MENTAL PREPARATION TECHNIQUES AND ACCOMPLISHMENT OF RACE GOALS BY IRONMAN TRIATHLETES: A QUALITATIVE INVESTIGATION

by

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(Under the Direction of Daniel R. Czech)

ABSTRACT

The Ironman triathlon is a rapidly growing sporting event worldwide but little research has been found on the psychological processes employed by its participants. Grand’Maison (2004) found that 97% of Ironman participants interviewed responded strongly or very strongly when asked “How important do you believe that mental skills are in Ironman training and racing?” However, which of these mental skills produce the best race results is still unknown. The purpose of this study is to discover which mental skills the Ironman participant population is utilizing during training and how these skills are seen to influence accomplishment, or lack of accomplishment of race goals. A purposeful sample of 5 Ironman participants was interviewed and transcriptions will be analyzed utilizing qualitative analysis. 5 main mental skill themes were discovered: 1) preparation, 2) previous experience, 3) choice of focus, 4) breaking down the race and 5) camaraderie/social support. From these main themes, subthemes were discovered within two of the main themes. In preparation: 1) having a schedule/plan, 2) visualization and 3) being prepared for adversity. In choice of focus: 1) distraction/outside factors, 2) positive thoughts/motivation, 3) outcome/focus on finish, 4) “run my race”/self-focus and 5) calming/relaxation. Additionally, regardless of accomplishment of goal, all 5 participants showed themes of their mental preparation having a positive influence on their racing. A multiple skills framework developed indicating the themes exist in conjunction and equally with each other. From these themes, research may be conducted to determine the effectiveness of specific mental skills and possible interventions that can be implemented.

INDEX WORDS: Ironman Triathletes, Mental Preparation, Race Goals, Ultra Distance, Triathlons, Mental Skills
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Bachelor of Science, University of Florida, 2012

A Thesis Submitted to the Graduate Faculty of Georgia Southern University in Partial Fulfillment of the Requirements for the Degree

MASTER OF KINESIOLOGY
STATESBORO, GEORGIA
2012
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Electronic Version Approved:
May 2012
# TABLE OF CONTENTS

LIST OF TABLES..................................................................................................................6

CHAPTER

1 INTRODUCTION...............................................................................................................7

Problem..............................................................................................................................10

Purpose............................................................................................................................10

Purpose and Research Questions.....................................................................................11

2 METHODOLOGY.............................................................................................................13

Research Sample .............................................................................................................13

Instrumentation ...............................................................................................................13

Procedure.........................................................................................................................14

Data Analysis....................................................................................................................15

3 RESULTS.......................................................................................................................17

4 DISCUSSION...............................................................................................................34

Implications and Limitations..........................................................................................40

Conclusions.......................................................................................................................42

REFERENCES.................................................................................................................43

APPENDICES

APPENDIX A: RESEARCH QUESTIONS, LIMITATIONS, DELIMITATIONS, DEFINITIONS..................................................................................................................39

APPENDIX B- ANNOTATED BIBLIOGRAPHY.................................................................48
LIST OF TABLES

Table 1: Description of Participants…………………………………………………………………..17

CHAPTER 1
INTRODUCTION

The triathlon has been recognized as an official type of race for 100 years, yet it is astonishing to see the growth of this sport. In the past 10 years, triathlon participation in the United States has increased six-fold from 21,000 to 135,000 (USA Triathlon, 2010). Triathlons are typically organized in one of three formats: sprint, Olympic, and ultra distance. The Ironman is currently the most popular type of ultra distance triathlon in the United States. In fact, about 17% of all triathletes, around 23,000 individuals, participate in Ironman races. According to USA Triathlon regulations, an Ironman triathlon is a 2.4 mile swim, 112 mile bike and 26.2 mile run and races can take up to an average of 8 to 17 hours to complete (USA Triathlon, 2010). As such, it is apparent why it would be imperative for Ironman triathletes to be at peak physical condition. One can only imagine, however, that the mental preparation these athletes go through must also be significant in order to compete in such a grueling endeavor.

With the Ironman Triathlon only being developed about 35 years ago, very little research has been found on the individuals who compete in them, especially with regard to their use of mental skills. It is still unknown which types of psychological preparatory techniques are being successfully applied during the training process by these triathletes. Much of the research done on various types of endurance athletes, however, has suggested that there are several psychological skills which may be beneficial to performance when employed both during training and competition including: associative attentional focus, positive self-talk, goal setting, mindfulness, self-efficacy, and use of personalized motivational scripts. (Baker, Cote, & Deakin, 2004; Burke & Jin 1996; De Petrillo, Kaufman, Glass, & Arnkoff 2009; Hamilton, Scott & MacDougall, 2007; Hatzigeorgiadis, Theodorakis, & Zourbanos, 2010; Masters & Ogles, 1998;

More precisely, specific types of cognitive focus have been consistently shown to affect performance endurance in ultra endurance athletes (Weinberg, Smith, Jackson, & Gould, 1984). Studies conducted by Morgan and Pollock (1977) and Masters and Ogles (1998) found that an associative attentional focus, or focus on internal performance-related cues was more commonly used by elite endurance runners. Conversely, they found that runners who were slower used dissociative techniques where they tried to distract themselves by focusing on external items (i.e. scenery, singing a song in their head.)

Baker, Cote, and Deakin (2004) found similar results when these techniques were used by ultra distance triathletes during their races. It was discovered that expert ultra triathletes experienced performance-related thoughts (86% active and 15% proactive) during the starting and finishing segments of their races. Triathletes who finished in the middle and back of the pack were less likely to have active, performance specific thoughts (62% and 56% respectively) and experienced passive thought patterns (32% and 29%). This study also found that different types of cognitions were prevalent at specific parts of a triathlon (i.e. transitions into the next race component), which is something unique to this type of event (Baket et al., 2004). Although this was the case, the researchers did not mention if these techniques had been developed and applied during the training process.

One type of mental skill that often accompanies an associative attentional focus is the use of positive self-talk (Hatzigeorgiadis et al., 2010; Weinberg et al., 1984). Self-talk can be used to keep an athlete’s attention focused in the present (Weinberg, 1988). Moreover, researchers have found this type of self-talk, which falls into the category of positive self-talk, can increase
performance (Weinberg & Gould, 2011). In particular, Hamilton and colleagues (2007) found this correlation with endurance cyclists. This study concluded that both self-regulated and assisted positive self-talk had a “beneficial impact on endurance performance” (Hamilton et al., 2007 p. 236).

Goal-setting is another psychological skill which has been shown to enhance athletic performance. In fact, Burton, Naylor, and Holliday (2001) found in a meta-analysis that 78% of the studies they reviewed showed a moderate to strong effect of goal setting in sport.

Specifically with Half-Ironman participants, Stober et al. (2009) examined how achievement goals and personal goal setting predicted race performance. Not only did the triathletes who set their own goals (as opposed to having the goals set by a researcher) perform better, those who set goals which were more challenging (faster times, higher ranks) performed better than those who set less challenging goals. From these findings, Stober et al. (2009) concluded that “personal goal setting mediated the relationship between performance-approach goals and race performance supporting…that the effects of achievement goal orientation on performance are mediated by setting specific goals” (p. 237-238).

Perhaps the most influential piece of research on the mental skills of ultra distance triathletes was done by Karine Grand’Masison in 2004. In her article What Mental Skills Ironman Triathletes Need and Want, she examined many facets of the mental side of Ironman triathletes. Most significantly, she sought to identify how many triathletes were currently using mental skills and which skills they wished to develop. A staggering 97% of those interviewed responded strongly or very strongly when asked “How important do you believe that mental skills are in Ironman training and racing?” Surprisingly, only 37% said they practiced a form of sport psychology often in training and even fewer, 27%, utilized it in races (Grand’Maison,
2004). This disparity in the number of athletes who believe mental skills are important and those who actually practice mental training is interesting and needs to be examined. One potential explanation for this difference is the Ironman triathletes’ lack of knowledge about how to properly employ certain mental skills. In that regard, Grand’Masion (2004) identified several skills which the ultra triathletes wished to improve upon. Included were keeping focus to improve level of performance, becoming and remaining positive, and how to set and adhere to goals (Grand’Maison 2004).

Discovering which mental skills are being used by Ironman participants can potentially have significance in theory and practical application. There are currently gaps in the research to describe the skills Ironman triathletes are using in their training and to determine if these participants are attributing any of their success, or nonsuccess, to the use of these skills. This knowledge would be important for the development of theory associated with the mental preparation process of Ironman and other ultra-distance athletes can, leading to more specific research and the development of appropriate interventions. From a very realistic standpoint, this information would hopefully inspire the development and use of effective mental training among the Ironman participant population.

Problem

Researchers have shown that mental training positively influences performance in ultra distance sport, yet few Ironman triathletes are currently using mental skills in race preparation despite their knowledge of its importance. Moreover, little research has been found on the mental skills which are successfully being used by Ironman triathlons, and specifically with regard to
how these skills are being implemented before a race and even less with regard to their influence on accomplishment of race goals.

Purpose

The purpose of this study is to describe the mental preparation techniques of Ironman triathletes before a race, and to describe how these triathletes feel this preparation helped and/or hindered their accomplishment of their race goals.

Purpose and Research Questions

The purpose of this study is to describe the mental preparation techniques of Ironman triathletes before a race and to describe how these triathletes feel this preparation helped and/or hindered their accomplishment of race goals. There are two research questions this study will address: 1. What type, if any, mental preparation techniques are used by Ironman triathletes and 2. How do Ironman triathletes feel their mental preparation contributed to their accomplishment (or lack of accomplishment) of race goals? The researcher believes a more thorough insight into which types of mental preparation techniques are being utilized by Ironman triathletes will give researchers and sport psychology consultants a better perspective in terms of intervention development.

The researcher believed that in order to obtain this information, the exploratory nature of a qualitative analysis was best fitting. Within this framework, the study was best conducted through grounded theory approach. In grounded theory “the researcher attempts to generate or discover a theory of a process, action or interaction grounded in the views of the research participants…Research involves multiple stages of data collection and refinement of abstract
categories of information” (Bloomberg & Volpe, 2008 p. 11). Through understanding the processes and context the participants are experiencing and by maintaining a flexible methods design with appropriate interpretation, the researcher believed the data correctly addressed the research questions.
CHAPTER 2
METHODOLOGY

Research Sample

This study utilized 5 participants competing in an Ironman triathlon during the time of the study. Participants were purposefully chosen in order to ensure all participants would meet the race participation criteria of the study and would provide sufficient information from which to draw meaningful conclusions. All participants competed in an Ironman triathlon within the time of the study and were not excluded based on experience or talent level. Participants were contacted personally by the head researcher or other members of the research team. Telephone and email communication was used to request participation.

Instrumentation

With qualitative research, the researcher is the primary instrument in obtaining information through interviews, discussions, and/or observations (Czech, Wrisberg, & Fisher, 2004). Therefore, it is important to make sure measures are taken during the interview process to ensure biases are not made with regard to the researchers own personal. To ensure this, methodological triangulation occurred. The head researcher conducted interviews which were recorded on a digital recorder while simultaneously taking notes of key points in a journal. Following the interviews, transcription occurred onto a computer and all files were kept confidential.
**Procedure**

Two pilot interviews were conducted to ensure the questions are not leading and would provide adequate information. The researcher then contacted potential participants by email to see if they were willing to participate. This contact information was obtained through resources of the head researcher or members of the research team. At the time of agreement to interview, the researcher obtained participant’s consent officially and informed them of the measures of confidentiality that were taken. These steps consist of: names will not be used in transcriptions or publications, and interviews not being accessible by anyone but the research team. A pre-race interview was then scheduled to be conducted within one week of competition. The participants were given an overview of the rationale behind the study and demographic information was collected at this time. These interviews were semi-structured, done over the phone, recorded digitally with notes taken manually on main points. Follow up questions were asked when appropriate.

The pre-race interview questions were:

- What are the race goals you have set for yourself?
- Describe what you have done to mentally prepare for this Ironman triathlon.
- What types of mental skills do you utilize during Ironman triathlon training?

A post-race interview was also conducted, which took place within one week following competition. The post-race interview questions were:

- Did you accomplish your race goals?
- How do you feel your mental preparation influenced your accomplishment/lack of accomplishment of these goals?
Data Analysis

The methodological methods of grounded theory analysis developed by Corbin & Strauss (1990) and Burman, Omli, Giacobbi and Brewer (2008) was used. Following data collection, the interviews were transcribed verbatim and then proof read for accuracy. This ensured none of the information was missing and that the interviews were transcribed correctly. Once the accuracy of the transcripts was assured, the transcripts were stored on an external hard drive which could only be accessed by the research team.

The researcher read and re-read interviews to obtain a solid understanding of them. In doing so, the researcher was able to check for errors and to develop a holistic knowledge of the data presented. It is important to understand the interview in its entirety to facilitate the analysis in later stages.

Once a thorough understanding of all transcripts reduction occurred, the researcher eliminated irrelevant, repetitive or overlapping data. Part of dialogue which is inherent in interviews such as false starts and brief utterances which contribute no meaning to the data was be eliminated. The interview was shorted and more concise with its meaningfulness being preserved (Czech et al., 2004).

Next, coding and formation of categories occurred, to release data meaning. To do this, first “raw data” was be openly coded, where the “data [is] broken down analytically…events/actions/interactions are…given conceptual labels…[and] are grouped together to form categories and subcategories.” (Corbin & Strauss, 1990)

Next the researcher analyzed how each part of each interview relates to the overall experience described by the participant and then compared interviews to “global themes”. These
themes were classified into categories and labeled so that the different parts of the data were accurately captured (Cote et al., 1993; Czech et al., 2004).

“This initial classification system is built according to the critical characteristics of categorization: (a) coding experience, (b) inductive inference, and (c) similarity. First, the coding or tagging experience, which is essential to categorizing a large amount of qualitative data, is used to rearrange the text into manageable and organized units. Second, inductive inference is used to create categories. In this process, there are no predetermined categories or patterns before data collection. The important dimensions of the interviews emerge from the analysis. Finally the categories are judged by their similarity, so that the data in each category are similar to each other yet distinct from the other categories of data” (Cote et al., 1993 p. 132).

Once these categories were fully developed, the researcher described the themes that emerged and their implications about the data. At this point triangulation occurred in the form of 1) peer checking in which other qualitative researches made sure they fully agreed with the conclusions developed, 2) expert checking in which a supervisor of qualitative research made sure he fully agreed with the conclusions developed and 3) member checking in which participants made sure they fully agreed with the conclusions developed. From these descriptions, discussion points can arise and the reader should be able to understand the meaning behind the themes.
CHAPTER 3
RESULTS

A description of all participants can be found in Table 1. Five participants competed in a full, USAT sanctioned Ironman triathlon within 1 week of the interviews. The sixth participant’s race was not a USAT sanctioned Ironman and therefore the participant’s data was not included in the study.

Table 1- Description of Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age</th>
<th>Gender</th>
<th>Number of Previous Full Ironman Races</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>46</td>
<td>male</td>
<td>none</td>
</tr>
<tr>
<td>2</td>
<td>38</td>
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<tr>
<td>4</td>
<td>36</td>
<td>male</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>53</td>
<td>male</td>
<td>2</td>
</tr>
</tbody>
</table>

This research was designed to answer two questions: 1) what type, if any, mental preparation techniques are used by Ironman triathletes and 2) how do Ironman triathletes feel their mental preparation contributed to their accomplishment (or lack of accomplishment) of race goals? Following analysis, themes were discovered to answer these questions.

What type, if any, mental preparation techniques are used by Ironman triathletes?

To this question, 5 main themes were discovered: 1) preparation, 2) previous experience, 3) choice of focus, 4) breaking down the race and 5) camaraderie/social support. From these main themes, subthemes were discovered within two of the main themes. In preparation: 1) having a schedule/plan, 2) visualization and 3) being prepared for adversity. In choice of focus: 1) distraction/outside factors, 2) positive thoughts/motivation, 3) outcome/focus on finish, 4)
“run my race”/self-focus and 5) calming/relaxation. Each main theme was mentioned by each participant and all subthemes were mentioned more than once and where designated as specifically significant by the participants.

Theme #1: Preparation

For the participants, the first theme that emerged was that of preparation, in the sense of both physical through their training, and mental though their implementation of various psychological skills.

Subtheme #1: Having a schedule/Plan- All 5 participants were following some sort of training plan and had found having this schedule established built confidence in their physical abilities to race and helped them remember that their work was helping them get closer to their goals. 3 of the 5 participants discussed a race plan they had developed for how they had the exact race day going, what to do at specific spots, etc.

Participant 1

- “Keeping with the training schedule that I have throughout the year just to make sure that I am comfortable, I can handle the distances.”

Participant 2

- “I have written up a nine-page document with my race plan including things that I want to remind myself of and think about during various stages of the race.”
- “The other purpose of the plan is to make sure that if I have a bad race experience, it is not for lack of gear or preparation or resources. So a big part of the race plan is playing
for resources, making sure that I have the right gear and the right nutrition and the right things that I need along at various points throughout the race.”

- “Create a story of how the race will go before the racing happens.” (Participant 2)
- “Preparation was everything. I had a really-really solid plan that I executed really very well.” (Participant 2)
- “It’s (the plan) for me to understand why I am doing specific drills or workouts or thresholds and I remind myself okay this is going to help me accomplish this, this is going to help me get a little faster, this is going to help me go the endurance for me.” (Participant 4)
- “I set a plan from day one and I follow the plan that I am confident in the plan and that helps me mentally, builds my confidence in what I am doing is going to get to my end results, my goals.” (Participant 4)

Subtheme#2: Visualization- Visualization was used by the participants in order to prepare for what specific parts of the race might look or feel like. Most “visions” were about the emotions the participants anticipated feeling, the thoughts they anticipated having and physiologically how they would feel (overall physical state as well as their form and efficiency). Many of the instances where visualization was brought up by participants, it was in conjunction with overcoming some sort of challenge, which closely coincides with the next sub-theme of being prepared for adversity.

- “I have visualized various aspect of the race, especially the part that generally give me a little bit of trouble or where I know that I generally have some physical or mental issues.” (Participant 2)
• “I’m visualizing myself getting off the bike and transitioning into the run and I fully expect to get off the bike and feel drained and feel fairly spent and I fully expect to wonder how I could possibly run a marathon.”

• “At mile 20 of the run I visualize myself pausing, regrouping, mentally setting and just doing a 6 mile run.”

• “I do try to visualize myself with good form, feeling good, being strong and in control, throughout the run and I try to really think about what that feels like and then kind of project that into that entire run and it helps me, and that actually helps ease anxiety before the run.”

Participant 3

• “Sometimes as a first person, so I can actually feel the emotions that I like to feel.”

• “I will visualize the finishing, me running towards it and just feeling the emotions of the people that are on the grandstand or on the course itself.”

Participant 5

• “I visualize what I want to do, what I intend to do. I visualize myself doing the race and how I am going to feel, what it is going to look like.” (Participant 5)

Subtheme #3: Prepared for adversity- This subtheme was mentioned multiple times by each participant. Being prepared for adversity was described as being unavoidable and just a part of the race process. Part of the adversity was explained as being something to embrace and prepare for.
Participant 1

- “There are going to be times when you are not going to feel good…There are going to be times when you are probably going to think why in the hell did I sign up...You know you are going to have these uneasy feeling but you know you have got a job to do.”
- “Knowing it’s not going to feel good, not everything will go as planned, prepare for the unexpected.”
- “I knew that there was going to be a time where I was not going to feel good, things were not going to work out exactly the way I wanted, but you expect it; if they are going to happen ‘okay here it is I know this would happen I’m find and keep going…when it happens, no big deal, just keep going.”

Participant 2

- “Embrace the suck, because realistically doing an Ironman there is going to be one or two points that you are feeling borderline horrible, and embrace it and get through it.”
- “I am realistic that the plan, you know may not hold up, there might be things that I didn’t expect but at least I have a plan that I can fall back on.”
- “Let me put myself in some pain here and see what I can do and if I don't do it that is fine, I will still feel good about the race but I probably regret it if I don’t try.”

Participant 3

- “Know it’s going to suck and embrace it…as good as we’re feeling or as bad, it’s only temporary and may change so enjoy the moment.”
Participant 4
- Keep reminding myself I am going to get hit, I am going to get knocked around and not let that bother me.”

Participant 5
- “When the going gets tough, it’s like, hey this isn’t going to last forever and that kind of makes it a little easier.”

**Theme #2: Previous Experience**

The theme of previous experience was mentioned by the participants as a source of confidence as well as knowledge of what to expect. Since in order to compete in an Ironman it is necessary to have completed a half Ironman (70.3 miles) all participants had at least experience in an ultra-distance triathlon. In addition, the participants training schedules put them in similar experiences as far as distance that they would face during the race and reassured them they were physically prepared.

Participant 1
- “The other thing that kind of helps is to know that the other races, all of the half Ironman’s that I have done and that I felt fantastic with those, just kind of helps.”

Participant 2
- “You know you are going to finish because you’ve done all the training.”
- “I have learned though racing that the pain will always go away.”
Participant 4

- “Believe you’ve put in the effort to reach the goal.”

Participant 5

- “The biggest thing I have going for myself is that I have done two before and I have completed both. I have done Kona, Hawaii, the World Championship and I have done Arizona. So in my mind I have the confidence knowing that I am able to do it.”

- “My mental preparation is #1, past experience. Having the confidence knowing that I have done it before so I know I can do it.”

- “The fact that I had done this before that I have already accomplish, that I have already done two Ironman and the fact that that knowledge certainly helped because that gave me confidence in knowing that I could do it. So even when it got difficult and hard and when I wasn’t physically up to par for the challenge I knew mentally I could carry through because I have done this before and I had to believe in my abilities to do it.”

Theme #3: Choice of Focus

The theme of choice of focus was very important and the overarching idea behind it was that each participant chose to focus on specific things while racing in order to accomplish their goals. All of the areas of focus that the participants chose to discuss were in some way facilitative and conscious.

Subtheme #1: Distraction/outside factors- Participants spoke about using distraction or focusing on things outside of the race and themselves. It was stated that distraction was used in
the form of focusing on competition, disassociating from the monotony of the race and in order to make it more fun.

Participant 1

- “Distracting yourself because it makes time go by…thinking about something else makes it easier.”
- “Once you hit the halfway point, you got a treat (a special needs bag); it was something to look forward to.”
- “Thousands of people yelling, screaming, music playing, it’s full of energy, kind of freshen your mind up a bit.”

Participant 3

- “I wanted to make sure on the run he was not making time on me, so my focus became on making time on him.”
- “Surprise notes from my wife and kids that I will get, that I look forward to reaching that at certain points of the race.”

Participant 5

- “The spotlights of the cameras and the lights and the picture taking everything and the loud music. It becomes very festive in the evening.” (Participant 5)

Subtheme #2: Positive thoughts/Motivation- The participants made a conscious decision to think positively, many times when they felt negative thoughts encroaching. The choice began to focus instead on positive aspects of the race experience.

Participant 2
• “Pain doesn’t last.”

• “Motivational quotes that I had tucked aside and stuck in my…I actually wrote them on a bracelet that I wore, but I didn’t have to use them at all, but I did once I decided to kind of push hard. One of them is just that it is not supposed to be easy at all….The other one is when your legs get tired, run with your heart.”

• “I would just yell out, shut up legs!”

Participant 3

• “I am feeling strong, I am focused, I am hydrated…as much as I am hurting, somebody else is hurting more than me.”

• “First I had written down on my arm, I had somebody write down Strength, Power and Focus and those were the things that I wanted to focus on throughout the day, focus being the keyword.”

• “This is not breaking my spirits.”

Participant 4

• “To be able to switch your thought process mid thought or quickly after you might have a questioning/negative thought in your mind is crucial”

• “If you are able to clear your head or as a negative thought comes to think about your training and think about the ultimate goal.”

• “As soon as you can change the negative thought into something positive, the easier the day will become.”

Participant 5
• “Instead of, ‘oh my god I have to run a marathon’, ‘I’m off the bike, so my butt doesn’t hurt any more…my running shoes are soft…26.2 miles is nothing after 112.’”

• “So in other words when the self-talk becomes negative the biggest thing is to start getting into the present. Because a lot of negative self-talk comes from the fact that you either don’t have enough fuel in your body or also negative talk comes from not being in the moment.”

• “If I can stay positive in training I know I will stay positive during the race.”

Subtheme #3: Focus on finish- Many times participants chose to focus on the end of the race, the finish and the positive emotions that came with being done.

Participant 1

• “You know you are going to finish.”

• “Let’s just go ahead and get this finished.”

Participant 3

• “I will visualize the finishing, me running towards it.”

• “The feeling at the finish line surpasses any pain or weakness or crazy thoughts you have will not be on the course.”

Participant 5

• “I always say that crossing to finish line at an Ironman, there is only one thing better than that and there is only one feeling that’s better than that, and that’s sex, the only thing. Otherwise there is nothing that compares to crossing the finish line on an Ironman.”
Subtheme #4: “Run my race”/Self-focus- Participants took a self-focus, not letting the competition or other outside factors distract them from what their job was. The participants mentioned knowing they had control and took an introspective focus to maintain that sense of control.

Participant 2
- “I am doing what I am doing in a race and what I plan to do and what I want to do at any point in time...all the people around me and even some of the factors around me should not impact what I plan to do and what I want to accomplish.”
- “I keep saying to myself, just run my race.”

Participant 3
- “I tried to hold on and control what I could control which was my emotions and my feelings for the day and not get caught up in the darkness.”

Participant 4
- “If I am going to have to walk, if I don’t go as fast as I want or what have you, I am still the same person that I know and love and, you know, it’s just something that I am doing it, not defining me.”

Participant 5
- “It is all perception and it really is and it is how you perceive things...it is your reality.”

Subtheme #5: Calming/relaxation- Participants used various techniques to stay calm and relaxed in order to not let nerves or excitement take over.
Participant 3

- “Over the last 2 weeks every day, personally I have been taking 10 minutes away from everything and just focus on the race, rather be picturing myself running, biking or swimming or just feeling calm about the whole race, trying to disconnect a little bit from the emotions and the feelings that we have at this point.”

Participant 4

- “I prepare myself to be calm through some meditation and just relaxing and to go out there and have fun is the goal.”
- “Just knowing that there is a goal really helps calm my mind and it's not like I’m questioning why I am doing it.”

**Theme #4: Breaking Down the Race**

The theme of breaking down the distances into smaller, more manageable increments was used by participants in both training and in the race. The idea of perceiving there to be only a distance that they knew they could easily finish was mentioned as being very helpful for the participants.

Participant 1

- “You just keep working toward your next goal, don’t think of it as a 112 mile race, you break it down in to manageable pieces because if you think of it as 112 miles it can mess with your mind a little bit.”
Participant 2

- “Always think in terms of small increments or small goals, never think about the entire race...on the swim I am only going to the next buoy, on the bike I am only getting to the next aid station...I am not running 26 miles, I am running a mile, just happens to be 26 times.”
- “Thinking of it in terms of the small increments and not the whole workout.”
- “I said that’s it, that’s the only thing I have to do, is to get to that first swim buoy and when I will get there I will know the next thing to do, which is to get to the next swim buoy; but all I will think about right now is getting to the first swim buoy and that is it, that helped a lot.”

Participant 4

- “My strategy has always been to break it down into small pieces.” (Participant 3)
- “Cutting it down into parts...If I am doing a 6-hour ride I will say ‘Oh! An hour is done; I have got a 6th done.”
- “Breakup hours and miles or minutes or whatever it is and when I break it down, it is much easier to deal with.”

Participant 5

- “Stay in the moment and if it’s just one foot at a time or just to reach the next lamppost or next turn or whatever.”
- “Like our big bridge here, it is like I know that I got to cross, which will be towards the end of my run and I am going to be tired then and then I say, oh, my God, no, I still got the bridge to go over. See that, I am living in the future. I haven’t come to the bridge yet. You know I probably maybe 5 miles away from the bridge, so I got to get myself,
train myself not to be thinking about the bridge because I haven’t gotten there yet. And hell, who knows I might not even get there. So why worry for nothing. So it is like, I train myself to stay in the moment.”

Theme #5: Camaraderie/ Social Support

The theme of camaraderie and social support was expressed by the participants in the form of training partners, triathlon club members, family and friends. Having this social support helped pass time during training as well as kept spirits up during racing.

Participant 1
- “It really helps to be with the group that makes it easy.”
- “You are all working together for a common goal…it’s just the camaraderie kind of just makes it go by a little bit easier “

Participant 2
- “I train with a group, so there is a camaraderie aspect; you know that helps mentally through our workout.”

Participant 3
- “My wife is 90% of the time she is at the races, you know supporting and encouraging, even when I am not doing well she always has a positive comment.”

Participant 4
- “Seeing family members at turnaround points, I was seeing my girlfriend at the finish line; all these positive mental cues are very beneficial.”
Participant 5

- “But I kept with this guy who was having a difficult time himself and we decided to do the last 13 miles together. So what we did do is we kept talking to each other and encouraging each other and telling each other stories and talking to each other, telling each other different things to get off thinking about what we were doing, thinking about other things instead and also, you know, pushing each other.”
- “There were 21 club members up there, 16 of whom it was their first and all 21 finished. So that was awesome and it is a thrill of a lifetime.”

How do Ironman triathletes feel their mental preparation contributed to their accomplishment (or lack of accomplishment) of race goals?

During the post-race interview, participants were asked both if they accomplished race goals and then how they felt their mental preparation influence their goals. 4 of the 5 participants were able to accomplish the goals they had stated in the pre-race interview. Regardless of accomplishment of goal, all 5 participants showed themes of their mental preparation having a positive influence on their racing.

“As the mental, how it helped me to get through this was that each part of the race is a little bit different, everything when you wake up in the morning with just the right mindset like you are going to have a long day. There are going to be times when you are not going to feel good….But once you actually get started moving, getting ready for the morning, just your natural instinct just takes over it, like I have to do this and I have to do that and the mental part of that you have done it before, so you know you are going to have these uneasy feelings but you know you have got a job to do.” (Participant 1)
“I think from a mental standpoint, I kind of learned some new skills on the run in terms of scraping my plan for something more aggressive in the middle of a run. Whereas typically in the past I was dealing with adversity, so all the mental tricks and games that I had were about dealing with adversity. Scraping the plan for a more aggressive one to actually put some of the mental tricks back into play.” (Participant 2)

“I think it really helped. You know once literally within 2 minutes of being on a bike ride I had a flat tire, as I said, really, is that how this race is going to go? And it just seemed like things just kept coming, coming and coming, I said, I cannot control these things and I kept the focus, but my focus was nothing could break my spirit that day, so if there wasn’t any perfect day, I was still going to finish the day and have a good time, but I just dealt with that in the moment I guess, but my mental aspect was right, I could only do what I could do with the training that I had and my mental aspect was there, I mean that is for sure.” (Participant 3)

“100%. Yeah, realizing so many things it can go not as planned or wrong, and not worried about time and just keep putting one foot or one arm in front of the other. They did it; you know, helped me tremendously. My mental training plans worked and I just kept a good head on my shoulders and got through the tough times.” (Participant 4)

“It certainly played a major factor for the simple fact that I was not physically ready for doing this and for my two previous Ironman I was physically ready. This one I was not
physically ready for and so my mental preparation and my mental attitude going in and
during the race made all the difference in the world. Yes, it was huge.” (Participant 5)
CHAPTER 4
DISCUSSION

The purpose of this study is to describe the mental preparation techniques of Ironman triathletes before a race and to describe how these triathletes feel this preparation helped and/or hindered their accomplishment of race goals. Preparation, previous experience, choice of focus, breaking down the race and camaraderie/social support were the 5 major themes found to answer the first research question: What type, if any, mental preparation techniques are used by Ironman triathletes? In response to the second research question, how do Ironman triathletes feel their mental preparation contributed to their accomplishment (or lack of accomplishment) of race goals, a theme of mental preparation having a positive influence on their racing was found. This section will discuss these themes as examined in the context of established theories and previous research, as well as explore implications, limitations and conclusions based on the results.

What type, if any, mental preparation techniques are used by Ironman triathletes?

It was found in the interviews that in fact many mental preparation techniques are being used by Ironman triathletes. While each participant had a unique way of implementing these techniques and then describing them through the interview process, there were 5 main themes found to be used by all participants.

Theme #1: Preparation

Participants experienced both physical and mental planning techniques throughout their training in order to feel prepared for their upcoming race. Many times this came in the form of following a training plan, which established confidence in their physical abilities. This was
essentially the sport psychology skill of goal mapping. As found in a meta-analysis by Locke and Latham (2002), goals have four functions. One which is particularly applicable to the planning and preparation process the Ironman triathletes experienced was the directive function. The directive function explains “they (goals) direct attention and effort toward goal-relevant activities and away from goal irrelevant activities” (p. 706). By following a specific training plan, the participants were able to specifically direct their efforts in a methodical way toward their race goals. By using a training plan, and then a racing plan, the participants were effectively directing their attention to the goal at hand i.e. preparing for the race. The participants felt confident about their abilities to race because their efforts had been correctly distributed over the course of training and preparation.

Additionally, visualization was stated as a preparatory skill implemented by the participants. The term visualization was how the participants explained the skill, but in many instances they were using imagery, incorporating more senses than just the visual component i.e. “I do try to visualize myself with good form, feeling good, being strong and in control, throughout the run and I try to really think about what that feels.” (Participant 2) Shown by Cumming (2002), imagery was seen as a form of deliberate practice, used more frequently by higher performing athletes than recreational athletes. By imaging the race experience in their minds, the participants were creating and living the race experience ahead of time as if they were actually practicing them, building confidence and seeing themselves effectively handling adversity.

The idea of pre-planning a way to handle adverse sport situations is also a well-known concept and was very frequently mentioned by the participants. Most of the participants knew which specific areas of the race would be most challenging for them and planned accordingly. Inherent in an ultra-distance race like an Ironman, it would be virtually impossible to go upwards
of 17 hours without a single thing going wrong. In acknowledging this, the participants began to mentally prepare for the unavoidable rough patches of the race. This planning is supported by a study on Olympic athletes who, when failed to plan for adversity, were 3 times more likely to not meet their outcome expectations (Gould, Guinan, et al. 1999). With the Olympians, similar to the Ironman triathletes, having a plan developed as a way to recover when adversity struck, provided them with the knowledge and confidence in being able to overcome it and succeed.

Theme #2: Previous Experience

The theme of previous experience was discussed by the participants though previous races or by training at similar distances as a source of confidence which reassured them that they were capable of accomplishing their goals. This theme is in clear support of Bandura’s self-efficacy theory (1977). In this theory, self-efficacy is derived from four different sources with performance accomplishments perhaps being the most dependable. “This source of efficacy information is especially influential because it is based on personal mastery experiences. Successes raise mastery expectations” (Bandura 1977, p. 195). With all participants having had at least similar racing i.e. other Ironman’s, Half Ironman’s, marathons, etc., they had the “personal mastery experiences” Bandura was talking about. From these successes, participants were able to develop a self-efficacy manifesting in race confidence.

Theme #3: Choice of Focus

The participants commonly cited what they chose to focus on during training and the race as a mental skill. While they focused on a variety of things at various times, the commonality was having control of the focus and knowing where to direct it when. The participant’s areas of
focus, while broad, all seem to fit into the mental skill of self-talk, which can be used as a way to regulate where one is focusing. While only one participant identified what he was doing as self-talk, all of the subthemes (aside from distraction, or in other words striving for the absence of self-talk) lend themselves to be identified as such.

The use of self-talk by the participants is consistent with Hardy, Gammage and Hall’s (2001) theoretical framework of why athlete’s use self-talk. In this framework self-talk is split between cognitive and motivational types. The types of self-talk used by the participants all fell into the motivational category, which can be further broken down into subcategories which embody the sub themes found in choice of focus: maintaining drive, increasing drive, encouragement and reaching potential (positive thoughts/motivation), goals (focus on finish), self-confidence, control and mental readiness (self-focus) and relaxation (calming/relaxation).

Theme #4: Breaking Down the Race

The theme of breaking down the race meant for the participants that thinking about the entire race as one goal was too overwhelming and complicated to comprehend without losing confidence or feeling anxious. By breaking both longer training sessions and the race down into small, more manageable increments, the perception was changed to a much easier task. While each participant had an outcome goal (finish a specific amount of mileage in this workout, finish the race in this time, etc.), as shown by Filby, Maynard and Graydon (1999), it is beneficial to set process goals that work toward the outcome goal. “The benefits of adopting an outcome goal are realized only when the outcome goal is combined with the prioritization of a “process orientation” immediately before, and during performance” (p. 242).
The importance of maintaining a process orientation may be because “the negative effect of an outcome goal only strategy might be derived from increased levels of competitive state anxiety and degraded attentional focus during performance” (Filby, et al, p. 242). This idea of anxiety over focusing solely on the outcome goal of finishing the race is right in line with what the participants were experiencing. Especially in a situation like the Ironman where it would be challenging and daunting to comprehend having to race 140 miles, the participants realized the importance of developing some way to cope. By shifting focus from an overwhelming outcome goal which would produce anxiety and lack of focus, the participants used a process goal orientation in order to “break down the race”.

Theme #5: Camaraderie/Social Support

For the participants, having some sort of social support was mentioned to make training and racing easier, as well as providing a positive sense of moral. For the participants this support was found in many forms, including other triathletes, family and friends. Each participant had a slightly different way in which this camaraderie and social support manifested, which coincides with Rees and Hardy’s (2000) study demonstrating social support as being multi-dimensional in nature. The types of support outlined in Rees and Hardy’s framework which were seen as experienced by the participants include emotional, esteem and tangible support. Emotionally, family and friends were there to help deal with sport specific worries and problems, as well as on-site (race day) concerns (p. 333). Esteem support was found in other competitors by the participants, whether it was training partners: “I train with a group, so there is a camaraderie aspect; you know that helps mentally through our workout.” (Participant 2) or fellow racers: “But I kept with this guy who was having a difficult time himself and we decided to do the last
13 miles together. So what we did do is we kept talking to each other and encouraging each other and telling each other stories and talking to each other, telling each other different things to get off thinking about what we were doing, thinking about other things instead and also, you know, pushing each other.” (Participant 5) This esteem support fell in line specifically with the encouragement, motivation and help at competition components of Rees and Hardy’s framework (p. 334). Finally, tangible support was seen by the participants in the form of surprise notes along the course from family as well as being provided special needs bags that would be categorized by Reese and Hardy as reducing worries about practical matters (p. 336).

*How do Ironman triathletes feel their mental preparation contributed to their accomplishment (or lack of accomplishment) of race goals?*

Participants, regardless of accomplishment of goal, showed themes of their mental preparation having a positive influence on their racing. In addition, all participants expressed being aware of their use of mental skills in both training and racing, as well as acknowledging their importance in the Ironman process. This goes back to the work of Grand’Maison (2004) in which found 97% of those interviewed responded strongly or very strongly when asked “How important do you believe that mental skills are in Ironman training and racing?” What is surprising is that she found in the same sample only 37% said they practiced a form of sport psychology often in training and even fewer, 27%, utilized it in races (Grand’Maison, 2004), which was not represented by the participants of the current study. Potential explanations for the difference Grand’Maison found is the Ironman triathletes’ lack of knowledge about how to
properly employ certain mental skills or perhaps an uncertainty of what would be considered a mental skill in that they are in fact using them, but don’t identify them as such.

*Multiple Skills Framework*

With the present results, while each themes developed is specific and unique, they lend themselves to be viewed as an integrated entity. While each theme was identified individually, more often than not the participants discussed each mental skill in conjunction with one or more other skill. Inherently, some themes and subsequent subthemes are closely related to one another and in fact many times the participants transitioned from speaking about various skills fluidly and seemingly unintentionally.

Furthermore, consistently across participants all 5 themes were mentioned and the combination of all mental skills seemed to be what was most effective as far as mental preparation. With no one skill being identified as being more influential on success over another, it seems the combination of a variety of skills provides a complete and holistic look at the mental preparation process of the participants. From such, it can be said that a framework comprised of multiple mental skills was being utilized by the participants during their race preparation.

*Implications and Limitations*

The findings of this research contribute to the knowledge about the mental preparation techniques which are being utilized by Ironman triathletes, as well as insight in to their perceived importance of these skills. While multiple themes were uncovered, there is still a need for further research on this topic. It can be suggested that there needs to be a look at each individual mental skill’s impact on an Ironman triathlete’s training and racing. With regard to both enjoyment and
performance, it seems it may be beneficial to look at one skill at a time in the form of an intervention. In addition, the present study utilized only male participants who were competing in the same race and were all members of the same triathlon club. Because of this club affiliation, it is possible that literature or even simple conversations about mental skill use in Ironman training and racing could have reached each participant in similar forms, and therefore influenced their choice of skills utilized. Additionally, themes which were discovered with regard to having a positive association with the use of mental skills may also be due to the participant selection; those who volunteered to be asked about their use of mental skills may use them more frequently or may value them more. Because of this, it can be suggested to conduct research on a more diverse population.

An additional limitation of this research is the inherent concerns which come with an interview specifically the matter of accurate descriptions of memories. While perhaps it is possible that only the most influential mental skills which were used by participants were brought up during the interviews, this also means their lists were not exhaustive. With recall there was also an element of delay, especially with regard to the post-race interview. All participants claimed their mental preparation had a positive influence on their racing, but this realization may have come after the fact when given time to contemplate the use of mental skills, especially knowing they would be asked questions on it later.

Coaches, sport psychology consultants, and Ironman triathletes may be able to apply the practical aspects of these findings. Because participants cited mental skills which they believe to be helpful, the skill themes could be used as a starting point for triathletes looking to add mental training into their physical training. Furthermore, with all participants attributing at least some of
their racing success to their use of mental skills reinforces the importance of making it a component of their preparation.

Conclusions

- Triathletes in the present study had a schedule and/or plan for training and racing.
- Triathletes in the present study used visualization as a way to prepare for racing.
- Triathletes in the present study mentally prepared for adversity to occur during racing.
- Triathletes in the present study drew on their previous experience as a mental skill.
- Triathletes in the present study used their choice of focus as a mental skill.
- Triathletes in the present study chose to focus on distraction and/or outside factors, positive thoughts and/or motivation, outcome and/or the race finish, a self-focus and on being calm and/or relaxing.
- Triathletes in the present study broke down long training sessions and the race into smaller increments.
- Triathletes in the present study used camaraderie and social support during training and racing.
- Triathletes in the present study viewed their mental preparation as having a positive effect on their racing.
- From the themes discovered in the present study, a framework comprised of multiple mental skills was being utilized by the participants during their race preparation.
REFERENCES


APPENDIX A

RESEARCH QUESTIONS, LIMITATIONS, ASSUMPTIONS AND DEFINITIONS

Research Questions

1. What type, if any, mental preparation techniques are used by Ironman triathletes.

2. How do Ironman triathletes feel their mental preparation contributed to their accomplishment (or lack of accomplishment) of race goals?

Limitations

Skill level/experience - I will not be controlling for skill level or experience level of participants

Race recall – since post race interview will be done a few to several days following race, participants may provide altered information because of time delay (participants forgetting or having time to reevaluate why goals were/weren’t accomplished)

Convenience sample - using non-random participants

Time frame- only able to use participants who are competing within time span I can collect data.

Delimitations

Time frame- only using participants competing within time of study

Guided interview- I will be asking questions about specific types of mental preparation
Ironman triathletes- I will only be interviewing triathletes racing in Ironman triathlons.

Pre/post interviews- both interviews will be conducted within a week of the race.

Assumptions

1. Participants will respond truthfully and to the best of their ability
2. Participants’ race goals are realistic for their ability and experience.
3. Participants are training physically in a way that will prepare them to accomplish race goals.

Definitions

- Ironman triathlon: a 2.4 mile swim, 112 mile bike and 26.2 mile run race sanctioned by the USAT (USA Triathlon, 2010).
- USAT (USA Triathlon): The official governing body of triathlon in the United States.
- Mental skills/Mental training/Sport psychology training: mental processes which are utilized by the athlete to improve performance which can include but are not limited to: anxiety/arousal management, goal setting, attention/concentration, imagery, self-talk, time-management, organization and communication.
- Grounded Theory: “The researcher attempts to generate or discover a theory of a process, action or interaction grounded in the views of the research participants…Research involves multiple stages of data collection and refinement of abstract categories of information” (Bloomberg & Volpe, 2008).
APPENDIX B

ANNOTATED BIBLIOGRAPHY


This book is a step-by-step guide on how to complete a piece of formal, qualitative research. Bloomberg and Volpe thoroughly explain qualitative research methods, terminology and theories. Chapter by chapter, the authors explain how to format each section of a piece of research and give examples of how it should look. The structure of this study will be based off the guidelines of *Completing Your Qualitative Dissertation: A Roadmap from Beginning to End* and the researcher will use the knowledge gained from the book to develop a conceptual framework for the study.


In this study, recreational marathon runners were interviewed about their experiences of “hitting the wall” and how the participants coped when this happened. The data was collected and analyzed using the grounded theory of qualitative research methods following the
methodology of Charmaz (2002). The major contribution the researcher found from this study was the organization of collected data and presentation of results. Since many of the coping responses found were in some way a mental skill, the way researcher will probably find similar categories and themes among the data in the current study. The researcher anticipates using the concept of hierarchical inductive analysis in results section of Burman, Omlí, Giacobbi and Brewer (2008) as a guideline.


This study examined the length of sport involvement, amount of time spent training and the type of training regimen of ultra-endurance triathletes and how these things correlated with race performance. It was found that the theory of deliberate practice, or sport-specific practice, and the theory or periodization, or periods of high stress training followed periods of low stress training, were supported in this study but the concept of the need for early specialization was not. Aside from the fact that this study dealt with the same population as in the current study, the findings by Baker, Cote and Deakin (2005) will also help the interviewer with an understanding of the training Ironman triathletes are involved with. Knowing which training patterns are used by higher performing triathletes may help guide the interviews and eventually with data organization.

In this study, Baker, Cote and Deakin were interested in determining if there are any cognitive differences in ultra endurance triathletes who finished in less than 9.5 hours (experts), around 12.5 hours (middle of the pack) and in more than 14 hours (back of the pack). An inductive qualitative analysis was used in conjunction with the recall of cognitions experienced while watching a video montage of periods of high decision making during an ultra triathlon. It was concluded that the experts were more focused on active, performance related thoughts throughout the race while mid and back of the pack were more focused on passive, non-performance related thoughts.

These findings provide reason for the researcher to believe attentional focus may be a skill which will be referenced in the interviews. With the ultra triathlon containing many critical transition and decisions making points and now knowing those who excel in these events focus attention on performance, being aware and perhaps learning to control type of focus may be influential to the accomplishment of race goals.


Corbin and Strauss (1990) is a comprehensive explanation of conducting grounded theory research. Since its publishing, this piece of literature has been referenced many times in grounded theory research and has become a well recognized way to structure grounded theory research. Perhaps the most imperative portion of this paper for the researcher is the instruction of
the coding process. Further, specific criterion for what information needs to be presented to the reader and the criterion for developing the empirical grounding of findings are explained. The researcher will be utilizing these suggestions with regard to the entire research process.


Cote, Salmela, Baria and Russell recognized the increase in use of qualitative research in the field of sport psychology and that to date there had been no explicit method developed on how to organize the large amounts of data obtained from this type of study. In this article, it is explained how to organize the data by coding and creating categories; two steps which are now standard in qualitative analysis. Specifically, this piece of literature discusses how to apply these practices to the arena of sport psychology. The researcher will be incorporating the steps developed by Cote et al. in the data analysis of this study.


This study by Karine Grand’Maison is extremely important with regard to the development of further research and interventions for ultra triathletes. She looked what motivates ultra triathletes to train and compete, and what types of obstacles they face. Furthermore, she looked at how many of these triathletes were using mental skills training and which skills they wished to develop. “Although two thirds of the respondents reported that their knowledge of sport psychology was limited or inexistent, 97% of triathletes said they believed strongly or very strongly that mental skills were key to success.” What was concluded was that ultra triathletes
need to be provided with “practical and effective guidelines that work in the real world of performance.”

Essentially, Grand’Maison’s study provides justification for the present study. With so many Ironman triathletes hoping to develop effective mental skills in both training and competition, the findings of this study may help identify which techniques are currently being used by the participants as well as discovering how these techniques may be influencing goal accomplishment. Also, knowing which mental skills ultra triathletes find important and are looking to develop will aid the interviewing and data analysis process.


For the most part, this article is an overview of the background and development of constructivist grounded theory from its onset. It concludes explaining that grounded theory attempts to explain and in turn “allows [people] to identify with theory and use it in their own lives”. This statement is what the researcher is hoping to accomplish through this study. In addition, specific topics that are important to be included in current grounded theory work are discussed by Mill, Bonner and Francis, such as theoretical sensitivity and the treatments of literature. These insights will be taken into consideration throughout the research process.

Stoeber, Uphill and Hotham were interested in examining the connection between perfectionism, types of goals set and performance level. With competitive Half-Ironman participants, this study concluded that personal goal setting mediated the relationship between performance-approach goals and performance. For the purpose of what the current study will be looking at, these findings are important because it implies goals which are specific and performance-approach in nature may be more commonly used by ultra triathletes who accomplish their race goals. Knowing this will aid the interview and data analysis process.


http://assets.usoc.org/assets/documents/attached_file/filename/10593/TMOTT_Executive_Summary_.pdf

This study conducted by USA Triathlon (USAT) and the Tribe Group is essentially a demographic breakdown of the current triathlon participants in the United States. Since all “legitimate” triathlons, i.e. Ironmans, in the United States are regulated by USAT, and one must be a member of USAT to compete, these statistics are very reliable and representative. The findings of this study were the best way for the researcher to determine how many current competitors there are of Ironman triathlons along with a lot of other demographic information that could be useful in further research. Also, the data found in this study helps justify the current study simply by showing how large the phenomena of the triathlon has become, and continues to increasingly be.