer, B.W. (2008). Experiences and coping responses to "hitting the wall" for recreational marathon runners. *Journal of Applied Sport Psychology*, 20, 282-300.

This study examined the behavioral, psychological characteristics and coping responses of marathon runners associated with "hitting the wall". 57 middle aged experienced marathon runners were recruited for the study. The findings indicated that the runners used various characteristics and coping responses to "hitting the wall", such as; many physiological and psychological descriptors that led to race-related physical coping efforts (e.g., supplementation /hydration), emotion-focused coping (e.g., social support), and cognitive strategies (e.g., willpower, mental reframing).

Gentner, N., Delgado, Emanuel. (2008). Laser focused: Insight into the Mental Preparation of an Olympic Gold Medalist Rower. *Journal of Excellence*. (13). 33-39.

This was an interview that was prepared by a research group at Ithaca College. The authors were interested in performance enhancement and athletes' experiences of sports psychology. The interview provides an in-depth look at the thoughts and strategies of one female Olympic Gold Medalist rower. Through the semi-structured interview she offers valuable information about her mental techniques before, during and after competition.

Gould, D., Dieffenbach, K., Moffett, A. (2002). Psychological characteristics and their development in Olympic champions. *Journal of Applied Sport Psychology* 14(3): 172-204.

This study examined the psychological characteristics and their development in Olympic champions. Ten U.S Olympic champions (winners of 32 Olympic medals collectively) and one of their coaches were interviewed. General findings of the study were that these athletes were characterized by: '(a) the ability to cope with and control anxiety; (b) confidence; (c) mental toughness/resiliency; (d) sport intelligence; (e) the ability to focus and block out distractions; (f) competitiveness; (g) a hard-work ethic; (h) the ability to set and achieve goals; (i) coach ability; (j) high levels of dispositional hope; (k) optimism; and (l) adaptive perfectionism.'

Hollander, D. B., Acevedo, E. O. (2000). Successful English Channel swimming: the peak experience. *The Sports Psychologist*, 14,1-16.

Psychological characteristics and reflective meanings of eight English Channel swimmers were examined in this study. Through the interviews conducted, various themes were found which included; cognitive orientations of mental toughness, cognitive strategies which included goal setting, compartmentalization of time, and/or swimming distance, and self-regulation. Descriptions of the swimmers experience during the swim, was an ease of swimming in the beginning, aversion in the middle and finally euphoria as well as let down upon completion of the swim. Some swimmers were aware of an increase in self confidence and unlimited potential while others experienced a more competitive post event focus.

Jones, G., Hanton, S., Connaughton, D. (2002). What is this thing called mental toughness? An investigation of elite sports performers. *Journal of applied sports psychology*, 14, 205-218.

This study examined the meaning of mental toughness as well as the essential attributes that are related to an athlete that is mentally tough. Ten international sports performers were interviewed in the study. Twelve ideal attributes were found in the various athletes among various themes including; self-belief, desire/motivation, dealing with pressure and anxiety, focus (performance-related), focus (lifestyle-related), and pain/hardship factors.

Lloyd, Michael and Terry, Peter C. (2006). What champions think: Optimal attentional strategies for 2000m rowing. *In: 2006 Joint Conference of the Australian Psychological Society and the New Zealand Psychological Society*, 26-30 Sept 2006, Auckland, New Zealand.

The research problem that was to be investigated were the attentional routines among male and female rowers who have achieved a title of Olympic or World Championship medalist or, a top three world ranking on the ergo meter. The purpose of the study was to access the attention focus among elite male and female rowers and to produce results that could be conducive to their performance as well as other rowers by trying to answer the question if there is an optimal attention strategy for performing 2000m ergo meter test.

Stevinson, C, D., & Biddle, S. J. (1998). Cognitive orientations in marathon running and "hitting the wall". *British Journal of Sports Medicine*, 32, 229 -235.

The authors of the study were examining whether there is a relationship between runners' cognitions during a marathon and "hitting the wall". Data from 66 non-elite runners was collected after their completion of the London Marathon. The findings indicated that runners that "hit the wall" used more internal dissociation. Internal dissociation was related to an earlier onset of the wall, whereas external dissociation related to the wall occurring later in the marathon. This study relates to the previous studies in mentioning the wall; however attention is placed on internal and external dissociation.