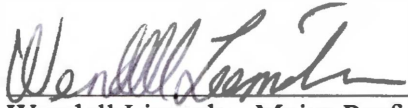


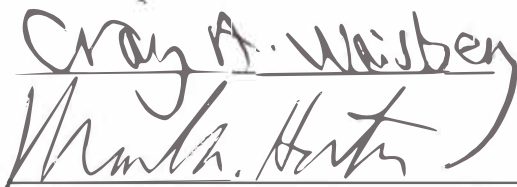
To the Graduate Council:

I am submitting herewith a dissertation written by David Keith Fitzhugh entitled "Pygmalion in the Athletic Training Room: A Qualitative Case Study Approach." I have examined the final paper copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

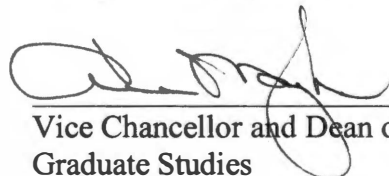

Wendell Liemohn, Major Professor

We have read this dissertation
and recommend its acceptance:





Accepted for the Council:


Vice Chancellor and Dean of
Graduate Studies

Pygmalion in the Athletic Training Room: A Qualitative Case Study Approach

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

David Keith Fitzhugh
May 2004

Thesis
2004b
.F58

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DEDICATION

I would like to dedicate this work to my wife, daughter, and grandparents. I absolutely could not have accomplished this milestone with the help of my wife and daughter. You two are the love of my life. I would not be the person I am if I didn't have both of you in my life. Thanks so much for believing in me. Grandma Fitzhugh thanks for all your support especially in my undergraduate days. If you hadn't helped me out back then, I would have never arrived here. Finally, I would like to dedicate this to the memory of my Grandma and Grandpa Kucera. Although they never understood what exactly I was studying, they were always so proud of me. I will never forget that.

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Special thanks needs to go out to my research team. You took time to help me out even when you all were so busy yourselves. You also kept me grounded and finally made me see the light. Thank you so much Susan, Karen, and Ash. In addition, I would like to give a special thanks to Susan. You stimulated my thinking regarding social issues and really helped me become a better person. I definitely got more out of those workouts in the bubble than just a healthier heart.

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Jess, Angie, and my softball and wrestling teams. You all gave me so much support and were understanding during this process. A special thank you goes to Jess whom was always there to talk to and bounce things off of when I needed it.

ABSTRACT

The purpose of this study was to explore and attempt to understand how Pygmalion works in the rehabilitation environment and how it may influence the rehabilitation adherence of injured athletes. A qualitative case study approach was used to explore athletic trainers' and athletes' experiences with expectancies and their subsequent influences at one NAIA College. Five athletic trainers and 10 injured athletes participated in this study. Each athletic trainer ranked his/her injured athletes from high to low ability for rehabilitation. A high and low ability injured athlete was interviewed for each athletic trainer. Results of this study revealed potential Pygmalion effects that may have influenced rehabilitation adherence. In these cases, high ability-ranked athletes seemed to perceive a warmer rehabilitation environment and the willingness of the athletic trainer to serve as part of their social support network resulting in better rehabilitation compliance and adherence as compared to low ability-ranked athletes. However, in some cases, Pygmalion effects appeared to be present but athletes did not seem to be influenced by them, consistent with previous literature positing that athletes are not all Pygmalion-prone. Additionally, some athletic trainers appeared to have unrealistic expectations of their injured athletes, resulting in a misperception of the athletes' abilities and laying the foundation for Pygmalion effects.

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CHAPTER I INTRODUCTION TO THE PROBLEM

Introduction

During a Psychology of Sport class, I read a paper discussing the Pygmalion effect within the coach-athlete relationship and surmised that the same effect could exist in the athletic trainer-athlete relationship as well. This revelation led to the current study, which represented an attempt to explore and understand the role of expectancy and its possible influences on rehabilitation adherence. To better understand how this may occur, two descriptive scenarios are provided that highlight and link the two theoretical constructs of expectancy and rehabilitation adherence.

Scenario #1

An athlete, who can best be described by the athletic training staff as a “frequent flyer” due to his frequent visits to the athletic training room with different ailments, walks into the athletic training one day in the middle of the semester and approaches his athletic trainer. The athletic trainer looks up from her desk and immediately thinks to herself “what now?” This is the umpteenth time this athlete has come in and each time he comes in with a different injury that he subsequently fails to rehabilitate. As the athlete approaches the athletic trainer, she gets up and sighs, then asks in a polite but short way what is wrong? The athletic trainer examines the athlete and writes up an injury report. The athletic trainer expects that this will be the only time this athlete will come in for this particular injury. The athletic trainer, in the belief this athlete is not going to be adherent, sets up an initial rehabilitation program that is perceived as unchallenging by the injured athlete. The athlete believes this rehabilitation regimen is

unbeneficial and decides not to go back to the athletic training room, which reinforces the athletic trainer's initial expectation of nonadherence.

Scenario #2

The coach and athletic trainer for basketball are talking about how the team's prospects for the upcoming season when the coach makes a remark about one of his players. The coach states that this particular player is lazy and will probably not start or play much. A few weeks later the basketball player in question comes into the athletic training room with an injury. The athletic trainer immediately remembers the conversation with the coach and believes this athlete is lazy even though he does not knowingly let this influence his examination and subsequent treatment plan. However, based upon the coach's remarks the athletic trainer has fairly low expectations of the player.

The athletic trainer works with this athlete when he comes in, but usually spends more time with other players who are considered the stars of the team. This upsets the athlete and makes him feel that he is not as important as his teammates. After a week of rehabilitation the athlete quits coming to the athletic training room even though his teammates state he is still having injury problems. This then reinforces the athletic trainer's initial belief that this athlete is lazy and completes the self-fulfilling prophecy cycle.

Scenario Discussion

Both of these examples highlight how athletic trainers can form expectations of athletes and communicate these expectations either covertly and/or overtly. Athletic trainers are educated not to discriminate against athletes regardless of playing ability or

how often they report injuries. However, athletic trainers do have opinions concerning athletes and these help form expectations. These expectations can be based upon personal, psychological, and physical abilities athletes demonstrate both on and off the playing field (Solomon, 2001a; Solomon 2001b; Solomon, 2002; Solomon & Rhea, 2002).

Although athletic trainers may not make explicit their expectations concerning their athletes, these expectations may be communicated indirectly. In the first scenario, the athletic trainer's body language and sighing sends a signal to the athlete who perceives this negatively and begins to believe the athletic trainer expects very little from him. This is reinforced by the unchallenging rehabilitation program the athletic trainer sets up. Since the athlete attributes this to an uncaring athletic trainer, he decides not to come in for rehabilitation. The athletic trainer doesn't realize she has sent a signal communicating a negative, uncaring attitude. Instead, she believes this nonadherence supports her contention that this athlete will not be adherent in his rehabilitation program, completing the self-fulfilling prophecy cycle.

In the second scenario, the athletic trainer spends more time with the "star" athletes. The injured athlete perceives he is less important and, therefore has less expected of him in the rehabilitation arena. Due to this perception, the athlete stops coming to the athletic training room for rehabilitation although his injury still bothers him. From the perspective of the athletic trainer, this nonadherence confirms his and the coach's belief that this athlete is lazy. This, in turn, completes the Pygmalion cycle.

Rosenthal and Babad (1985) contend that we communicate our beliefs by behaving in ways that will cause others to behave as we expect. These beliefs are

communicated by multiple means. In the first scenario, the communication comes from the differential body language and remarks the athletic trainer makes towards the athlete in question compared to that of other athletes. Additionally, it has been suggested by Wilder (1994) that an unchallenging rehabilitation program can further communicate low athletic trainer expectations. In the second scenario, the athletic trainer unknowingly spends more time and consequentially provides more feedback to the athletes he perceives as stronger players. Once the athletes pick up on the signals communicating these expectations they make a decision not to adhere to their rehabilitation program, causing the self-fulfilling prophecy to come true.

These scenarios attempt to highlight the possibility that the beliefs athletic trainers use to form their expectations may influence the rehabilitation adherence of athletes. The concept of the self-fulfilling prophecy has been explored in other areas including the classroom, gymnasium, and athletic fields. It is not unreasonable to believe Pygmalion effects can exist in the athletic training room. This study was conducted to explore and understand how Pygmalion works in the rehabilitation environment and determine its influence, if any, on the rehabilitation adherence of the injured athlete.

Brief Overview

In 1948, Merton developed the concept of the self-fulfilling prophecy (Rosenthal & Jacobson, 1968). The self-fulfilling prophecy is defined in education as the relationship between teachers' attitudes towards their students and its influence on student behavior (Martinek, Crowe, & Rejeski, 1982). These attitudes are conveyed to the students either through covert or overt messages in the form of expectations. In 1968, Rosenthal and Jacobson published *Pygmalion in the Classroom*, which disseminated

research they had done on the self-fulfilling prophecy examining the interactions of teachers and their students. They found performances by students were high on assignments, in-class activities, and tests if teachers had high expectations of the students. The reverse was true if the teachers had low expectations of the students.

In 1982, Martinek, Crowe, and Rejeski published *Pygmalion in the Gym*, which examined research done on the self-fulfilling prophecy in physical education classes. They found that the self-fulfilling prophecy also existed in the gym between teachers and students. In the 1980's and 1990's, Solomon and her colleagues (Solomon, 2001a; Solomon, 2001b; Solomon, 1999a; Solomon, 1999b; Solomon, DiMarco, Ohlson, & Reece, 1998; Solomon, Golden, Ciapponi, & Martin, 1998; Solomon & Kosmitzki, 1996; Solomon, Striegel, Eliot, Heon, Maas, & Wayda, 1996) began systematically applying the concept of the self-fulfilling prophecy to the coach-athlete relationship. This research also demonstrated that Pygmalion effects exist on athletic playing fields.

However, the coach-athlete dyad is not the only interaction that occurs within athletics. Athletes come into contact with many individuals who can influence them. This includes managers, sport psychology consultants, the media, athletic trainers, physicians, and faculty members, to name a few. Within any of these interactions, there is a possibility of the athlete perceiving overt or covert signals that transmit messages of expectancy. Messages related to either low or high expectancy can influence the athletes' performance both on and off the field.

In the current study, the relationship between expectations of the athletic trainer (whether high or low) and the rehabilitation adherence of the athlete was explored to enhance understanding of how Pygmalion plays into the athletic trainer-athlete

relationship. Wilder (1994) intuitively linked these two theoretical constructs of expectancy and rehabilitation compliance and adherence. She contended athletic trainers with high expectations of their athletes may increase rehabilitation adherence and compliance by developing realistic and challenging rehabilitation programs and by providing continual positive feedback to the athletes during this regimen. However, Wilder also stated athletic trainers with low expectations of athletes may inadvertently create a self-fulfilling prophecy. She believes this can occur when athletic trainers develop unrealistic expectations in the rehabilitation setting such as failing to make the rehabilitation regimen challenging enough for athletes whom they believe will not be adherent to their program. When athletes stop attending rehabilitation due to the low expectations of the athletic trainers, then the self-fulfilling prophecy comes true.

Statement of the Problem

The research question guiding the current study was “How do athletic trainer expectations influence rehabilitation adherence of injured athletes?” The relationship between athlete and athletic trainer has not been examined to determine if expectancies influence athlete rehabilitation adherence. This gap in the research warranted investigation.

Purpose of the Study

The purpose of this research project was to explore and attempt to understand how Pygmalion works in the rehabilitation environment and how it may influence the rehabilitation adherence of injured athletes. Additionally, as an athletic trainer himself, the primary investigator wanted to enhance personal understanding of the Pygmalion phenomenon from the perspective of athletic trainers and athletes. Since the athletic

trainer-athlete relationship is dynamic and interactional in nature, a qualitative study was indicated to understand the experiences and perspectives of the participants in their own words.

Significance of the Research

After numerous literature searches were conducted using ERIC, PsycINFO, PubMed, Academic Search Premier (formally ProQuest), and SPORTDiscus, no studies examining the self-fulfilling prophecy in the athletic trainer-athlete relationship were found. Additionally, Dr. Gloria Solomon, a leading researcher in this area, supported this contention during a telephone conversation (G. Solomon, personal communication, September 19, 2002). Both athletic trainers and athletes can benefit from understanding how the role of expectations influences athletes, particularly in relation to rehabilitation adherence. Understanding the self-fulfilling prophecy and its influence on rehabilitation adherence will allow steps to be taken to educate athletic trainers. This education could make athletic trainers more aware of the overt and covert messages they are sending and could even contain strategies to prevent these unintended messages. This then might improve the rehabilitation adherence of the athlete.

According to Wilder (1994), athletic training research has intensely examined rehabilitation techniques while paying little attention to the psychological aspects involved in rehabilitating injured athletes and the role of athletic trainers in this process. This study was designed to lay the foundation for further studies examining this weakness in the literature. Specifically, this study explored the expectations of athletic trainers and how it may influence rehabilitation adherence of injured athletes.

Hypotheses

According to Taylor (1994), qualitative research does not include the statement of any formal hypotheses, instead it allows the data to speak for itself, which allows theory to be developed from data analysis. However, Morrison, Haley, and Sheehan (2002) state that hypotheses can be altered or eliminated based upon the analyses of the data; this allows the researcher to state his suppositions from the start as long as they are flexible. It is the belief of the primary researcher that the self-fulfilling prophecy can exist in the athletic trainer-athlete relationship. This belief was based upon previous studies undertaken to examine this phenomenon in the classroom, gymnasium, and athletic field. It is not unreasonable to assume it will exist within the athletic training room as well. Therefore, the stated goal of this study was to understand how the self-fulfilling prophecy might be evidenced in the athletic training room from the perspective of both the athletic trainer and the athlete. In addition, an attempt was made to determine the subsequent influence of athletic trainer expectations on athletes' rehabilitation adherence.

Limitations

The following limitation applied to this study:

1. Athletic trainers and athletes were interviewed from the primary investigator's institution of employment, therefore creating the possibility that the participants may not be completely open or honest with their responses. Although this can occur anytime research is conducted, this may be more prevalent in this particular study. A reason for this is the researcher's familiarity with all the participants and the participants' familiarity with each other. To safeguard against this, athletes being supervised by the primary investigator and athletes in a class taught by the

primary investigator were excluded from this study. Additionally, assurances were given to the participants that their interviews would not be discussed with anybody else at the institution and every measure would be taken to keep transcripts confidential. Therefore, an attempt was made at the end of each participant's interview to explore whether the primary investigator's position made an impact on the honesty of responses.

Delimitations

The following delimitations apply to this study:

1. The participants were athletes and athletic trainers currently employed or enrolled at one NAIA college during the Spring of 2003.
2. The participants' ages ranged from 18 to 45 years.
3. Athletes were included in this study only if they sustained an injury requiring at least four weeks of rehabilitation in the athletic training room.
4. Only athletes injured during a sanctioned practice or competition were allowed to participate.

Definitions

The following definitions were adopted for this study:

Adherence: A voluntary long-term commitment by the athlete to a treatment plan (Prentice, 2004).

Athlete: An individual who receives medical and rehabilitative care from a sports medicine team member that includes an athletic trainer or physician (Houghlum, 2001).

Athletic Trainer: An allied healthcare professional who works closely with a physician to care, treat, and rehabilitate injuries that occur to the physically active. In addition, the National Athletic Trainers' Association Board of Certification (NATABOC) must certify the individual as an athletic trainer.

Compliance: A term utilized to describe an athlete's attitude and effort during rehabilitation sessions in the athletic training room (Brewer, Van Raalte, Petitpas, Sklar, & Ditmar, 1995; Prentice, 1999).

Expectations: Initial judgments or assessments by a person based upon available information allowing him/her to determine the competence or physical ability of the athlete. These can serve to form self-fulfilling prophecies (Horn, Lox, & Labrador, 2001).

Expectancy Theory: A theoretical framework also called the self-fulfilling prophecy that developed from the work of Merton (1948) (Solomon, 2002). A stimulus to behavior caused by the expectation of a specific event happening that actually makes the behavior occur (Solomon, 2002).

Impression Cue: Different categories used to broadly identify initial judgments or assessments used by individuals to form expectations of an athlete's competence or potential (Horn, Lox, & Labrador, 2001).

NAIA Institution: A college or university participating and competing under the auspices of the National Association of Intercollegiate Athletics (NAIA) with various sport teams.

Pygmalion Effect: Occurs when an individual's behavior conforms to their belief of how they are expected to behave, sometimes referred to as a self-fulfilling prophecy (Kierein & Gold, 2000; Martinek & Johnson, 1979).

Rehabilitation: A regimen administered by an athletic trainer that entails "activities and procedures designed to enhance the physical recovery process" of an injured athlete (Brewer, 1999, p. 145).

Rehabilitation Adherence: Quantified by taking the number of rehabilitation sessions the athlete attended and dividing by the number of rehabilitation sessions the athlete was expected to attend (Brewer, 1999; Brewer, Daly, Van Raalte, Petitpas, & Sklar, 1999).

Self-Fulfilling Prophecy: A term developed by Merton (1984) to describe a new behavior of an individual based upon a false conception of a situation that makes the original false conception true (Merton, 1948). An additional definition by Horn, Lox, and Labrador (2001) is the formation of expectations by coaches concerning the abilities of their athletes that serve as prophecies that can determine the achievement level of the athletes.

CHAPTER II REVIEW OF LITERATURE

Introduction

Rehabilitation adherence is of great importance for both athletes and athletic trainers. The goals of rehabilitation are the same for each group. Each wants the athlete to return back to activity at the same or better level of ability following an athletic injury. In order to accomplish this rehabilitation objective, athletes must adhere (attend rehabilitation) and comply (apply effort) with the rehabilitation program set up by athletic trainers. In return, athletic trainers must make use of current theoretical knowledge to determine progressions and types of rehabilitation exercises to be utilized by the athletes. During this process, many factors may influence the adherence of athletes to the rehabilitation protocol. One influential factor worth examining is the athletic trainer's expectancies of athletes during this process (Wilder, 1994). Thus, it is possible that the self-fulfilling prophecy could influence the rehabilitation adherence of injured athletes.

The present chapter has three major foci. First, a review of current research examining the self-fulfilling prophecy and its historical context is presented. Next, a review of the current knowledge regarding rehabilitation adherence of injured athletes is provided. Finally, an examination of how the self-fulfilling prophecy may result in positive or negative outcomes with regard to rehabilitation adherence is explored.

The Self-Fulfilling Prophecy

Brief Historical Overview

In 1948, R. K. Merton proposed the concept of the self-fulfilling prophecy in *The Antioch Review* (Merton, 1948). He followed this in 1957 with his book *Social Theory*

and Social Structure which expanded upon his earlier work (Merton, 1957). Being a sociologist, Merton believed that the self-fulfilling prophecy had implications in all avenues of a person's life, including economics, industry, and even race relations. As he stated, "If low expectations and standards can reinforce a sense of failure among culturally disadvantaged people, then these groups become victims of the self-fulfilling prophecy since failure can possibly reinforce inferior feelings" (Merton, 1957, p. 421).

Taken within the context of the 1950's, Allport (1950), another behavioral scientist, suggested that the self-fulfilling prophecy could have wide applications on the international level by creating tension and possibly armed conflict between countries. Taken a step further, it could be said that this phenomenon was very prevalent during the cold war era and came to light especially during the Cuban Missile Crisis. The United States developed an expectancy of war with Cuba. This expectancy in turn strengthened Castro's expectancy of having to defend his country against the United States. This developed a vicious cycle that almost resulted in the two countries going to war, or making the self-fulfilling prophecy a reality. This phenomenon was also prevalent between the United States and the USSR during the armed deterrence period of the cold war.

In the late 1960's, Rosenthal and Jacobson (1968) conducted a study that was subsequently published in their book entitled *Pygmalion in the Classroom*. The purpose of their study was to examine if children who were expected to grow more intellectually would actually demonstrate more intellectual growth than a control group of children (Rosenthal & Jacobson, 1968). They found evidence to support the notion that the self-fulfilling prophecy existed in public education. Most of the research conducted in the

1970's was within this environment.

During the 1980's, Martinek and colleagues (Martinek, Crowe, & Rejeski, 1982; Martinek & Karper, 1982; Martinek, 1981b) applied the concept of self-fulfilling prophecy to physical education and sport by examining teacher-student and coach-athlete relationships. Again, data were collected supporting the self-fulfilling prophecy. The results from these studies led to the publishing of *Pygmalion in the Gym*, which examined the relationship of teacher or coach expectations and their influences on students and athletes (Martinek, Crowe, & Rejeski, 1982).

Another prominent researcher who has contributed to this literature is Gloria Solomon and her colleagues (Solomon & Rhea, 2002; Solomon, 2002; Solomon, 2001a; Solomon 2001b; Solomon, 1999a; Solomon 1999b; Solomon, DiMarco, Ohlson, & Reece, 1998; Solomon, Golden, Ciapponi, & Martin, 1998; Solomon & Kosmitzki, 1996; Solomon, Striegel, Eliot, Heon, Maas, & Wayda, 1996; Solomon, Wiegardt, Yusuf, Kosmitzki, Williams, Stevens, & Wayda, 1996). Solomon (2001b) examined a multitude of factors within the expectancy framework including expansion of the impression cues utilized in the self-fulfilling prophecy cycle postulated by Martinek, Crowe, and Rejeski. Additionally, Solomon (1999b) examined if ethnicity or race influenced coaches' expectations. Much of this research is discussed in greater detail in the next section.

Origin of Pygmalion

The earliest reference of the term "pygmalion" dates back to ancient Greece. Pygmalion was the king of Cyprus who was also a very talented sculptor (Moon, 2002). One day, Pygmalion decided to carve a beautiful woman out of ivory. As Moon (2002) suggests, Pygmalion diligently worked on sculpting his statue until it was perfect. He

immediately fell in love with it due to its beauty. “He clothed the figure, gave it jewels, and named it Galatea (sleeping love)” (Moon, 2002). Of course, the statue did not return any of Pygmalion’s affection. Eventually, Pygmalion traveled to Aphrodite’s temple praying to the goddess to give him a wife as beautiful as his statue (Moon, 2002).

Aphrodite, curious about what was causing Pygmalion to make such a request, visited his home and was so impressed with the statue’s beauty she granted it life. After Pygmalion returned home he found his Galatea very much alive and they eventually wed and lived the rest of their lives together (Moon, 2002).

In the current expectancy literature, the term “pygmalion” appears to be used synonymously with expectancy theory and the self-fulfilling prophecy. *Pygmalion* was also the title of a classic play by George Bernard Shaw (1951), which demonstrated the concept of the self-fulfilling prophecy through the theory of expectancy. In this play, a young, uneducated flower girl named Eliza, with a poor grasp of the English language, is befriended by Professor Higgins who makes a bet with a friend, Mr. Pickering that he can make this poor flower girl into a sophisticated, educated woman. Once transformed, Eliza begins to feel controlled by Higgins whom she perceives will never see her as anything other than a flower girl.

A modern version of this story can be seen in *She's All That* starring Freddie Prinze Jr. and Rachael Leigh Cook (Abrams, Levy, & Gladstein, 1999). Freddie Prinze Jr., the most popular jock in school, makes a bet with his high school buddies that he can transform a less-popular, introverted art student played by Rachael Leigh Cook into the homecoming queen. Both of these stories demonstrate how the expectations of other people can result in a self-fulfilling prophecy coming true. In other words, people will

act and behave in a manner that is expected of them. The term “Pygmalion effect” is used to describe this phenomenon.

The Pygmalion Cycle

In 1978, Good and Brophy postulated a model theorizing three elements that determine whether the self-fulfilling prophecy exists in the teacher-student relationship. These elements are “(a) the original expectation, (b) behaviors that consistently communicate this expectation in ways that make it more likely to be fulfilled, and (c) evidence that the original expectation has been confirmed” (Good & Brophy, 1978, p. 73). Martinek, Crowe, and Rejeski (1982) then expanded on these three elements to include a four-step process of the self-fulfilling prophecy, explicated by Horn, Lox, and Labrador (2001). According to Horn, et al. (2001), the following steps are necessary in order for the self-fulfilling prophecy to be active in the coach-athlete relationship:

1. An expectation is developed by the coach for each athlete that foretells the types of behavior and performances expected from each athlete throughout the year.
 2. The expectations of the coach influence his/her behavior, whether overt or covert, towards each individual athlete. These behaviors are specific to each athlete based upon the coach’s perception of the athlete’s abilities and competence.
 3. The coach’s behavior towards the athlete conveys the coach’s perception of his/her abilities and competence, which in turn influences the athlete’s self-confidence, self-perception, motivation, and desire to improve.
 4. The athlete then conforms to these expectations by behaving and performing as predicted by the coach. This reinforces the original expectation of the coach, which perpetuates the cycle.
- (Horn, Lox, & Labrador, 2001, pp. 64-71)

The coach’s behaviors that transmit expectations to the athlete (Step 2 above) were delineated earlier in Rosenthal’s (1974) “four-factor theory.” According to Rosenthal, this theory is an inductively derived, well-suited, mutually exclusive, and

convenient categorization of observed behaviors. Each of the categories is easy to understand even though they are not based upon any previous theories of interpersonal relationships (Harris & Rosenthal, 1986). The four-factor theory was devised to categorize the specific types of behavior exhibited by teachers (or coaches) that are responsible for affecting the performance of their students (or athletes) (Martinek, Crowe, & Rejeski, 1982). Rosenthal postulated that compared to low expectancy students, high expectancy students are given better feedback in larger quantities, are given the feedback in a “warmer socio-emotional climate” (Solomon & Rhea, 2002, p. 4), are given more time to demonstrate they have learned more difficult material, and are given more opportunities or time to respond to questions. Rosenthal (1974) labeled these four factors as feedback, climate, input, and output, respectively.

Additionally, Rosenthal (1981) provided a ten-arrow model for understanding how expectancies are communicated and result in the altering of behaviors. The interconnections between these five elements are shown in Figure 1. In this model, Rosenthal (1981) provides a distinction between moderator and mediator variables. Moderator variables are uncontrollable variables unique to each individual such as gender, age, and personality that may influence interpersonal expectancies (Rosenthal & Harris, 1986). Mediator variables are the [coach’s] behaviors that communicate the expectations (Rosenthal, 1981). The model is composed of five variables, including (a) distal independent variables (e.g., age, gender, and personality of both the coach and athlete), (b) proximal independent variables or the expectancy, (c) mediating variables, which are activated during the process of communicating these expectations, (d) proximal dependent variables, which are the behaviors of the athlete as measured by performance

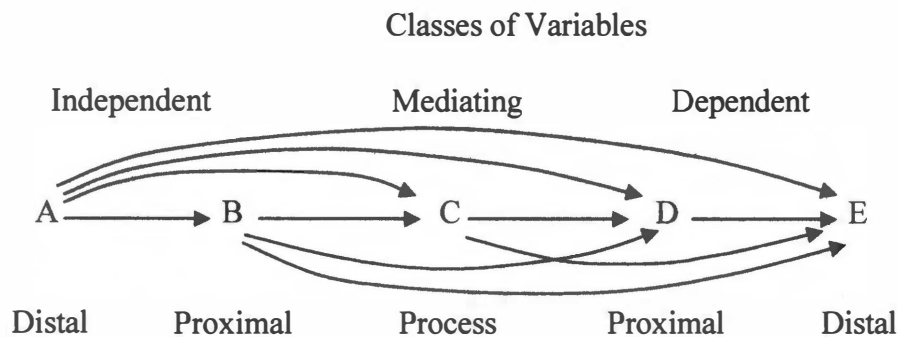


Figure 1: Rosenthal's (1981) Ten-Arrow Model

after being influenced by the coaches expectations, and (e) distal dependent variables or long term performance behavioral changes (Rosenthal, 1981).

Rosenthal (1994) contends that of the various interconnections, the relationship between BC and CD are the most important in examining interpersonal expectancy effects. The BC relationship demonstrates behavioral changes of the coach towards the athlete based upon his/her expectancies of the athlete. The CD relationship establishes that certain behaviors of the athlete (D) are directly related to changes in the behavior (mediating variable) of the coach (C). For example, if the coach expects the athlete to perform poorly and communicates this, either overtly or covertly (behavior X) to the athlete (BC), then behavior X may be regarded as a mediating variable which contributes to diminished performance by the athlete (demonstrated between CD).

Finally, Martinek (1989b) provided a model to explain how the expectancies of physical education teachers can affect student behaviors in the gym (See Figure 2). This four-step model begins with a teacher behavior directed towards the student. This is followed by the student perceiving the teacher's behavior and beginning to interpret it.

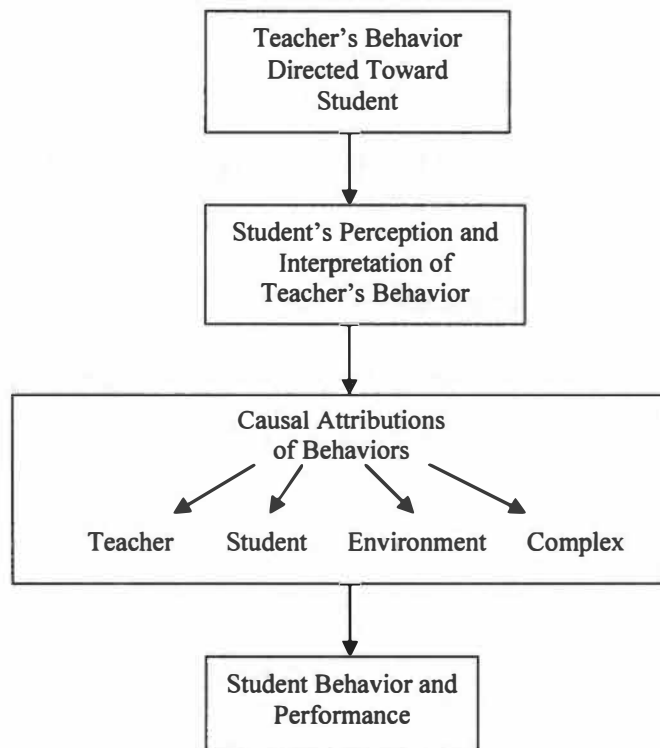


Figure 2: Martinek's (1989b) Attributional Model for Explaining Teacher Expectancy Effects

The third step is an expanded step that attributes causes to the teacher's behavior. These causal attributions can be categorized into four areas: teacher, student, environment, and complex (Martinek, 1989b). The teacher category includes those actions that the student attributes to teacher characteristics. Student attributes are those dealing with the teacher's actions that the student internalizes due to the belief they are justified. In the environment category, the student attributes the behavior to the specific situation currently present. Finally, in the complex category, the student attributes the teacher's behavior to more complex reasoning processes (Martinek, 1989b).

The fourth step of Martinek's model delineates the change in student behavior and performance based upon his/her attributions of the teacher's behaviors. Depending on

the student reasoning, these attributions may play an integral role in communicating expectancy information from the teacher to the student. This change in student behavior due to his/her attributions of the teacher's behavior could possibly create a self-fulfilling prophecy (Martinek, 1989b).

The Pygmalion Experiment

During the 1960's, Rosenthal investigated the self-fulfilling prophecy framework using laboratory rats (Rosenthal & Fode, 1963; Rosenthal & Lawson, 1964). These studies examined the expectations of the "experimenters" and their subsequent behavior toward the rats. The "experimenters" were experimental psychology students enrolled in Rosenthal's classes. To determine if the experimenters' expectations influenced the rat's behavior, performance measurements were taken on the rat's ability to accomplish specific tasks within a maze. The experiments were explained to the students as studies examining the enhanced abilities of genetically bred "maze bright" rats. Half the rats were labeled "maze bright" and the other half were labeled "maze dull." In reality, there were no differences between the rats. All were normally bred rats randomly assigned to the students. In addition, the students were asked to complete a questionnaire following the experiment to determine how they felt about their rats (Rosenthal & Fode, 1963; Rosenthal & Lawson, 1964).

The results demonstrated a significantly better performance of the "maze bright" rats compared to the "maze dull" rats. The students of the "maze bright" rats characterized their rats as brighter, more likeable, and more user-friendly compared to the students working with "maze dull" rats. The "maze dull" rats were characterized as difficult, stupid, and unlikable. Additionally, the students of the "maze bright" rats

described their behavior as more relaxed when they were handling the rats, compared to the students working with the “maze dull” rats (Rosenthal & Fode, 1963; Rosenthal & Lawson, 1964).

Rosenthal and colleagues concluded that their results demonstrated that the expectations of the experimenter might influence the subsequent performance of his/her subjects. These expectations were presumed to be transmitted to the rats through differential treatment, with the “maze bright” rats receiving positive, performance enhancing benefits and the “maze dull” rats receiving negative debilitating feedback. These benefits in turn increased the performance measures of the “maze bright” rats compared to the “maze dull” rats resulting in the fulfillment of the experimenters’ prophecy (Rosenthal & Fode, 1963; Rosenthal & Lawson, 1964).

In 1963, Rosenthal summarized the results of these studies in *American Scientist*. Lenore Jacobson, a principal at a school in South San Francisco, read Rosenthal’s report and responded to it by challenging him to study this phenomenon with people (Rosenthal, 2002). This challenge resulted in the design and implementation of The Pygmalion Experiment, as it has become known, in the Spring of 1964 (Rosenthal, 2002).

The researchers administered the Harvard Test of Inflected Acquisition (Rosenthal & Jacobson, 1968) to all the students at Oak School. The teachers believed the research study was an investigation of the validity of this test to determine the “blooming” intellectual ability of the students. In actuality, the test was Flanagan’s (1960) Tests of General Ability (TOGA), an IQ test rarely used within the educational setting. After baseline testing, the researchers randomly selected 20% of the students for the experimental group. The teachers were informed that these students scored extremely

high, indicating great intellectual ability. The researchers then left the teachers to their own accord, returning eight months later for post-testing using the TOGA. Teachers also completed a questionnaire concerning their perceptions of these “special” children compared to the other children in their class at this time (Rosenthal & Jacobson, 1968).

Results showed that children in the experimental group demonstrated significantly greater intellectual gains during the eight months compared to the control group (Rosenthal & Jacobson, 1968). This difference in intellectual gains was particularly pronounced for the means of first- and second-graders. Additionally, Rosenthal and Jacobson (1968) found that compared to the control children, teachers described the experimental children as more interesting, curious, and happy. Teachers described the control children as less well-adjusted, less interesting, and less affectionate, even when they demonstrated similar intellectual gains to those of the experimental children. They concluded that high expectancy students benefited from positive teacher expectations, which led to Rosenthal’s four-factor theory describing the behavioral factors that mediate these benefits.

Pygmalion in the Gym

In 1982, Martinek, Crowe, and Rejeski published their book *Pygmalion in the Gym: Causes and Effects of Expectation in Teaching*, which reviewed the self-fulfilling prophecy literature. Central to their review was the work of Rosenthal and Jacobson (1968). Additionally, Martinek, Crowe, and Rejeski reviewed the initial attributional model by Martinek (See Figure 2) and linked the expectancy literature to the physical education classroom. Since that time, several additional publications expanded on the initial content of *Pygmalion in the Gym* (Martinek, 1989a; Martinek 1989b; Martinek,

1981a).

Several studies (Martinek & Karper, 1982; Martinek, 1981b; Martinek & Johnson, 1979) have been published examining expectancy within the physical education class setting. In a study by Martinek and Johnson (1979), expectancy effects were examined for specific teacher-student dyad interactions during physical education classes. Five physical education teachers were observed during instruction of fourth or fifth grade classes. The teachers rated each student in their class based upon their expectations of the student's level of achievement (Martinek & Johnson, 1979). Based upon these rankings, the researcher selected ten high expectancy and ten low expectancy students to observe during physical education class. A dyadic adaptation of the Cheffers Adaptation of Flanders Interaction Analysis System (CAFIAS; Cheffers, Amidon, & Rogers, 1974) was used to record the researcher's observations.

The researchers found high expectancy students (achievers) received more teacher initiated contacts, more praise and encouragement, and more acceptance of ideas and feelings than low expectancy students (Martinek & Johnson, 1979). Additionally, high expectancy students received less criticism than low expectancy students. The researchers concluded that high achievers may have advantages due to the increased attention, praise, acceptance, and intellectual stimulation within the physical education setting as compared to low achievers (Martinek & Johnson, 1979).

In another study by Martinek (1981b), physical attractiveness was examined within the expectancy framework. Martinek observed two physical education teachers during their second, fourth, and sixth grade classes. Teachers were asked to rate each student in four expectancy areas: "(a) overall performance in physical skill; (b) social

relations with peers; (c) cooperative behavior during class; and (d) ability to reason” (Martinek, 1981b, p. 199). The CAFIAS was used to record the dyadic interactions between the physical education teacher and his/her students (Martinek, 1981b). Thirty graduate students measured physical attractiveness by examining black and white pictures of each student taken with a white background, providing a frontal view of the student (Martinek, 1981b).

Students rated high in attractiveness were found to be rated higher by the teacher in overall performance in physical skills and overall social relations with peers compared to students rated lower in attractiveness. Additionally, students rated high in attractiveness received significantly more praise and encouragement. Even though these results suggest that physical attractiveness plays a role in the expectancy behavior of teachers, the small sample size makes generalizability of the findings difficult (Martinek, 1981b).

Martinek and Karper (1982) observed three elementary physical education teachers and their interactions with students during class. The purpose of this study was to extend the expectancy literature and to determine if elementary school students’ effort and motor abilities were linked to teacher expectancies and interaction patterns of the dyad (Martinek & Karper, 1982). Student expectancy ratings were obtained from teachers and observational instrument were used to assess behaviors. Additionally, the Body Coordination Test (BCT; Schilling & Kiphard, 1976) was used to measure motor ability. Teachers also rated the students based upon the effort they thought the students exhibited during physical activity (Martinek & Karper, 1982).

Examination of the relationship between motor ability, effort, grade, and teacher

ratings indicated two significant relationships. Effort and grade level were significant in predicting how teachers rated each student (Martinek & Karper, 1982). In addition, teacher perceptions of motor ability significantly predicted performance (Martinek & Karper, 1982).

An examination of the relationship between motor ability, effort, grade, and teacher-student behaviors also demonstrated two significant findings. First, the teacher's willingness to accept and use student ideas appeared to be effected by the students' grade, motor ability, and effort (Martinek & Karper, 1982). Second, the teacher's use of praise and encouragement appeared to be linked to grade level with younger children receiving more praise and encouragement than older children (Martinek & Karper, 1982).

Finally, when examining teacher expectations and teacher-student interactions, one significant finding emerged. Teacher expectancies were predictors of differential teacher behaviors, which Martinek and Karper (1982) believed were used to motivate and encourage physical education students during instruction. These results suggested the possibility that the self-fulfilling prophecy may have existed within the examined dyads.

Pygmalion in Athletics

As previously noted, Solomon and colleagues have examined expectancy relationships within the coach-athlete dyad. Other researchers have also contributed to this area (Sinclair & Vealey, 1989; Horn, 1984; Rejeski, Darracott, & Hutslar, 1979). Sinclair and Vealey (1989) observed Canadian female field hockey players to examine the type and quality of feedback given by coaches to athletes over the course of a competitive season. In addition, they utilized Vealey's Trait Sport-Confidence Inventory (TSCI; Vealey, 1986) to examine how feedback might affect athletes' self-perceptions

throughout the season. Specifically, self-perceptions included perceived competence, self-confidence, and self-esteem (Sinclair & Vealey, 1989). Results indicated that coaches provided high expectancy athletes with more individual communication consisting of specific and evaluative feedback (i.e., specific performance information) as compared to low expectancy athletes. The only self-perception to significantly change over the course of the competitive season was self-confidence (Sinclair & Vealey, 1989).

Additionally, the data suggested that coaches' ranking of their athletes was stable over the course of the season when examining the high versus low expectancy athletes. However, examination of the extreme samples of high versus low expectancy athletes demonstrated relative flexibility of the coaches' rankings. Sinclair and Vealey suggested these findings indicated that the perceptions of the coaches were flexible and could be modified for those athletes ranked extremely high or extremely low in expectancy.

Rejeski, Darracott, and Hutslar (1979) observed fourteen youth league basketball teams to investigate the extent to which the expectancy effect existed in youth sport. The coach-athlete dyad was examined using the Coaching Behavior Assessment System (CBAS; Smith, Smoll, & Hunt, 1977) and the coaches' subjective ranking of their athletes based on perceived ability. Results showed that the low expectancy athletes received more general technical instruction with fewer nonreinforcement situations than high expectancy athletes. Higher expectancy athletes were reinforced more frequently although they also experienced a higher frequency of nonreinforced behaviors than low expectancy athletes (Rejeski, Darracott, & Hutslar, 1979).

These results were contrary to the self-fulfilling prophecy. Rejeski et al. offered several explanations, all of which related to the mission of the youth league in which the

athletes participated. The youth league specifically required all children to participate equally in games and practices, therefore lessening the win-at-all-costs mindset, which in turn may have eliminated differential feedback for high and low expectancy athletes that is prevalent in more competitive sports (Rejeski, Darracott, & Hutslar, 1979).

Solomon and colleagues (1996) attempted to determine whether college basketball coaches gave different types of feedback based upon athletes' ethnicity. Two NCAA Division I men's basketball teams were observed using the CBAS with low and high expectancy athletes identified through coaches' ranking of athletes skill level. Results revealed no significant interactions between the type of feedback, ethnicity, or coaches' expectations (Solomon, Wiegardt, et al., 1996). Therefore, the researchers concluded that ethnicity played little if any role in creating Pygmalion effects within these two Division I basketball teams (Solomon, Wiegardt et al., 1996).

In another follow-up study examining ethnicity and feedback patterns, Solomon (1999b) observed four high school boy's basketball teams. Team One consisted of African-American players and an African-American head coach. Team Two consisted entirely of European-Americans including the head coach. Teams Three and Four had European-American head coaches, but an equal distribution of African-American and European-American players. Results showed that African-American players on homogenous teams received more "praise and scold feedback", whereas African-American players on mixed "teams received more management instruction" (Solomon, 1999b, p. 77). In addition, European-American players on mixed teams received more total feedback than African-American players on mixed teams (Solomon, 1999b).

The results of this study are difficult to interpret since the methodology was not

included given that it was published as a professional article with coaches being the intended audience. However, based upon preliminary interpretations, some credence could be given to the notion that coaches provide different types of feedback to African-American players compared to European-American players. Thus, a self-fulfilling situation may exist.

Solomon and Kosmitzki (1996) carried out an investigation to examine the flexibility of coaches' perceptions of their athletes' ability and improvement over the course of a competitive season. They also examined coaches' feedback patterns toward low and high expectancy athletes (Solomon & Kosmitzki, 1996). An NCAA Division I women's basketball team was observed using the CBAS with low and high expectancy athletes identified through coaches' rankings. The coaches were asked to rank the athletes according to the athletes' ability and potential for improvement both before and after behavioral observations of the coaches' feedback patterns.

Solomon and Kosmitzki found that the coaches' ranking of athletes' ability remained stable throughout the competitive season. However, when examining the coaches' expectations concerning the potential for improvement, the results showed no correlations between early and late season coaches' rankings of the athletes' potential for improvement, indicating some degree of flexibility of this expectation (Solomon & Kosmitzki, 1996). Additionally, the results revealed that coaches gave more feedback to those athletes who were expected to improve during the season. High expectancy athletes received more technical instruction and general encouragement than low expectancy athletes. However, late in the competitive season athletes rated higher in ability by the coaches were given more organization instruction feedback while athletes

rated lower in ability received more mistake-contingent technical feedback (Solomon & Kosmitzki, 1996). Solomon and Kosmitzki concluded that coaches' perceptions of improvement were an important influence on their expectations, whereas perceptions of ability were not since they were stable over the course of the competitive season.

Solomon, Golden, Ciapponi, and Martin (1998) conducted a follow-up study to examine the stability of coaches' perceptions regarding athletes' ability and potential for improvement. In addition, feedback predictability was investigated based upon the stability of these perceptions (Solomon, Golden, et al., 1998). This study was undertaken to refute or support previous results by Solomon and Kosmitski (1996) and to determine if coaches' perceptions of athletes' potential for improvement serves as a measure of coach expectations. Four high school boys' basketball teams were observed using the Arizona State University Observation Instrument (ASUOI; Lacy & Darst, 1984). Additionally, coaches were asked to rank the athletes based on their perceptions of potential for improvement both at the start and end of the competitive season (Solomon, Golden, et al., 1998).

Researchers found that coaches' perceptions of the athletes' potential for improvement were flexible and changed over the course of the competitive season. However, the coaches' perceptions of athletes' ability remained stable throughout the season (Solomon, Golden, et al., 1998). When analyzing the type of feedback given by coaches, the researchers found that low improvement expectancy athletes received more management instructive feedback compared to high improvement expectancy athletes. Toward the end of the competitive season, high improvement expectancy athletes received more instructional feedback than low improvement expectancy athletes. When

examining perceived ability, coaches gave high expectancy athletes more management and overall feedback as compared to the low expectancy athletes (Solomon, Golden, et al., 1998).

These results were consistent with findings of Solomon and Kosmitzki (1996), which revealed that coaches' perceptions of ability levels remained stable over time. Coaches' perceptions of athletes' potential for improvement, however, were quite flexible in both studies. This finding indicates that coaches' perceptions of athletes' potential for improvement is important during expectancy formation (Solomon, Golden, et al., 1998).

In 2001, Solomon examined impression cues and their relationship to expectancy formation by head coaches. Specifically, she examined if athletic performance could potentially be predicted based upon the performance (ability) and personality (confidence) impression cues head coaches had of their athletes (Solomon, 2001a). Eight NCAA Division I teams were invited to participate in the study resulting in 115 athletes and eight head coaches. The athletes competed in either team, dual, or individual sports. The three measures that were used were the Expectancy Rating Scale (ERS; Solomon, 1993), the TSCI (Vealey, 1986), and objective performance data consisting of performance statistics unique to each sport that were converted to standard scores for comparison. The athletes completed the TSCI (a measure of trait confidence) while the head coaches completed a modified TSCI (wording changed to allow coaches' perceptions of the athletes' confidence to be measured) and the ERS (Solomon, 2001a).

Solomon found that of the three impression cues (coaches' perception of athlete ability, coaches' perception of athlete confidence, and athletes' perception of confidence), the head coaches' perception of athlete confidence was the only

performance predictor that was significant (Solomon, 2001a). Further analysis demonstrated head coaches reported significantly lower levels of confidence for their athletes than did the athletes (Solomon, 2001a).

In a follow-up study, Solomon (2002) examined head coaches' perceptions of athletes' physical ability and/or confidence to determine whether either predicted actual athletic performance (Solomon, 2002). The eight NCAA Division I teams included in the Solomon (2001a) study were asked to participate in this follow-up study. The same procedures were also used with one exception. The first part of the study examined all current athletes on these teams. In the second part, only those athletes who had participated in the first study were examined. This was done to validate further the previous findings and determine the persistence of the influence of psychological cues on expectation formation (Solomon, 2002).

In both analyses, the only athletic performance predictor was the head coaches' evaluation of the athletes' confidence (Solomon, 2002). Additionally, both analyses indicated that athletes rated their self-confidence significantly higher than did their head coaches (Solomon, 2002). These results supported the results of the previous study.

The lack of studies evaluating the impression cues used by assistant coaches prompted Solomon (2001b) to conduct a study to determine whether assistant coaches used the same impression cues as head coaches to predict athlete performance. Previous research seemed to indicate head coaches' evaluation of athletes self-confidence is the only athletic performance predictor. Athletes (n=142) and assistant coaches (n=15) from eight Division I teams agreed to participate in this study. Assistant coaches completed an ERS and TSCI for each athlete they coached during the season. Both assistant coaches

and athletes completed demographic questionnaires. Objective performance data were collected on each athlete from the regular season and converted to standard scores for comparison.

Results indicated the only significant predictor of athletic performance used by assistant coaches was their expectation of athlete ability. This is different than that of head coaches whose expectations of confidence was the only athletic performance predictor (Solomon 2001b). Solomon suggested two reasons for the differences. First, head coaches and assistant coaches differ in the type and amount of feedback they provide to athletes. Head coaches are responsible for the behavior and performance of the athletes, which requires them to evaluate and utilize psychological impression cues. Assistant coaches lack this responsibility, which allows them to make more judgments based upon observable ability factors. Second, these studies are limited to measuring one impression cue from both the physical and psychological categories. It is not unreasonable to assume that other impression cues can exist within these categories allowing head and assistant coaches additional ways to predict athletic performance. Solomon recommended additional research to explore these areas.

Horn, Lox, and Labrador (2001) suggested only two types of impression cues are used by coaches to inform their expectations of athletes. However, Solomon has suggested a third impression cue category based upon her work (Solomon 2001a, Solomon 2001b, & Solomon, 2002). Solomon contends coaches also utilize psychological impression cues such as self-confidence to inform their expectations of athletes.

Finally, in an unpublished study, Solomon and Rhea (2002) conducted a

qualitative study to investigate how coaches' perceptions of their athletes are influenced by factors used to determine their expectations of the athlete's achievement. They interviewed 24 head coaches from NCAA Division I universities representing both individual and dual sports. The interview consisted of 12 questions designed to determine how the coaches formed expectations of their athletes (Solomon & Rhea, 2002).

The analysis of interview data brought to light 56 general themes that were then compiled into 17 more specific categories that led to six dimensions. These six dimensions fell into the impression cues of the expectancy theory literature. Eighty-three percent of the quotes found in the transcripts could be included in the established impression cues of performance, personal, and psychological categories (Solomon & Rhea, 2002). However, the performance and psychological dimensions accounted for the majority (i.e., 74%) of the raw data quotes. In addition to these three dimensions, three additional dimensions were noted. These were cognitive (related to knowledge), mistake (ability judgment errors), and other sources of input in assessing ability (Solomon & Rhea, 2002). Based upon the exploratory nature of this study, future research needs to examine these three dimensions more thoroughly and determine how each influences coaches' expectations.

Rehabilitation Adherence

Literature addressing the rehabilitation adherence of injured athletes has focused on psychological factors that contribute to either adherence or nonadherence. According to Fisher, Scriber, Matheny, Alderman, and Bitting (1993), nine general areas contribute to the continuing adherence of the injured athlete to a rehabilitation program. These are:

(a) education, (b) communication, (c) rapport, (d) social support and encouragement, (e) personalized treatment, (f) goal setting, (g) progress monitoring, (h) empowerment of the athlete; and (i) ownership of responsibility. Fisher and Hoisington (1993) also found that self-motivation contributed significantly to adherence. In this section the literature on rehabilitation adherence of injured athletes is examined in more detail.

Fisher, Domm, and Wuest (1988) were among the first researchers to examine empirically factors that may influence the rehabilitation adherence of athletes, particularly personal and situational factors. Forty-one injured athletes (21 men & 20 women) were recruited to participate in the study. In order to be included, the athlete had to have sustained a shoulder, knee, or ankle injury resulting in at least six weeks of rehabilitation. Athletes were categorized as adherent or nonadherent based upon a review of rehabilitation records and consultation with their athletic trainer.

Athletes completed the Athletic Injury Rehabilitation Adherence Questionnaire (RAQ; Fisher, Domm, & Wuest, 1988) specifically designed for this study. The questionnaire consisted of six Likert scale measures containing a total of 40 items. The scales included perceived exertion, pain tolerance, self-motivation, support from significant others, scheduling, and environmental conditions. However, no psychometric testing was completed on this scale.

Researchers found that compared to nonadherents, adherents worked harder, were more self-motivated, less concerned about pain, and more dedicated to keeping rehabilitation appointments. When all factors were considered, support from significant others discriminated adherent and nonadherent athletes the most. In addition, perceived exertion was also significantly different for the two groups. This study highlighted the

importance of the athlete-athletic trainer relationship in contributing to the rehabilitation adherence of athletes, especially those who view their athletic trainers as a “significant other.”

Due to the lack of validity and reliability of the RAQ, Brewer, Daly, Van Raalte, Petitpas, and Sklar (1999) investigated the psychometric properties of the RAQ with a prospective design. Criterion-related validity for the RAQ was determined using three measures of rehabilitation adherence and compliance. They first measured adherence as attendance at rehabilitation sessions. Data were collected for each athlete on the total number of rehabilitation sessions attended divided by the total number of rehabilitation sessions the athlete was expected to attend. This became the attendance ratio.

The second measure used to determine compliance was the Sport Injury Rehabilitation Adherence Scale (SIRAS: Brewer, Van Raalte, Petitpas, Sklar, & Ditmar, 1995). The SIRAS measured effort athletes put into their rehabilitation exercises, how often athletes followed the athletic trainer’s instructions, and how receptive the athletes were to changes in their rehabilitation program. Each of these measures was rated by the athletic trainers using a five-point Likert-type scale.

The third measure of rehabilitation adherence was an estimate by the athletes concerning how much prescribed rehabilitation they had completed outside the athletic training room. This estimate ranged in value from one to five with one being no rehabilitation performed to five being all prescribed rehabilitation being completed.

Researchers found the majority of participants usually did not miss rehabilitation. In addition, psychometric testing of the RAQ demonstrated low reliability and validity scores. Brewer, Daly, et al. (1999) concluded that the RAQ should be abandoned or

modified based upon these results. They instead recommended the use of the Sport Injury Rehabilitation Beliefs Survey (SIRBS; Taylor & May, 1996) instead.

Psychometric testing of the SIRBS has demonstrated adequate validity and reliability.

In a set of studies, Fisher and colleagues (Fisher, Mullins, & Frye, 1993; Fisher & Hoisington, 1993) examined both athlete and athletic trainer attitudes and judgments concerning factors influencing rehabilitation adherence. In the first study (Fisher, Mullins, & Frye, 1993), 505 randomly selected certified athletic trainers received the RAQ with a letter explaining the purpose of the study. Results indicated that 100% of the respondents (n=187) agreed that rapport with athletes was crucial in getting them to commit to the rehabilitation program. Additionally, athletic trainers highly agreed that rehabilitation adherence would be enhanced if athletes were self-motivated. However, athletic trainers also felt that external motivation through monitoring and supervision was necessary.

In a follow-up study, Fisher and Hoisington (1993) conducted a survey of injured athletes using the RAQ. The questionnaire was sent to athletes at three major universities. Athletes were required to have sustained an injury requiring at least three months of rehabilitation and to have graduated within the last 12 years in order to be included in this study. Of the 100 questionnaires sent out, only 36 were returned.

Analysis of the data resulted in two important findings. First, 89% of the athletes reported that good rapport with their athletic trainer was essential for rehabilitation adherence. Second, 92% of the athletes reported that self-motivation was directly related to their rehabilitation adherence. However, further analysis demonstrated that many of the factors upon which the athletes based their motivation were due to the influence of

the athletic trainer (i.e., progress monitoring). This study needs to be interpreted with caution due to the low sample size.

However, both studies by Fisher and colleagues point to the importance of the athlete-athletic trainer relationship in the adherence of rehabilitation. In fact, both athletes and athletic trainers agreed that a good rapport does indeed enhance adherence. Each also agreed that self-motivation is a major contributor to adherence. Results also indicated that athletes relied on daily feedback from the athletic trainers to maintain their levels of self-motivation. With this evidence, it is even more crucial to understand how expectations can influence the athlete-athletic trainer relationship.

Expectancy in the Rehabilitation Environment

After a search through several different databases (PsycINFO, Sport Discus, PubMed, ERIC, and Academic Search Premier formally ProQuest) only one published manuscript was found linking the expectancy literature to rehabilitation adherence in the athletic training room. Wilder (1994) provided a brief review of the literature linking expectancy theory to medicine. According to Wilder, “the study of the Pygmalion effect in the context of sport rehabilitation is currently in the embryonic stage” (p. 169).

In an intuitive-based article, Wilder (1994) argues the Pygmalion effect can occur in the athletic training room. Wilder suggested the Pygmalion effect revolves around the important role the athletic trainer plays in the rehabilitation of injured athletes. She contends previous research on the self-fulfilling prophecy, medicine, and sport rehabilitation adherence indicates that the expectations of athletic trainers can influence the compliance and adherence of injured athletes. Wilder argues this can occur in many forms, from developing an insufficiently challenging rehabilitation program to inflexible

and unrealistic expectations of the athletic trainer.

Additionally, Wilder also suggested a modification of Martinek's (1989b) attributional model for explaining expectancies (See Figure 3). This modified model is identical to Martinek's model with two exceptions. The nomenclature has been changed to reflect "clinician" instead of "teacher" and "athlete" instead of "student". Wilder has also added two additional steps to the model. The first is the expectation formation of the clinician before the clinician's behavior is directed towards the athlete. The second step deals with causal attributions and focuses on the impact of the clinician's behavior on the athlete.

Closer examination of these expectancy models suggest several possible areas that expectancy effects can occur within the athletic trainer-athlete dyad potentially creating a Pygmalion effect. The first of these concerns impression cues. The athletic trainer can form expectancies of the athlete within any of the three impression cue areas. These expectancies might then change the behavior the athletic trainer directs towards the athlete. Research needs to be conducted in order to determine which impression cues are more prevalent in the athletic trainer's formation of expectations.

Another area concerns the feedback athletic trainers transmit to athletes. As mentioned earlier, feedback is one factor in Rosenthal's (1973) four-factor theory. Much of the expectancy literature has focused on feedback. Therefore, it would seem that feedback should be examined in the athletic trainer-athlete dyad. Of the other three factors, climate may be potentially significant to the athletic trainer-athlete relationship. Based on personal experiences, the climate facilitated by the athletic trainer in the athletic training room may be a major factor in athletes' rehabilitation adherence.

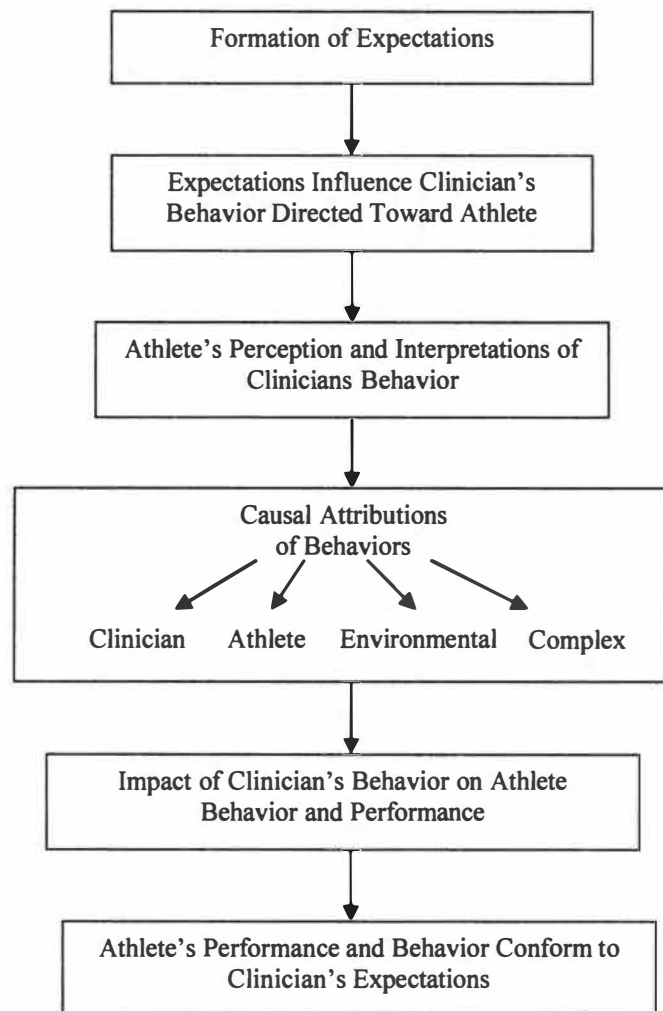


Figure 3: Wilder's (1994) Modified Martinek Model

Finally, available research suggests that a closer examination of the influence of athletes' behavior attributions in the formation of expectancies is indicated. How athletes perceive and explain the behavior of the athletic trainer can affect their rehabilitation adherence. For example, if an athletic trainer demonstrates frustration towards an athlete, the athlete can interpret this situation in several ways. The first could be recognizing that the athletic trainer may be under tremendous stress and, therefore, the athlete might dismiss the behavior. However, the athlete could interpret the behavior as an indication of how the athletic trainer feels about the athlete. Hence, the athlete might interpret the behavior negatively and not come back for rehabilitation.

All of these areas can affect the athletic trainer-athlete dyad and influence the athlete's rehabilitation adherence. However, these areas of examination are based upon the current research conducted in the classroom, gym, and competitive athletic field. Since no research exists examining the influence of expectations in the athletic training room, a clear need is identified for further research.

Conclusion

Based upon a review of the literature, it is logical to presume that the rehabilitation adherence patterns of injured athletes could be susceptible to the Pygmalion effect. Wilder (1994) also provides anecdotal evidence that expectancies may play a role in the rehabilitation adherence of injured athletes. However, her evidence was "intuitive" and based upon research conducted in other disciplines. Thus, the purpose of this research project was to explore and attempt to understand how Pygmalion works in the rehabilitation environment and how it may influence rehabilitation adherence of injured athletes. This includes understanding each participant's role and perspective in the

formation of expectations. The next chapter describes methodology used for this study.

CHAPTER III METHODOLOGY

Introduction

The following section contains the methodology used during this research project. In this chapter separate sections are devoted to discussions of the participants, setting, procedures, data analysis, and pilot study. A case study approach using a semi-structured interview format was employed in this study. The interview questions were designed to explore the expectations of the athletic trainer-athlete cases and how these perceived expectations may have influenced the rehabilitation adherence of the injured athletes.

According to Stake (1978), case studies have an advantage when the goals of a study are “understanding, extension of experience, and increase in conviction in that which is known” (p. 6). An abundant amount of research indicates the Pygmalion phenomenon can exist between teachers and students as well as coaches and athletes (Horn, Lox, & Labrador, 2001; Rosenthal, 1994; Martinek, Crowe, & Rejeski, 1982; Rosenthal & Jacobson, 1968). It is reasonable, therefore, to believe it may exist between athletic trainers and athletes. The purpose of this research project was to explore and attempt to understand how Pygmalion works in the rehabilitation environment and how it may influence rehabilitation adherence of injured athletes. Additionally, the investigator wanted to enhance his understanding of the Pygmalion phenomenon from the athletic trainer and athlete perspectives. Based upon these criteria, a case study approach was justified.

Methods and Procedures

Bracketing Interview

Before conducting interviews with the participants, approval was obtained from the Vice-President of Academic Affairs and the Athletics Director at the institution where the study was conducted, followed by IRB approval from the primary investigator's educational institution (see Appendix A). The researcher also participated in a bracketing interview conducted by a fellow Ph.D. student, who signed a confidentiality agreement (See Appendix B), familiar with qualitative methods. This interview was used to determine beliefs, expectations, and biases of the researcher. This allowed the researcher to gain understanding of personal preconceptions of the Pygmalion phenomenon, which permitted a fresh examination of the participant's experiences preventing prejudgment and early assignment of meaning (Patton, 2002).

The results of the bracketing interview revealed that the primary investigator (PI) believed examination of the athlete-athletic trainer relationship would demonstrate that Pygmalion effects existed in this relationship (Wilder, 1994). Based upon the personal experiences of the PI dealing with athletes, he believed that the attitudes and expectations the athletic trainers had of their athletes can vary. These expectations and attitudes may have a detrimental effect on athletes if they perceive that the athletic trainer has low expectations regarding their adherence to rehabilitation programs. The PI further believed that athletic trainers can have low expectations of athletes and communicate these expectations, either overtly or covertly, often resulting in a self-fulfilling prophecy (Wilder, 1994). In other words, athletes who are not expected to adhere to their rehabilitation program usually do not, and vice versa. Finally, no changes to the

interview guide were made based upon the results of the bracketing interview.

Procedures

Participants

The participants for this research project were athletes and athletic trainers at an NAIA institution in the southern United States participating in or working with the following sports: basketball, football, judo, soccer, and swimming. A total of 15 people (five athletic trainers and 10 athletes) agreed to participate in this study forming one pilot case study and four main case studies. The mean age of the athletic trainers was 31 years ($\bar{X} = 31.40$, $S = 9.34$) with an average experience of 9 years ($\bar{X} = 8.8$, $S = 8.07$). The mean age of the athletes was 21 years ($\bar{X} = 20.6$, $S = 1.96$) with the following academic year breakdown: four freshman, three sophomores, one junior, one senior, and one fifth-year senior (See table 1). All the athletic trainers identified themselves as Caucasian, four were female and one was male. Of the ten athletes, seven were male and three female, eight identified themselves as Caucasian and two as African-American. The athletes participated in football (4), swimming (1), soccer (3), basketball (1), and judo (1). To provide additional anonymity, the sports of the athletes were changed in the case records.

The athletes injured body parts included five knees, two ankles, one foot, one groin, one leg, one wrist, and one shoulder. Two athletes sustained two injuries in the same year each requiring a minimum of four weeks of rehabilitation. A total of twelve injuries were discussed during the interviews.

In order to explore the Pygmalion effect in the athletic training room, a case study

Table 1: Athlete Participant Demographics

Pseudonym	Age	Year in School	Sport*	Body Part Injured	Rehab Adherence Ratio	AT ⁺ Expectancy Rank
Vanessa	23	Sophomore	Track	Ankle	.61	High
Frank	21	Freshman	Football	Groin	.82	Low
Robert	19	Sophomore	Soccer	Shoulder	.91	High
John	20	Sophomore	Soccer	Foot	0.0	Low
Bo	19	Freshman	Baseball	Ankle	.47	High
				Knee	.72	
Allen	24	Senior	Baseball	Leg	.73	Low
				Wrist	.29	
Clark	21	Junior	Basketball	Knee	.74	High
Andy	22	Senior	Baseball	Knee	.35	Low
Jessica	19	Freshman	Volleyball	Knee	.77	High
Sarah	18	Freshman	Volleyball	Knee	.59	Low

* To protect the participant's anonymity their sports have been changed
 AT⁺ Athletic Trainer

approach was utilized. A case was defined as one athletic trainer and two athletes they supervised in rehabilitation. Each athlete was ranked as either high or low ability by the athletic trainer. The case definition was very specific and served to define the participants of this study (Patton, 2002). Patton describes this as purposeful sampling and defines it as an attempt to select “information-rich cases for study in depth” (p. 230).

Patton also suggests several strategies for selecting these informant-rich cases, two of which were employed in this study. The athletic trainers were chosen using typical case sampling and the athletes were chosen using a critical case sampling technique (Patton, 2002). Typical case sampling is defined as selecting cases that portray and demonstrate what is normal. Critical case sampling is defined as cases that demonstrate a point or are defined as important for some reason or another (Patton, 2002). The athletic trainers chosen were practicing professionals who exhibited the “normal” qualities expected of athletic trainers in the profession. Athletes were chosen based upon the athletic trainers’ perception of the athlete’s ability, which represent two ends of a continuum important in the examination of the self-fulfilling prophecy.

A critical component of this study was getting access to several athletic trainers and their athletes in order to conduct interviews, observations, and collect other data as needed. This component required considerable accessibility to the participants. For this reason, the athletic trainers and athletes at the PI’s institution of employment were enlisted to serve as participants, which allowed unlimited access to conduct interviews, observations, and to obtain athlete rehabilitation data. This approach did have some drawbacks which are discussed in a later section.

All National Athletic Trainers’ Association Board of Certification (NATABOC)

certified athletic trainers currently employed at the researcher's institution were asked to participate in this study. Of the six athletic trainers on staff, five agreed to participate. The athletic trainer whom did not participate was invited several times, but did not return a signed consent form. In order to prevent the athletic trainer from feeling pressured to participate, the researcher did not actively pursue him/her. It is unknown why the athletic trainer did not participate.

Each athletic trainer who agreed to participate was asked to provide a list of their athletes by ranking them from high to low ability. The delineation of high and low ability athletes was left up to the participating athletic trainers. The athletic trainers were allowed to define ability to prevent any definitional limitations imposed by the researcher; researcher imposed definitions may have prevented the athletic trainers from listing athletes who would provide a rich source of data. The idea was to try to understand athletic trainers' and athletes' experiences with Pygmalion in the athletic training room and by defining what low and high ability athletes were for the athletic trainers, this could have limited that understanding.

Athletic trainers were asked to include only injured athletes sustaining an injury that occurred either during practice or competition in their respected sport during the 2002-2003 academic year. A further provision was that the athletic trainers were asked to list only injured athletes who had had at least four weeks of rehabilitation. This duration was chosen to ensure that adequate amounts of interactions could occur between athletes and athletic trainers, allowing enough time to develop expectancy effects in the relationship.

Each athletic trainer presented to the PI a list of eligible athletes ranked from high

ability to low ability along with a signed informed consent form (See Appendix C).

These lists were then used to contact two athletes per athletic trainer. A name was taken from the top and the bottom of each list provided by the athletic trainer. Each athlete chosen was contacted and asked to participate in this project. Every athlete contacted agreed to participate. In addition, each signed an informed consent form (See Appendix D) at the start of his/her interview. A total of 15 participants (5 athletic trainers and 10 athletes) agreed to participate, thus forming a pilot study case and four primary cases.

Setting

All the participants in this study were from a small private church-affiliated college with an enrollment of approximately 1500 students. Of these 1500 students, approximately 500 are athletes, most of whom receive some type of athletic scholarship. The athletic teams compete in a conference recognized by the NAIA.

The athletes attend class from 8:00 a.m. to around 2:00 p.m. The majority of athletic practices occur between 3:00 p.m. and 8:00 p.m. with competitions held predominately on Tuesdays, Thursdays, and Saturdays. Rehabilitation treatments begin at 7:00 a.m. Second rehabilitation treatments occur from 1:00 p.m. to 2:30 p.m. for those athletes needing it. Practice preparation starts at 2:30 p.m. for those athletes requiring taping and stretching.

The Interviews

Pilot Study

A pilot study consisting of three interviews was conducted prior to the main study. The interviews were conducted with one athletic trainer and two athletes that the athletic trainer had identified as having low and high ability. After conducting each of

the interviews, the researcher and a member of the research team, who had signed a confidentiality statement, performed an inductive thematic analysis of the transcripts utilizing the procedures describe later. Additionally, each interview was examined to determine mistakes in the interviewing techniques of the researcher and problems with the interview questions.

Upon completion of the transcript analysis, the researcher and the research team member met to discuss the test case. Several recommendations were discussed and implemented. Question #4 on the athletic trainer interview guide and Question #5 on the athlete interview guide were asked first for all subsequent interviews in order to determine immediately the expectations the athletes and athletic trainers had of each other. Two other recommendations were also implemented. First, the researcher needed to leave the participants pseudonyms on the transcripts given to the research team instead of replacing them with an identification code. Leaving the pseudonyms allowed the researcher and research team members to identify a name with the transcripts and get a better feel for the experiences of the participants. Second, in order to get at the experiences of each participant and how each participant knew what the other member of the dyad expected, a follow-up question such as “How did you know this?” was asked through out the rest of the interviews.

Case Studies

An interview was schedule for each athletic trainer and athlete agreeing to participate in this study. Participants were allowed to pick a date and time of their convenience for the interview. The interviews were conducted in a classroom away from the athletic training room. This setting allowed anonymity of the participants. Each

classroom was set up to allow the participant and researcher to face each other with a tape recorder placed between them.

The athlete participants were given informed consent forms before the start of each interview. Each athlete participant was asked to read and sign the consent form. Athletic trainer participants returned signed informed consent forms with their athlete lists. Informed consent forms were specific for the athletic trainer and athlete participants. The participants were also given brief demographic forms (see Appendixes E and F) to complete. Demographic forms were also specific for the athletic trainer and athlete participants.

After the completion of the form(s), participants were assured that comments they made would not be discussed with any of the other participants. In addition, the researcher explained that every attempt would be made to protect the anonymity of statements made. He also told them that transcripts of the interviews would be kept confidential with the exception of the researcher's advisors and research group. The researcher also explained to the participants that they would receive a copy of their transcribed interviews allowing them to make corrections, deletions, and additions as they wished. Finally, each participant was asked to pick a pseudonym for identification. These pseudonyms were used on the participant transcripts.

Interview Guide

A semi-structured interview format was utilized for this project (See Appendixes G and H). The interview guide was used to ensure the same areas of inquiry were explored with each participant (Patton, 2002). The interview guide was designed to explore Pygmalion in the athletic trainer-athlete relationship. Questions were developed

to explore and probe the relationship the athletic trainer and athletes had with each other and changes that may have occurred in the relationship. Additionally, questions were adopted from Solomon and Rhea (2002) to focus on specific aspects of athletic trainers' and athletes' relationship with each other, the expectations each had of the other, and the possible influences of these expectations.

After the initial development of the interview guide, a group of the researcher's peers reviewed the questions for content validity and readability. Each question was scrutinized and revised based upon feedback. Following the revisions, the athletic trainer interview guide was given to a group of certified athletic trainers not participating in this study who were employed outside the researcher's institution for review. The athlete interview guide was also reviewed by five athletes not participating in this study. Each interview guide was revised again based upon feedback from these two groups.

A separate interview guide was developed for each participant classification (athletic trainer versus athlete) with the questions being designed to allow cross-comparison of the athletic trainer and athletes responses (see Appendixes G and H). These differences in perception could demonstrate differences in the actual expectations of the athletic trainers and how the athletes perceived those expectations and responded to them. It was hoped that the interview guide(s) could highlight and demonstrate possible Pygmalion effects within this relationship.

Post Interview

At the end of the interview, participants were allowed to make any additional statements concerning topics explored during the interview. Each interview took approximately 45 to 60 minutes. Once the interview was completed, the tape recorder

was turned off and the participants were each thanked for their participation in the study.

In addition, the PI was familiar with all participants in the study since the participants were recruited from the institution he was currently employed as the associate athletic trainer. Although bias could not be completely controlled, attempts were made to minimize it. Since the PI's main responsibility was the healthcare of all athletes participating in men's and women's wrestling, softball, and cheerleading, these athletes were excluded from this project. Additionally, due to his status as a member of the teaching faculty and athletic training staff, a power differential likely existed between the athletes and the PI. An attempt to minimize this power differential was achieved by choosing athletes not enrolled in a class he taught.

The PI also attempted to empower the athlete participants throughout the project to minimize the power differential by being flexible with interview times and emphasizing the athlete's ability to withdraw without penalty at anytime. The athletes were also given a copy of their interview transcripts to review, correct, delete, or clarify. The possible influences and effects of this power differential were also explored during the interview.

The certified athletic trainers participating were all professional colleagues with whom the PI had a good working relationship. One of them was a graduate assistant, which again raised the question of a possible power differential. To minimize this differential, the PI attempted to empower the athletic trainers as described above by giving them the option of withdrawing at anytime.

Transcribing was started immediately after the interviews and performed by the PI. The participant's comments were transcribed word for word from the audiotape.

During the transcribing process the interview audiotapes were securely locked in a filing cabinet in the researcher's office. No one else was allowed access to the audiotapes.

Following transcription, the participants were contacted and given their transcripts. Any additions, changes, and deletions were noted, recorded, and included in the final version of the transcripts. Four participants modified their transcripts; one added a comment concerning his relationship with his athletic trainer, one deleted three sentences restating perceptions she had already discussed, and two returned transcripts with only editorial comments. The rest of the participants approved their transcripts without comment.

After the transcripts were transcribed and approved by the participants, the audiotapes were erased.

Analytical Procedures

Analytic procedures for this case study were adopted from Patton (2002).

Multiple sources of data were collected and examined by the PI and a research group who all signed a confidentiality agreement prior to analysis (See Appendix B). Content analysis allowed the data to be reduced to an understandable format used to provide common meanings in the form of patterns or themes (Patton, 2002). These patterns and themes were then explored within the expectancy and rehabilitation adherence theoretical framework.

Data Triangulation

A data triangulation technique suggested by Patton was also utilized to strengthen data analysis and subsequent interpretation of data. Data triangulation allowed multiple forms of data to be utilized in the analytical procedure minimizing interpretation errors by allowing inconsistencies in the data to be explored (Patton, 2002). For example, in

addition to interview transcripts, data were gathered in the form of athletic training room observations of the participating athletic trainers and athletes forming the individual cases of the study and rehabilitation adherence ratio data were gathered from the athlete participant's rehabilitation records.

Since this study was conducted at the PI's employment institution, a unique opportunity was provided to observe the individuals forming the cases of analysis without intrusion. The researcher had unlimited access for observing these participants in a natural environment without causing behavioral changes due to his presence. Observations were made throughout this study and noted for further contemplation and triangulation with the interview transcripts. This allowed insight into each case that was then shared with the PI's research group during transcript analysis.

Rehabilitation adherence data were also obtained from each athlete's rehabilitation records for the specific injury explored in the interviews. Brewer, Daly, Van Raalte, Petitpas, and Sklar (1999) quantified rehabilitation adherence by taking the number of rehabilitation sessions the athlete attended and dividing by the total number of rehabilitation sessions the athlete was expected to attend. Based upon the type of documentation obtained from the athletic training staff participating in this study, rehabilitation records revealed the date and time each athlete attended a rehabilitation session. This information allowed a direct measure of the number of rehabilitation sessions attended by the athletes.

In order to determine the total number of times the athletes were expected to attend rehabilitation, the researcher calculated the missed sessions under the assumption that all injuries required rehabilitation once a day, five days a week, unless otherwise

stated in the rehabilitation notes. In addition, some of the athletic trainers in this study actually documented missed rehabilitation sessions in the injury progress notes of their athletes. These extrapolated data were then added to the total number of sessions attended to determine the total number of sessions the athlete was expected to attend. Each rehabilitation adherence ratio was then calculated by taking the number of rehabilitation sessions the athlete attended and dividing by the total number of rehabilitation sessions the athlete was expected to attend.

The rehabilitation adherence ratios were used in the analysis process to explore differences in perception the athletes may have had of their perceived rehabilitation adherence compared to their actual adherence. Additionally, athletic trainer perceptions of the rehabilitation adherence of their athletes were also compared to actual adherence data. The rehabilitation adherence ratio provided additional data for analysis, which when combined with interviews and observational data, strengthened the analytical process and prevented interpretation errors that can occur when only one type of data is considered (Patton, 2002).

Research Group

After allowing the participants the opportunity to review and correct their transcripts, the PI and research group thoroughly read and analyzed each transcript. The research group consisted of two graduate students and a Ph.D. colleague, all of whom were well versed in qualitative methodology. Each research team member signed a Research Team Confidentiality Agreement (see Appendix B).

Members of the group coded and analyzed the transcripts separately from the investigator and from each other using an inductive analysis technique. Patton defines

inductive analysis as “discovering patterns, themes, and categories in one’s data,” which emerge from the researcher’s contact with the data (p. 453). The investigator and research group met four times to discuss the research team’s findings. Each research team member was provided five transcripts for each meeting to analyze at least one week before the meeting took place. The transcripts of the athletic trainers were the first to be examined followed by the transcripts of the five high expectancy athletes and then the low expectancy athletes, respectively. During these first three meetings, the researcher refrained from contributing his insights, instead focusing on the findings of the research team (Gutkind, 2003).

The fourth and final meeting was used to examine the transcripts together as case units. During this meeting, the investigator shared his insight of the interactions between the participants forming the case units of analysis with the research group. This insight allowed the research group to further explore possible meanings and interpretations of statements made in the transcripts. Emerging dimensions and categories were also discussed.

Case Analysis

Patton (2002) suggests the case study approach is both a process and product. The process includes systematic procedures for collecting, organizing, and analyzing data to obtain rich information about a case of interest. The data analysis process produces a product defined as a case study. After analysis by the research team, the PI performed additional case analyses utilizing the procedures outlined by Patton (2002). First, a case record was constructed of each individual case in order to process and organize all the data including the thematic analyses of the research group. This case record allowed all

the data for each case to be reduced to a manageable but complete record of the experiences of each participant within the case. Each case record was utilized to present the cases in the following chapter.

Once each case record was written, content analysis utilizing an inductive/deductive thematic process was employed to “further analyze, compare, and interpret the cases to generate cross-case themes, patterns and findings” (Patton, 2002, p. 452). Initially, each case was examined using inductive analysis to discover themes and patterns in the data. After each case was analyzed inductively, cross-case comparisons were performed to determine pattern similarities or dissimilarities between the cases.

Finally, once the themes and patterns were labeled for each case and the cases were cross-compared through inductive analysis, a deductive analysis was performed. Patton (2002) contends this is the final, confirmatory stage of a qualitative analysis and defines deductive analysis as analyzing data based on a pre-existing theoretical framework. The patterns and themes emerging from the cases were analyzed and interpreted according to the expectancy and rehabilitation adherence theoretical framework.

The next chapter describes each case examined. Themes and patterns emerging from each case are presented. A discussion integrating current findings with expectancy and rehabilitation adherence literature is also included.

CHAPTER IV RESULTS AND DISCUSSION

Introduction

The following chapter contains the case analysis for each of the five cases examined in this study. Each case included the athletic trainer and his/her high and low expectancy athletes (See Table 2). These cases were studied to understand how Pygmalion works in the rehabilitation environment and how it may influence rehabilitation adherence of injured athletes. Each case was also examined to enhance personal understanding of the Pygmalion phenomenon from the perspective of the athletic trainers and athletes. A discussion comparing the patterns and themes emerging from the cases is also included.

Case Records

Patton (2002) suggested the most important responsibility of a researcher conducting a case study is doing it justice. In order to do each case justice, cases are presented pulling together all the data collected into a comprehensive examination of the events as experienced by the participants. Such a process was used in the analysis. Patterns and themes emerging from each case are presented for discussion in this chapter (See Table 3).

Pilot Study

Overview

Cheryl was a certified athletic trainer with more than 15 years of experience who had worked with Vanessa and Frank during the Fall of 2003. Cheryl ranked Vanessa as her high ability athlete and Frank as her low ability athlete. Vanessa participated in track

Table 2: Case Demographics

Athletic						AT	Rehab
Trainer	Age	Years	Athlete	Age	Sport	Expectancy	Adherence
Pseudonym		Certified				Rank	Ratio
Cheryl	41	18	Vanessa	23	Track	High	.61
			Frank	21	Football	Low	.82
Becky	23	1	Robert	19	Soccer	High	.91
			John	20	Soccer	Low	0.0
Tina	27	5	Bo	19	Baseball	High	.47, .72*
			Allen	24	Baseball	Low	.73, .29*
Lana	42	17	Clark	21	Basketball	High	.74
			Andy	22	Baseball	Low	.35
Chris	24	3	Jessica	19	Volleyball	High	.77
			Sarah	18	Volleyball	Low	.59

*Athletes had two separate injuries

Table 3: Emerging Patterns and Themes

Case	Patterns and Themes
Pilot Study	Impression Cues Quality of Communication Unrealistic Expectations Gender Influences Pygmalion Factors
Case #1	Impression Cues Unrealistic Expectations Pygmalion Factors
Case #2	Unrealistic Expectations Pygmalion Factors Social Support
Case #3	Impression Cues Quality of Communication Pygmalion Factors Social Support
Case #4	Impression Cues Unrealistic Expectations Pygmalion Factors Social Support

and suffered from tendonitis in her ankle. Although her tendonitis was bothersome, she was able to continue to participate in her events. Frank played football and suffered from a high groin injury, which prevented him from participating at various times during the season including the last two games.

Cheryl, Vanessa, and Frank did not know each other until Vanessa and Frank reported to the athletic training room injured. Cheryl described Vanessa as “very receptive and willing to come in and do what it took” and “was the type of athlete that would, uh, keep going no matter what,” which is completely opposite of how she described Frank. Cheryl described him as “rather quiet and withdrawn” and an “athlete that just did not want to, uhm, participate or he would have rather sat out and did not want to give it a hundred percent.” This also highlighted her belief Frank did not seem to want to return to playing, which she later stated “it seemed like the more we did in the rehab process, the less he wanted to do with football.” She does partially attribute this to the injury itself.

Frank and Vanessa described Cheryl as a patient athletic trainer who was very nice, laid back, and willing to work with them. Both athletes contended that Cheryl wanted her athletes to be more independent and felt she did not pay attention to them as much as they would have liked. However, Vanessa and Frank perceived this lack of attention very differently. Vanessa attributed it to being normal, stating “it should be that way though because if you keep babying your students who are injured, they are just going to keep staying in there and [the athletic trainer] keeps treating them like precious little babies that won’t ever leave. They won’t want to ever get better. So, I think it was fair.” However, she admits “she probably could have shown a little more interest in me”

even though she states it didn't affect her much.

Frank's perspective was much different than Vanessa's. He states, "at times when she was, like, a little bit distracted or when she wasn't all there, that might have hindered my thinking, well I'll, I'll just hurry up and finish and, and get out of here because, you know, she, she's not really concerned about it today." He didn't feel like she motivated him enough, especially when he was working through difficult rehabilitation exercises.

Vanessa and Frank were both adherent to their rehabilitation programs, which is highlighted by Cheryl's remark "they both did the work that they were supposed to do at least from a coming in and doing what, getting the work done that they, the set work that they were supposed to accomplish. They both did that." Rehabilitation adherence ratios for Vanessa and Frank were .61 and .82, respectively.

Cheryl's Expectations

Cheryl's main expectation of her athletes centered on them possessing drive, which she defined as "...the desire and the determination to do, uhm, to make the best of his or her sport. They have to be willing to work hard in order to, uhm, accomplish what they need to accomplish." This includes the willingness to do "work that's beyond, say what's done in the training room." She also expects athletes to want "to know about his or her injury," which she believed makes the athletes good candidates for rehabilitation.

Cheryl measured this drive in her athletes based upon them asking questions concerning their injuries or requesting additional rehabilitation exercises to be performed outside the athletic training room. Cheryl discussed how Vanessa "wanted to know what specifically, what specific, uhm, stretches were involved as far as what her tendonitis was. Uh, she wanted to know why the ultrasound was beneficial for her. She wanted to

know, uhm, why certain exercises were, why those exercise helped strengthened certain things. Uhm, Frank on the other hand, he never, he never really asked me questions.”

Vanessa also asked Cheryl “for some work to do outside the training room versus, uhm, uh, Frank who, I, I never heard him ask anything he could do outside the training room.”

This led Cheryl to see more of a drive in Vanessa than Frank: “I just didn’t see the drive in him that I did in Vanessa.” These perceptual differentiations were important to Cheryl in determining whether her athletes were meeting their potential in rehabilitation and defining which of her athletes were high or low expectancy.

Finally, Cheryl had an implicit expectation of progression with her athletes. This is highlighted in statements she made about both Vanessa and Frank. Cheryl “would have liked [Frank] to have made some progression.” Remarks made later by Cheryl demonstrated her desire to see Frank progress, “I would have expected him to at least want to walk, to want a, maybe do some jogging during practice” and “He didn’t really seem to progress. He kind of stayed the same in his rehab program. Ah, he really, uh, I would have liked to see him do more or want to do more and he really didn’t seem to want to do more.” Cheryl described Vanessa’s progress differently stating “her progress seemed a little slow, but with a tendonitis type of condition, it, it can take awhile for those things to, to progress. So as far as expectations, she didn’t get as better as fast as I would have liked, but, uhm, but other than that she, she met all, all my expectations.”

It is clear that Cheryl expected her athletes to progress in their rehabilitation programs. Although Vanessa’s progression was slow, at least she progressed in Cheryl’s mind. Frank’s injury progressed initially, but not at all towards the end of the season. Frank picked up on Cheryl’s progression expectancy initially when his injury was

responding to treatment. He stated, "...she was quite pleased that, that it had progressed like that." Later, when asked if Cheryl had any particular expectation of him while he was in rehab, he responded, "Well, I suppose progression would be one of, of the things." This appeared to further feed Cheryl's perceptual differentiation of her high and low expectancy athletes.

Vanessa's Expectations

Vanessa described her expectation of her athletic trainer as "somebody who cares, uh, enough for the student that can carry out their whole time spent in the training room, but yet, they can't be too close like a buddy-buddy friend." This expectation highlighted the boundaries Vanessa set for the athletic trainer-athlete relationship. This boundary may have been fed by two beliefs. The first belief was that going to the athletic training room may be a sign of weakness, which was made implicit by her coaches. Vanessa stated, "well we weren't really told not to go, but the runners were told if, if it is serious, if it is really, really serious and you know, you take a couple of days and think about it – to go to the training room. But if it is something minor, like if you just need ice, you know, go get ice and just, you know, relax." The second belief Vanessa used to define her boundaries was that athletic trainers may baby their athletes, which prevents them from progressing and keeps them in rehabilitation longer. It seemed that Cheryl was able to attain Vanessa's expectation.

Vanessa described herself as a very independent person, who has her "own expectations" regarding her recovery from this injury. In fact, Vanessa "never really felt like she [Cheryl] expected anything. Uh, like, I guess the only thing she really expected is – and it is more my expectation, I wanted, I really was trying to get better and not

staying with a limp or, or let my ankle really affect me in my sport. Ah, that, that was more my expectation. I really, I expected her to help me get better, to make sure my ankle would heal.” Vanessa also felt Cheryl was never too demanding and left her rehabilitation adherence up to her. She stated, “it was my, my choice if I wanted to come in there [athletic training room]. She never gave me a set schedule. So, after the first couple of times I was in there, it was really up to me, more my choice to go in and out and make sure that I was in there. If, if she, she saw me in there, she would come over and say hi and see how I was.”

Vanessa highlighted her independence and described how the lack of expectations from Cheryl did not influence her rehabilitation adherence with the comment, “To me I guess it didn’t really matter if she had expectations for me because mine were so strong already.” Regardless of Cheryl’s expectations or lack thereof, Vanessa’s expectations were far more important. Cheryl’s perception of Vanessa as a driven athlete may derive from Vanessa’s expectations of herself and her goals for competing.

Frank’s Expectations

Frank expected his athletic trainer to be patient and have an “ability to, to diagnose the injuries and to prescribe a, a course of action.” This remark may link back to how he felt Cheryl handled his injury. It would appear he partially blamed her for his inability to return to football. This was highlighted by the remark, “So, I didn’t blame her completely or anything. She made a judgment on what I should do, you know, this, it didn’t, didn’t pay off.” He expected a fairly quick recovery similar to Cheryl. However, he felt she may have mishandled the treatment. This is interesting when examined with a comment made later, “If I had that time a little earlier, it probably would have healed

quicker, but during in season you don't have – you're not afforded that luxury.” Cheryl recommended time off and subsequently Frank took two weeks off. However, his desire to return to football prompted him to return too early, further irritating his injury. Frank appeared to be taking no responsibility for his injury outcome, instead attributing it to Cheryl's mishandling of his injury.

Frank also expected Cheryl to encourage and motivate him, “to make you work harder by realizing that, you know, you can get back at anytime and not let you forget you could be able to play in the most important game.” Frank appeared to want Cheryl to meet this expectation by “pushing” him through his rehabilitation. When asked how he wanted Cheryl to motivate him, he responded, “well, you know, if I was doing something particularly hard sort of pushing us along and her saying come on keep it going a little longer, you're doing good.” He believed Cheryl did not motivate him much, stating, “I thought I did alright doing it myself, but you know she may have helped out a little more I thought.”

Emerging Patterns and Themes

Impression cues. Impression cues are defined as different categories used to broadly identify initial judgments or assessments used by individuals to form expectations of an athlete's competence or potential (Horn, Lox, & Labrador, 2001). Solomon and Rhea (2002) identified six categories of impression cues used to form coach expectations of athletes: (1) psychological (work ethic, character, and confidentiality), (2) performance (motor skills, sport specific skills, and athleticism), (3) personal (athletes maturation and athletes family), (4) cognitive (academics and tactics), (5) mistakes (errors in recruiting and coaching style), and (6) other sources (other coaches and

athletes). These categories are related to the impression cues used by coaches and some categories may not be relevant to impression cues used by athletic trainers.

However, the impression cues Cheryl used to define high expectancy athletes started to emerge after examining her expectations. Since both athletes were adherent in their rehabilitation programs demonstrated by both Cheryl's comments and the rehabilitation adherence ratios, it would appear Cheryl used an impression cue of compliance and not rehabilitation adherence. In fact, Frank is more adherent to his rehabilitation regimen than Vanessa based upon the rehabilitation adherence ratio. However, Vanessa is seen by Cheryl to be more "driven" than Frank based upon Vanessa's better attitude and effort during the rehabilitation process. Since compliance is defined as the attitude and effort an athlete demonstrates during rehabilitation (Brewer, Van Raalte, Petitpas, Sklar, & Ditmar, 1995), it is not unreasonable to suggest Cheryl's ranking of Vanessa as high expectancy is fed by her perception of her compliance.

Another impression cue used by Cheryl was the physical ability the athletes demonstrated on the playing field. When Cheryl was asked what factors influenced her perceptions of the athletes, she responded, "Looking at the athlete's skill level. Vanessa is a very good runner. Uhm, Frank on the other hand is an athlete that tends to look very awkward when he plays." Cheryl does hold that these perceptions are flexible and Frank could have formed a better impression with her if he had showed more willingness and drive to get better.

Quality of communication. A pattern emerging in this case was the lack of clear communication of the expectations Cheryl had of her athletes. Neither athlete knew what Cheryl expected of them. Vanessa didn't believe Cheryl had any expectations and Frank

appeared to be guessing what her expectations were. When asked what Cheryl's expectations were during the course of his injury, Frank made numerous remarks that started out with 'I suppose' or 'I think'. This included whether or not he met her expectations.

Besides the lack of clear communication of Cheryl's expectations to her athletes, communication between Cheryl and Frank was poor. However, Cheryl and Vanessa appeared to communicate very well (with the exception of Cheryl's expectations). Cheryl continually described Frank as quiet and withdrawn and difficult to communicate with compared to Vanessa. She remarked that she was not as "connected with Frank" as she was with Vanessa. She attributed this to three things: (1) she had a student working with him whereas she worked directly with Vanessa; (2) he was a foreign student with a heavy accent, which made him hard to understand; and (3) he was quiet and withdrawn.

Frank also found it difficult to communicate with Cheryl. He stated they had "a sort of breakdown in communication" when Cheryl told his coach that "she thought I was backing off for some reason" because she had the impression he wasn't working very hard. Frank later remarked, "I don't, don't know why she got that impression because I was always working hard" highlighting his belief he was doing fine in rehab. He would have preferred Cheryl to "have straightened it out with me first." This communication breakdown really "annoyed" Frank. This case highlights the important role communication and trust plays in the athletic trainer-athlete relationship.

Unrealistic expectations. Another pattern emerging from this case revolved around the unrealistic expectations Cheryl may have had of her athletes. Cheryl expected her athletes to question her about their injury, ask for things to do outside the athletic

training room, and make progress in their rehabilitation programs. Fisher and Hoisington (1993) found athletes were more interested in information concerning their rehabilitation program than information about their injury. Since Cheryl's perception and definition of high expectancy athletes seemed to be related to them wanting information concerning their injury, this may be unfair and unrealistic given Fisher and Hoisington's (1993) results.

Fisher and Hoisington (1993) also contend athletes tend to be more adherent when monitored daily by their athletic trainers. They argue that outside and unsupervised work may not be very effective. If this is true, then Cheryl's expectation of her athlete's requesting work outside the athletic training is also an unrealistic expectation. It may be unfair of Cheryl to use her athlete's request for outside work to inform her perceptions of high and low expectancy athletes.

Cheryl's implicit expectation of continued progression may also be unrealistic. Henderson and Carroll (1993) contend each injury should be evaluated and treated according to the athletic trainer's evaluation, but athletic trainers should not assume each injury will respond to therapy in the same timeframe. Athletic trainers should view athletes as individuals based upon the difference in heredity, environment, and learning, which causes athletes to react differently to similar circumstances. In other words, each injury should be treated differently to allow for these differences. Henderson and Carroll (1993) suggested developing realistic individualized therapeutic goals. Although every athlete has a goal of returning to competition, Henderson and Carroll (1993) advise the use of intermediate achievable goals allowing the athlete to experience success throughout the rehabilitation process.

Gender influences. Both Frank and Cheryl made remarks regarding the delicate nature of Frank's groin injury. Cheryl specifically mentions a gender influence when asked if there was anything else important she would like to say about her relationship with Frank. She replied, "The fact that, uhm, sex might have had something to do with it. With Frank being a guy and me being female that might have had something to do with it. He might have been shy about his injury too. That might have, I mean a groin strain is a little bit what you would call not something that, you know, he would want a girl to deal with." Although Frank does not explicitly comment on Cheryl's gender being a factor in the treatment of his injury, he does state, "It was a delicate area for an injury like in the groin area. It, it is sort of a, an, an awkward area to, to diagnose as well." Based on both these comments, it is not unreasonable to believe gender may have played a role in making his injury difficult to treat.

Literature exists focusing on gender differences in psychological responses to injury (Granito, 2002), injury coping mechanisms (Deiters, 2003; Henert, 2000; Anshel, Porter, & Quek, 1998), type of injuries suffered (Covassin, Swanik, & Sachs, 2003; Sallis, Jones, Sunshine, Smith, & Simon, 2001; Oliphant & Drawbert, 1996; Hutchinson & Ireland, 1995; DeHaven & Lintner, 1986) and extremity anatomy (Blackburn, Riemann, Padua, & Guskiewicz, 2004; Decker, Torry, Wyland, Sterett, & Steadman, 2003; Borsa, Sauers, Herling, 2000). However, none of this literature examined the role gender may play in the assessment and rehabilitation of injured athletes. The lack of literature examining the influence of athletic trainer gender on the rehabilitating athlete suggests a gap in the literature warranting further investigation.

Pygmalion factors. Horn, Lox, and Labrador (2001) suggested that not all

athletes will be Pygmalion-prone. They contended that only athletes who are extremely dependent on feedback to provide them with competence knowledge will be easier to “mold” to the expectations of another individual. Athletes not easily affected by the expectations of another individual may use multiple sources of competence information to feed their self-perceptions. This makes those athletes resistant to the Pygmalion process.

Examination of the experiences of the participants in this case demonstrated the likelihood that Frank may be Pygmalion-prone and Vanessa may not be. Frank expected his athletic trainer to “push” him through his rehab especially when it was difficult. This reliance on feedback from his athletic trainer and his subsequent poor compliance due to this lack of feedback may indicate a Pygmalion effect. Vanessa appeared to be resistant to any Pygmalion effects occurring between her and Cheryl. This is likely due to Vanessa’s own expectations being far more important to her than Cheryl’s.

This potential Pygmalion effect occurring between Cheryl and Frank was substantiated by remarks made by Frank. Frank believed his athletic trainer should provide him more feedback in the form of “pushing” him through difficult parts of his rehabilitation. When Frank didn’t receive this feedback, he rushed through his rehabilitation. He attributed this lack of feedback to Cheryl being unconcerned about him and his rehabilitation.

Utilizing his four-factor theory, Rosenthal (1994) argued feedback may not be as influential on athletic trainer expectancy effects as once believed. He suggested climate and input may have a greater affect on interpersonal mediation of expectancies.

Although it appears Frank was reliant on Cheryl’s feedback, the climate Cheryl created in

the athletic training room may be a more critical factor. Cheryl discussed how Frank was quiet and withdrawn making him difficult to talk to, whereas Vanessa was very talkative. Vanessa even comments on Cheryl's ability to converse during rehabilitation sessions. Due to the differences in communicability between Vanessa and Frank, Cheryl may have unknowingly created a warmer socioemotional climate for Vanessa than she did for Frank. Cheryl appeared to spend more time with Vanessa talking to her not only about her injury and rehabilitation but also about life in general. On the other hand, Cheryl had very limited conversations with Frank, perhaps creating a less than optimal climate which he attributed to a lack of concern. This emphasizes the importance of good athletic trainer-athlete communication and rapport.

Case #1

Overview

Becky is a certified athletic trainer with less than five years of experience. Becky worked with Robert and John during the Fall 2003 soccer season. Robert was her high expectancy athlete and John her low expectancy athlete. John fractured his foot when he pushed off the ground to kick a soccer ball down the field causing him to miss the rest of the season. Robert fell on an outstretched arm injuring his shoulder after being tripped by an opposing player. He recovered to play the last few games of the season. Both athletes seemed to be very dedicated and independent, each having high hopes that they would recover and return back to play.

Becky and Robert knew each other before he was injured although they were not very close. Both agreed that during the course of Robert's rehabilitation they became closer and developed a great rapport. This was highlighted by Robert's remark, "I guess

more now after her training with me or whatever, I feel more comfortable talking to her and able to go up to her and ask her a question or something and not worry about being blown out of proportion or something like that.” This comment suggested Robert had developed quite a bit of respect for Becky.

No previous relationship existed between John and Becky before he was injured. A relationship never developed due to John’s nonadherence, which was illustrated by a 0.0 rehabilitation adherence ratio. When John was asked why he never went to rehabilitation, he responded, “I don’t think it’s the most capable training staff in the world” although he did add he really liked Becky and it was nothing personal.

Regardless of several attempts made by Becky to educate John on the benefits of rehabilitation, John refused to attend rehabilitation. John offered two explanations concerning his refusal to attend rehabilitation. The first was his lack of belief in the treatment efficacy of rehabilitation. Although he stated Becky was “cool”, he just “didn’t want to do rehab at all.” He commented he didn’t want to “do the insignificant stuff” in the athletic training room. Instead, he chose to rehabilitate his injury on his own by lifting weights.

Second, John seemed to be very independent, making remarks such as, “plus I like to do things myself. I feel better if I do it myself.” This independence may have arisen from his previous injury experiences, which is substantiated by his remark, “I’ve been hurt enough times to know what I have to do. And I’m back better than I have ever been, so...” In addition, when asked what his recovery expectations were, he stated, “I wanted to come back stronger and faster than I was when I got hurt and I did, without them” and “I wanted to be able to come back and start even though I was injured and I

did that too.”

Becky attributed John’s lack of adherence to two primary factors. First, she believed he may have been scared to come into rehabilitation. According to Becky, this fear could have been related to his belief the athletic training staff would keep him out longer if problems or weaknesses were discovered during his rehabilitation. Second, Becky believed John was indolent since he didn’t want to come to morning rehabilitation. When John was asked if early treatment times deterred his adherence, he remarked, “really, I wouldn’t have come if it was at three or if it was five, I wouldn’t have come, but seven definitely.”

Robert’s compliance and adherence was completely opposite to John’s. He attended rehabilitation regularly with a .91 rehabilitation ratio. Unlike John, Robert believed in the competence of the athletic training staff and the efficacy of his rehabilitation. His expectation of his recovery included, “to be back and be able to play before the season is over,” which he achieved. Becky and Robert both described their relationship as more of a game or competition during Robert’s rehabilitation. Robert viewed Becky’s rehabilitation goals as challenging. He stated, “her expectations made me work harder. I wanted to prove to her that I could do more then what she said I could do. It made me work harder and come in extra times. I figured her expectations were set to make it to the second to the last game of the season, but I figured if I could pass her expectations that would set me ahead of schedule on getting better.” This comment also seemed to demonstrate his belief in the efficacy of the treatment he was receiving in rehabilitation.

Becky's Expectations

Becky believed a successful athlete in rehabilitation must be motivated, have a desire to return to play, have good communication skills, and be cooperative during the rehabilitation process. Becky also expected good compliance during rehabilitation. She remarked, "I think they have to have a good attitude. Not, you know, you tell them to do something and them be like, 'why do I have to do that?'"

Besides her explicit expectations of athletes, Becky also appeared to have three implicit expectations. The first required her athletes not to ask any "weird" questions. Instead, she wanted athletes to ask questions she perceived as relevant and appropriate. This expectation emerged when she was asked what characteristics or attributes Robert demonstrated during rehabilitation and she replied, "Uhm, he was really easy to get along with and did anything you told him to do. No weird questions – he did question, but for good reason, you know, what is this helping, what is this going to help me do?"

Becky's second expectation required her athletes to be adherent during their rehabilitation. Becky made the following remark regarding John's adherence, "I mean I've had athletes before that at least show up for a day or two for some rehab and come in sporadically or whatever. But, uhm, he just didn't seem to really care to me. That's what I saw but like I said I didn't really have that much communication with him because he never showed up."

Finally, the third implicit expectation was progression. When Becky was asked how she knew an athlete was working hard, she replied, "I just think by the, with the outcome is that they do get better. He [Robert] worked hard and progressed in his rehab, you know, he did go through heavier bands and heavier weights and obviously he was

getting the strength back into his shoulder that he would need to return to play.”

Progression appeared to be related to outcome and Robert progressed well resulting in a positive outcome. In this particularly case, progression was realistic since Becky and Robert both agreed his rehabilitation was achievable and individualized. A remark by Robert highlighted the individualized treatment he received allowing a realistic progression:

“Each week she wanted me to get more and more range-of-motion. Like the first week I could hardly raise it up and she said by the middle of the week I want to be able to get it above your head. And I was like that’ll be easy and she said oh, well okay you just need to work on it and we’ll see. I barely got it above my head by the time she wanted me to and then she would move it up each time and then it got to where she had me throwing balls back and forth. And she just had certain steps, it’s kind of like baby steps taken back to, to basics and working your arm out. She didn’t over set my goals. She set them about right to where I could reach them, but they weren’t easy to reach.”

Robert’s Expectations

Robert expected his athletic trainer to be dedicated, friendly, and honest. Honesty appeared to be a major component of Robert’s rehabilitation adherence, implied in his remark, “You need to be friends with them and be honest with them because if you’re not honest, I mean, it could really hurt somebody’s confidence if you tell them oh, you’ll be back next week, but then three weeks later you’re not going to be back.” Robert made comments throughout his interview explicating Becky’s exceptional ability to be honest during his rehabilitation. Robert’s experience with Becky seemed to emphasize the need for athletic trainers to make realistic assessments of their athletes’ injuries in order to provide them honest feedback.

John's Expectations

John's expectations of his athletic trainer seemed centered around having a caring and competent individual he trusted who was invested in his recovery. The following remark demonstrated what attributes and characteristics he felt made a good athletic trainer:

"Someone who, someone who cares but still knows what they are doing. Some trainers, they, they have no emotions, and like they, they just do their job and they do what they think is right. And they really have no connection. And there are some who either know what they are doing or they don't, yet they are real nice and everything and you get comfortable with them. There needs to be a mixture of both of them, instead of one or the other. As long as I, I feel confident they know what they are saying then I would ask them more about what they think. That's building trust in them when dealing with your injury. Hope, hopefully they will get you back into shape."

The athletic training staff appeared to fall short of these expectations and did not meet John's expectations. Although John got along with Becky, he still refused to do rehab. General comments he made regarding the athletic training staff's competence underlined his distrust in their ability to treat his injury. He also found no connection with any of the athletic trainers. This lack of connection and trust appeared to be very important to John. When probed why he felt this way, he referred to stories he had heard from fellow athletes regarding their "bad" experiences in the athletic training room. This distrust and lack of connection, combined with his independence and previous injury experiences, may explain why he rehabilitated his own injury. John made a full recovery and was released for full activity, achieving his goal. This goal achievement allowed him to earn a starting position on the team following his return.

Emerging Patterns and Themes

Impression cues. Becky used both compliance and adherence to inform her perceptions of her athletes' abilities in rehabilitation. Becky suggested John's rehabilitation nonadherence may be related to him not wanting to get better, which caused her to give up on him. Unlike John, Robert came to rehabilitation regularly contributing to his ranking by Becky as high expectancy. Becky also used compliance as an impression cue. She described Robert as very motivated, hard working, and even as having "more drive" than John. Becky's statements suggested she used compliance and rehabilitation adherence to determine high and low expectancy.

Becky may have also used work ethic on the field to form perceptions of her athletes. When asked how she determined athletes were meeting their potential in rehabilitation, she replied, "I mean, you can tell when someone is working hard and, uh, from like watching Robert in the past. He's a very hard worker on the field. I mean you can tell just by watching him in practice he likes to work hard in doing the drills in practice and in the rehab he worked hard." She did not mention anything about John's work ethic on the field, which may suggest she either never took note of his work on the field or she believed his field work ethic was weak. Even though she mentioned work ethic on the field in her interview, it appears this may not have influenced her perceptions in this particular case. Becky suggested if John had reported for rehabilitation and worked hard to complete his rehabilitation, she would have perceived him differently.

Unrealistic expectations. Becky eventually gave up on John because he refused to come in for rehabilitation. Becky attributed John's nonadherence to an unconcerned attitude because he "obviously didn't want to get better." However, John did want to get

better and subsequently returned to activity earning a starting position. Becky's expectation of rehabilitation adherence may be unrealistic. According to Houghlum (2001), fractures of the foot require immobilization to allow healing and focus of rehabilitation during immobilization is centered on pain and edema control until weight bearing is possible. In addition, Houghlum suggested fractures surgically repaired can advance to weight bearing sooner preventing complications from prolonged immobilization. John's fracture was surgically repaired, which allowed him to weight bear quickly. However, during his immobilization, no rehabilitation exercises could be done until he was allowed to bear weight. Once John was allowed to bear weight, he progressed without rehabilitation. This progress may be due to the lack of surgical or healing complications. Therefore, Becky's expectations of rehabilitation adherence and compliance during immobilization may have been unrealistic. This case suggests athletic trainers may need to re-evaluate their rehabilitation adherence and compliance expectations with injured athletes with uncomplicated healing fractures.

Becky also wanted her athletes to ask questions that she deemed appropriate. According to Fisher and Hoisington (1993), athletes usually have many questions when entering the rehabilitation environment. These questions allow unique opportunities for athletic trainers to provide injury and rehabilitation information to injured athletes. Tunick, Etzel, and Leard (1991) suggest athletic trainers need to provide information as soon as the athlete is injured. This information should include injury severity, potential of recovery, possible limitations, and injury treatment plan. Additionally, they contend this information may need to be reiterated multiple times since the injured athlete may have difficulty understanding his/her injury through various recovery stages. Hence, any

questions asked by athletes need to be answered regardless of how the athletic trainers might perceive these questions. Questioning by the athletes may be an attempt to cope with particular aspects of their injury.

Pygmalion factors. Each of Becky's athletes seemed to be very independent. John felt he had been injured enough times to know what to do to recover. This previous injury experience combined with his lack of faith in the athletic training staff may have resulted in his nonadherence. Robert also demonstrated a high degree of independence. Robert's expectations of recovery and his timeframe for returning to play superceded that of Becky's. In fact, he used Becky's expectations as a minimum baseline for his achievements and had a personal goal of surpassing them. Both athletes appeared to take control and be responsible for their rehabilitation.

Neither athlete appeared to be Pygmalion-prone even though a difference existed in Becky's behavior toward them. Robert described Becky as concerned, honest, and lenient while allowing him to voice his opinion. She, in turn educated him about his injury. John believed Becky was cool, but no rapport or connection was established in the relationship. He seemed content with this lack of rapport or connection even when he realized she gave up on him. When asked how he knew she had given up on him, he replied, "Oh, it was just, she stopped asking me to come and stuff and that was fine."

Rosenthal's (1974) four factors are present in Becky's differential treatment of her athletes. Robert was exposed to a warmer socioemotional climate, given positive feedback, and allowed to voice his opinions (input). John's experience was much different compared to Robert. The only feedback he received concerned his noncompliance and nonadherence to rehabilitation. In addition, John felt he had no

connection with the athletic training staff. This lack of rapport appeared to create a climate inadequate for his needs and prevented him opportunities to voice his concerns and opinions. Although these factors existed, John did not seem to be Pygmalion-prone and returned to activity earning a starting position on the soccer team.

Case #2

Overview

Tina is a certified athletic trainer with less than 10 years of experience who worked with Allen and Bo. Allen and Bo were baseball athletes who had injured themselves twice during the 2002 - 2003 season. Allen was her low expectancy athlete and Bo her high expectancy athlete. Allen was injured after an opposing player slid into him fracturing his fibula. Following his return to play from the leg fracture, he fractured his wrist requiring him to miss the rest of the season. Bo sprained his ankle during the first part of the season and made a full recovery. After returning back to play, he injured his knee which required surgery ending his season.

Tina and Allen knew each other from the previous year after Allen had injured his knee requiring surgery. Tina supervised his knee rehabilitation and developed “a great respect for Allen” during his recovery. Tina stated, “Allen came back and he was really good, ready to go, ready to play.” After fracturing his leg, Allen “initially came in and we did things, and you know we really thought he was going to get better.” However, he had several setbacks, which Tina states “he just couldn’t progress. He just couldn’t get back out there, so he withdrew. He withdrew from the team, coaches, and stopped coming in for rehab.”

Allen’s perspective is different than Tina’s. According to Allen, he “was doing

things in rehab and eventually about two or three weeks later it healed up pretty good.” His rehabilitation adherence ratio was .73 for his leg. This may have reflected Allen’s initial adherence, alluded to by Tina, at the beginning of his recovery. Following Allen’s return to play, he suffered a fractured wrist ending his season. According to Tina, Allen got “really upset and quit coming in for rehab.” Allen had surgery and eventually made a full recovery. His rehabilitation adherence ratio was .29 for his wrist injury.

Tina and Bo did not know each other since Bo was an incoming freshman. Tina described her initial impression of Bo as an athlete who “was very determined and motivated.” Initially, she was somewhat surprised when Bo didn’t respond as she expected and believed a lack of previous injury experience may have contributed to his slow progress. According to Tina, “He just wouldn’t push himself and wouldn’t work hard.” His rehabilitation adherence ratio was .47 for his ankle injury.

The relationship between Tina and Bo got stronger and eventually Tina was able to educate and push Bo to do more rehab. Bo responded and his rehabilitation adherence improved allowing him to recover from his ankle injury and return back to play. After his return to baseball, Bo suffered a knee injury requiring surgery, but the relationship was strong. Tina stated, “he has been really dedicated to it [rehabilitation] and has probably been the best knee rehab I’ve had since I’ve been a certified athletic trainer.” Bo’s rehabilitation adherence ratio was .72 for his knee.

Tina’s experience with Bo after he injured his knee was much different from her experience with him during his ankle recovery. He did “exactly what I asked of him. He worked so hard.” Tina also commented, “He’s very motivated and dedicated to getting back. Uhm, what I’ve always thought he would do, you know, what I saw in him

initially. And I think it was just that initial injury just scared him.” Tina seemed to be very pleased with Bo’s recovery.

Tina’s Expectations

Tina expected her athletes to be dedicated, determined, and motivated to “play the game.” She believed “motivation is a very, very strong key factor” and suggested this must be within athletes initially, otherwise the athletic trainer will have difficulties assisting athletes with their recovery. If athletes are motivated, determined, and dedicated, then Tina believed they would want to get better and return back to play.

Tina also expected trust to develop in the athletic trainer-athlete relationship for a successful rehabilitation. She suggested trust was a crucial part of the athletic trainer-athlete relationship and stressed this in her remark, “If they don’t trust you, they’re not going to come around to believing that what you’re doing is for them and you’re trying to get them back on that field. Uhm, I think that comes back to motivation.” It appeared Tina linked trust in the athletic trainer-athlete relationship to motivation. If athletes trusted and believed in the athletic trainer, then they would adhere and comply with their rehabilitation program.

Finally, Tina seemed to have an implicit expectation of compliance. When asked how she ranked her athletes from low to high ability, she responded, “Uhm, I think of the list and the names I gave you, the high ability ones I could have probably chosen any of them to be ranked number one or number two. I mean, that I had a lot of really good compliant athletes that just worked really hard and were determined and motivated to get better and on the field.” Her statement suggested compliance was important for recovering athletes. It would appear Tina believed rehabilitation adherence alone is

inadequate to ensure good recovery. Compliance also seemed to be crucial to athletes' recovery.

Bo's Expectations

According to Bo, an athletic trainer should be "concerned about how you feel, both emotionally and physically, not just how your body feels but how you're doing emotionally." He believed this is an important characteristic because injured athletes need this concern from people who are close to them following an injury. In this case, the person is the athletic trainer. Bo believed Tina demonstrated concern throughout his rehabilitation.

Bo also wanted his athletic trainer to "push" him during his rehabilitation program. He stated, "the athletic trainer has to push you, you know, through rehab 'cause some people might not – like you might be lazy and might not want to do it because it hurts, but you know it's going to be good for you in the long run." He also described Tina's ability to "push" as "a good characteristic that she shows. She pushes you to a certain extent. She don't want to push you too hard 'cause she knows that you're in pain, but she pushes enough."

Finally, when Bo was asked what his own expectations for his recovery were, he replied, "I really didn't have none because like I thought this was an injury that would take months and months and months to heal so the only expectations I had of myself was what she [Tina] had of me." It would appear Bo did not have any recovery expectations of his own. Instead, he completely relied on Tina's assessment of his abilities during recovery to inform his perceptions of rehabilitation progress.

Allen's Expectations

Allen wanted his athletic trainer to be caring while “being hard” and making the “athletes be in there [in the athletic training room]. When asked what he meant by “being hard,” Allen made the following remark:

“Just like work them hard, you know, don’t let them go in there and just be lazy. Stay on them because I’ve even went in a few days where I didn’t really want to do anything. But it’s them that need to be there and keep them going. Don’t let you go down any.”

Allen believed he worked harder when his athletic trainer pushed him. When asked what attributes or characteristics his athletic trainer demonstrated, he stated, “Tina stayed on me and checked up on my progress.” Interestingly, he did not directly comment that Tina had pushed him during rehabilitation suggesting she might not have completely met his expectations in this area.

Emerging Patterns and Themes

Pygmalion factors. Tina admitted she treated Bo and Allen differently. She felt Bo needed to be pushed to be successful in rehabilitation. She also commented that she empathized with Allen’s injury history and did not want to push him as illustrated in the following remark:

“I felt, I did feel bad for him and I think I did back off a little bit on him, uhm, on being hard on him. You know, trying not to push him so hard, but, uh, still encouraging him to do his rehab, but I couldn’t get him to do that and I don’t guess I pursued him as hard, you know, to come into the training room. I’d call him once or twice or make a note or when I’d see him I’d say something. But I didn’t make as big an issue about it as I did somebody that I knew with rehab would actually get better.”

This statement also suggested she didn’t believe in the efficacy of rehabilitation for Allen’s injury. She made several comments concerning how “there’s not much we

could do for a fracture.” She even mentioned, “he was in a cast and again, there was no rehab we could do, nothing really that we could motivate him [to come into rehab].

These remarks demonstrated her belief that little could be done for Allen in rehabilitation.

This may have also influenced her not to push Allen. Yet, she wanted him to at least “adhere to some kind of rehab policy or at least checking in with me, you know, once or twice a week when he couldn’t do anything – he was in a cast.” As previously discussed, this may have been unrealistic given the nature of Allen’s injury.

Tina’s decision not to push Allen is interesting when examined against Allen’s expectations of his athletic trainer. Allen wanted to be pushed in rehabilitation.

However, Tina admits she doesn’t push him for two reasons: (1) she did not believe in the treatment efficacy; and (2) she was empathetic to Allen’s situation and did not want to show a lack of compassion. Tina’s behavior may have communicated her low expectations, potentially creating a Pygmalion effect, which influenced Allen’s rehabilitation adherence. From Allen’s perspective, he believed he had achieved Tina’s expectations.

Bo also appeared to be Pygmalion-prone. He has no expectations of his recovery other than those provided by Tina. Unlike Allen, Bo appeared to be positively influenced by Tina’s expectations. Tina had high expectations of Bo, which prompted her to push and stay on him to rehabilitate his injury. Since Bo wanted this characteristic in his athletic trainer, he responded by being compliant and adherent to his rehabilitation regimen. If Tina’s expectations of Bo had been similar to Allen’s, Bo may not have adhered to his rehabilitation program.

Unrealistic expectations. Tina made five comments regarding the treatment

efficacy of healing fractures. She believed little rehabilitation could be done during the initial stages of fracture healing. Yet, she still appeared to want Allen to adhere to some rehabilitation plan. Tina also seemed to perceive Allen as low expectancy because of his lack of rehabilitation adherence and team involvement. However, Allen did not seem to realize he failed to meet Tina's expectations. Instead, he believed he had had a successful rehabilitation. This case suggests it may be unrealistic to expect athletes to adhere to a rehabilitation program during the initial period of fracture healing since casting prevents therapeutic exercise in some cases (Houglum, 2001). This unrealistic expectation may have been used to inform Tina's low expectancy perceptions of Allen.

Social support. Bo commented after he was injured that Tina "made me feel real comfortable and she pretty much helped me through everything. She just made me feel comfortable and she seemed very, very concerned about the injury." It appeared Tina was a crucial part of his injury social support. However, Tina suggested Allen withdrew from everybody including the athletic training room. Although this may have been the case, nothing in Allen's interview suggested he deliberately withdrew from rehabilitation. As noted previously, Allen believed he had met Tina's rehabilitation expectations and only missed "three or four times, maybe the whole time [during rehabilitation]." An argument could be made that Allen was receiving other social support to cope with his injury. Allen seemed to want Tina to push him, and her failure to meet this expectation may have been interpreted as a lack of support, which he pursued elsewhere.

Case #3

Overview

Lana has more than 15 years of experience as a certified athletic trainer working with basketball and baseball. Clark was Lana's high expectancy athlete and Andy was her low expectancy athlete. Andy is a baseball player who was injured when he planted his foot in order to field a ball and twisted his knee. Imaging studies were obtained showing a cartilage injury. Andy was allowed by his doctor to finish his season. Clark is a basketball player who slipped on the court landing directly on his knee, which caused swelling and inflammation. Initially, he was able to play following his injury, but eventually pain prohibited participation.

Lana described both her athletes similarly. According to her, both Andy and Clark are high caliber athletes. She also described Clark as a "very level headed and soft spoken. He will not say much. He's an observer. He's a really neat person." Andy was described by Lana as an athlete with the "ability to just wow anybody with his sparkling personality."

According to Andy, Lana and he had a "strictly professional relationship" before he injured his knee the first time during the 2002 – 2003 baseball season. Before this injury, Andy stated, "I honestly didn't have any feelings about the trainer. Uhm, I thought she was a good stretcher (laughs)." During his recovery, however, he felt they formed a very close relationship, which he described, "when you are around a trainer like that for such a long time doing rehab, it's almost like your family and uh, it's not just business, it becomes personal." Lana admitted that Andy was very compliant and adherent to his rehabilitation regimen during his first injury, which was much different

than with this injury.

Both Andy and Lana agreed on the quality of their relationship even though Lana ranked Andy as her low expectancy athlete. Lana suggested Andy was sporadic in his rehabilitation adherence this year for two reasons: (1) he didn't believe in the efficacy of his treatment and (2) he may not have wanted to acknowledge he had a problem. Those occasions when he did report for rehabilitation, she believed he may have needed "a little psychological pat saying this is not as bad as you think it is, you can do this." Even though Lana appeared to be frustrated with Andy's sporadic attendance in rehabilitation, she did not push him to adhere to rehabilitation because he was fully functional. She stated, "If Andy had significant deficiencies and was trying to still play, I would have been all over his behind and Coach would have kicked him off the floor." Andy had a .35 rehabilitation adherence ratio.

Interestingly, Clark and Lana had very different perspectives concerning the quality of their relationship. During Lana's interview, she expressed concern regarding her physician referral decisions after Clark was injured. She sent him to a general practitioner instead of the team orthopaedic surgeon. She appeared very distraught with periodic emotional breakdowns during the interview while discussing her decisions. The following excerpts highlight Lana's feelings towards Clark and suggested she experienced some self-doubt concerning her physician referral choice:

"I like him [Clark] a lot. I think he's a really nice young man and, uh, he has a really interesting demeanor...Uhm, and when he suffered this injury, that's why it's affected me so much because I'm just like oh my God, you know, this poor kid because it was really bothering him (nervous laugh) (tears well up in her eyes)."

“Uh, (pause). I think, that uh, it comes down to, I don’t know if we did the right thing for him (fighting back tears, voice quivering) soon enough, soon enough. I probably should have just shot him up to Dr. Jack [pseudonym] at the very beginning. (pause, sniffs nose) And would it have made a difference? I don’t know because if we had gone to Dr. Jack right at the beginning [instead of Dr. Fritz, pseudonym] he might have, you know, it might have been two weeks or something before, uh, before anything was done anyways. So (pause).”

Clark described his initial relationship as “pretty good.” He stated, “she was always there like when I would come in she would work with me and any other guys who came in at that time. She would always be there.” However, Clark’s impression of Lana changed after he injured his knee. He believed, “she wouldn’t have cared if I had come [to the athletic training room] one way or another.” Clark felt Lana didn’t want to spend any time helping him with his recovery. He commented that he “went in almost every day at three or four o’clock before practice and it [lack of attention from Lana] just started progressively. She would spend less and less time with each time.” This lack of attention seemed to really disappoint and upset him, but he still went to the athletic training room for rehab which is corroborated by a .74 rehabilitation adherence ratio.

Lana’s Expectations

Lana wanted her athletes to be dedicated to their sports and have a sense of team and team responsibility. She contended this dedication resulted from the athletes’ love of their sports. She stated, “if they don’t love their sport, and that comes back to that team concept because a lot of people aren’t involved in sports to be part of a team, the, the love of being involved in a team, but if they truly love their sport, then they are going to, to do whatever it takes for them to get back to being able to do whatever they love to do.”

In addition, Lana believed athletes must be both physically and mentally tough especially if they were to be successful in rehabilitation. She also suggested that low pain

threshold influenced the ability of athletes to effectively rehabilitate their injuries.

Henderson and Carroll (1993) suggested athletes vary in pain tolerance and threshold influencing their ability to cope with injury. In addition, pain has been reported as a significant factor influencing rehabilitation adherence (Fisher, Domm, & Wuest, 1988). Lana's belief does appear to be justified. Hence, care should be exercised to accurately assess athletes' pain in order to make realistic decisions regarding rehabilitation (Heil, 1993). This accurate pain assessment may prevent unrealistic progression expectations from occurring during rehabilitation, allowing the athletic trainer to provide appropriate pain modulation therapy (Heil & Fine, 1999).

Lana also had implicit expectations of her athletes. She wanted her athletes to be compliant and adherent in their rehabilitation programs, but at the same time she did not feel she should have to push them to come in for rehabilitation. Lana believed athletes needed to take responsibility for their own rehabilitation adherence. Lana did exhibit some flexibility with this expectation because she seemed willing to push athletes to come in for rehabilitation when they were unable to properly function on the playing field.

Gordon, Milio, and Grove (1991) suggested one goal athletic trainers and physical therapists should have is to encourage their athletes to be responsible for their rehabilitation. An assumption underlying this goal is that athletes will be more invested resulting in better compliance and rehabilitation adherence leading to better recovery outcomes (Brewer, Van Raalte, & Petitpas, 1999). A drawback to this goal is that it is dependent on the speed of recovery. Athletes recovering faster may demonstrate greater treatment efficacy and be more likely to accept responsibility for their rehabilitation

compared to athletes recovering slower (Brewer, Van Raalte, & Petitpas, 1999; Laubach, Brewer, Van Raalte, & Petitpas, 1996; Grove, Hanrahan, & Stewart, 1990). Athletes with low treatment efficacy exhibiting poor adherence and compliance should be monitored carefully with continual attempts to provide an educational and supportive rehabilitation environment to enhance their belief in treatment efficacy (Duda, Smart, & Tappe, 1989).

Andy's Expectations

Andy wanted his athletic trainer to be caring and dedicated to getting athletes better. He also wanted a close friendship type of relationship with his athletic trainer, something other than just a business arrangement. He believed this friendship could assist injured athletes in coping with their injuries. Andy seemed to rely heavily on his friendship with Lana and was able to obtain the support he needed.

Clark's Expectations

Clark's expectations were similar to Andy's. He wanted his athletic trainer to be caring and dedicated to providing services to athletes. He also added that the athletic trainer should be patient and understanding when dealing with injured athletes. He believed if the athletic trainer liked what he/she was doing, then these attributes would be present. It would appear Lana was able to meet Clark's expectations early in their relationship. However, after Clark suffered his knee injury, he felt she did not meet these expectations.

Emerging Patterns and Themes

Pygmalion factors. Clark suggested the lack of attention Lana demonstrated may be related to her lack of concern with the well-being of athletes in his sport. He felt other

sports received more attention and better care. This lack of attention seemed to upset him as seen by his comment, “it [lack of attention] makes me kind of mad because we are probably one of the best teams on campus and we’re small and I don’t think we get adequate attention. Adequate, uh, accommodations.”

Although a possibility existed that Clark’s explanation was partially true, another explanation for Lana’s behavior appeared to emerge from her interview. Lana seemed to be very upset concerning the inadequate care provided by the physician and her inability to help Clark. She believed she made a mistake and held herself responsible for referring him to Dr. Fritz instead of Dr. Jack. She believed Dr. Jack would have been more successful in treating Clark’s injury. These events appeared to frustrate Lana and made her feel guilty. This was compounded by her belief in his athleticism. There is a possibility the feelings may have caused her to withdraw from Clark because of her low expectations of his recovery. It could be argued Lana’s behavior was related to her low expectation of his recovery, which may have provided the foundation for a Pygmalion effect to occur.

However, Clark does not appear to be Pygmalion-prone. When asked what influence Lana’s withdrawal had on him, he replied, “I showed up because I wanted to get my knee better. And most of the time I could’ve just did it in my room, but I knew if I went to the training room I would definitely get it done. So that’s why I went. Most of the time, I didn’t even expect her, uh, Lana to help. I just went in and sort of done it.” Since Clark does not appear to be Pygmalion-prone, Lana’s expectancy behavior didn’t appear to influence his rehabilitation adherence. However, it is not unreasonable to believe if Clark had been Pygmalion-prone, he may have stopped coming in for

rehabilitation creating a self-fulfilling prophecy.

Social support. The following comment by Andy underlined the importance he placed on his friendship with Lana:

“Uhm, I mean another one would be of course, you know, just being your friend and being there because, you know, athletes, uh, (chuckles) you know, when they’re not out playing their sports that they probably been playing since they were three years old, and you know, when they’re not out there playing it gets really stressful. And you know sometimes it takes, you know, somebody to pat you on the back and say everything is going to be okay.”

This comment demonstrated how the athletic trainer was an important part of the athlete’s injury social support network. Hardy, Burke, and Crace (1999) defined injury social support as a multidimensional concept regarding the support athletes seek from others to cope with their injuries. According to Izzo (1994), athletes viewed athletic trainers as a primary source of social support superceded only by that provided by their parents. Andy seemed to rely heavily on the injury support provided by Lana.

Quality of communication. Andy and Lana seemed to have a great rapport and appeared to communicate well. Lana even encouraged Andy to come in for rehabilitation as seen in this statement, “I told him more then once that look, you know, if we just get this taken care of and you do what you need to do and we maintain some of these things, we probably won’t have any more problems.” Andy suggested he had a great rapport with Lana stating, “She pushed me more then anybody. Uhm, I think she was my worst critic. Uh, you know, if I was being lazy doing rehab she would, she sat over there, you know, watched me like a watch dog to make sure I was doing the right things and doing what I had to do to get better.” As noted previously, Lana appeared to be an integral part of Andy’s injury social support network.

The relationship between Lana and Clark seemed to have weakened to the point neither was communicating to the other. This becomes apparent when Clark was asked why he never talked to Lana regarding her increased lack of attention towards him. He replied, “Not sure. Just, just basically I was trying to get to practice or I just got whoever was around to help me and didn’t make a big deal out of it. I figured she was doing something more important.”

The breakdown in communication between Clark and Lana seemed to be supported by Clark’s inability to determine what Lana expected from him. When asked what Lana’s expectations were, Clark replied, “I really do not know what she expected of me.” Neither Clark nor Lana appeared to be communicating with one another creating a relationship full of misperceptions.

Case #4

Overview

Chris is a certified athletic trainer with about five years of experience. Jessica and Sarah are both volleyball players who suffered knee injuries during the 2002 – 2003 season requiring surgery. Chris saw Jessica as his high expectancy athlete while Sarah was his low expectancy athlete. Each athlete worked with Chris before and after their surgery.

Jessica was injured when she was unintentionally pushed by a teammate during a game causing her to fall. Jessica had her foot planted on the ground while trying to twist to break her fall. She felt a pop and knew “something seriously was wrong with my knee.” She was upset and mad because she had just recovered from an injury to her other knee and had only played five or six games before injuring this knee.

Sarah was injured while performing a drill at practice. The drill required Sarah to face away from the net and upon a signal from her coach, she was to turn around, jump over four volleyballs and then successfully dig a spike. Sarah believed she “tried to react to the ball at the same time I hit the ground” causing her to injure her knee. Sarah had suffered a similar injury to her other knee three years previously, so she claimed to have a good understanding of her injury and the rehab it would require. Due to this previous injury experience, she was very upset because she knew how much of “a struggle [it was] to get through all the rehab and get back to where you were before.”

Chris described each athlete as driven to compete at high levels. He believed Sarah was driven to play sports in general, unlike Jessica who was a “diehard” volleyball player. All three participants suggested they had a friendship type relationship that has grown during rehabilitation.

Both Jessica and Sarah described Chris as a competent athletic trainer with whom they had built immense trust during their rehabilitation. Each depicted Chris as a concerned “friend” who was there for her whenever she needed him. Chris appeared to be a central figure in their injury social support network. Sarah even commented that she visits Chris outside of her rehabilitation sessions to “just talk to him and stuff. I would tell him about problems at home and like just different difficulties that I’ve had.” Jessica also explained she relied on Chris during her recovery due to the immense trust that had developed in their relationship.

Although Chris described each athlete similarly at first, his description of Sarah changed after she returned from a doctor’s appointment. According to Chris, her entire demeanor changed after her doctor told her he wasn’t going to clear her to play

volleyball. Sarah suggested her doctor did not feel she should continue to play collegiate sports because of her injury history. At this point, Chris felt Sarah “didn’t have that much ambition to get better.” Sarah would still come to rehabilitation, but Chris contended these visits were more social in nature. He also believed he could have done a better job getting her to do her rehabilitation instead of socializing. However, it could be argued that Sarah would not have responded to Chris’ attempts to achieve compliance since she wouldn’t allow him to push her during rehabilitation.

Chris made several remarks regarding the difficulty he had working with Sarah after her change in attitude. Chris didn’t appear to feel this way about Jessica. According to Chris, Jessica was focused and always wanting more work to do so she would get better faster. Additionally, she was inquisitive, asking Chris questions regarding her rehabilitation program and recovery. He felt he “could have just gave her a group of exercises and told her to do it on her own” and she would have done it.

When Chris was asked if he treated his athletes differently over the course of their rehabilitation, he responded:

“I would have to say yeah. Uh, uh, I would definitely say that with Jessica uhm, I, I was always there. I was a little bit, extra motivator for her, you know, no matter what. You know, even if she would come in still wanting to work, but still come in a little, with a little less energy then like previous days, I would get on her about it. Whereas with Sarah, she would be lethargic on Monday, lethargic on Wednesday, and I would just kind of well, I’m like, alright well, if that’s how she’s going to be, then that’s how she’s going to be, and I didn’t take that extra step, which wasn’t right. But at the time it was just, it was hard to deal with. You know, I can honestly say I’ve never worked with two athletes at the same time that were two opposites like that.”

This comment suggested Chris changed his behavior towards Sarah because she was not meeting his expectations in the athletic training room. Chris wanted his athletes to “have

a strong determination and the will to want to get back.” It could be argued Sarah was falling far short of achieving his expectation, which Chris recognized causing him to change his perception of Sara. As suggested by his comment, this change in perception also caused a change in his behavior, which lay the foundation for a Pygmalion effect to occur. However, Sarah did not appear to be Pygmalion-prone because she still attended rehabilitation and felt she met all of Chris’ expectations until her doctor discontinued her therapy.

Although Chris discussed in great detail the difference in attitude between Sarah and Jessica, he never mentioned difficulty in getting either to be adherent to their rehabilitation. Both Jessica and Sarah believed they did fine in rehabilitation and both appeared to be adherent. However, Sarah described how Chris would be upset on those rare occasions she did not show up on time for rehabilitation. She contended that Chris would “act mildly perturbed” and tell her she needed to let him know when she couldn’t be on time.

The apparent adherence of these athletes is interesting as compared against the actual rehabilitation adherence ratios are examined for each athlete. The rehabilitation adherence ratios for Sarah and Jessica were .59 and .77, respectively. It would appear that Jessica was more adherent than Sarah, although Chris did not seem to recognize this difference in rehabilitation adherence. A possible explanation may be related to Sarah’s social visits to the athletic training room to talk to Chris and her social behavior even when she came in for rehabilitation. Chris may not have documented all these visits as rehab since they appear to be more social in nature, but still viewed her as being adherent in rehabilitation because she was physically present. Instead, he may have viewed this

social behavior as a compliance issue, which he did talk about in great detail.

Chris' Expectations

As previously noted, Chris wanted his athletes to have a strong determination to get better and return to play. He seemed to define this determination as the athlete reporting to the athletic training room understanding they have to have something they want to achieve “whether it is just rehabbing an injury or going a step beyond.” He also did not want his athletes to be indolent. When asked to explain what he meant by this, he replied:

“Uh, essentially what I’ve basically, uh, expanding on what I’ve already said. It, you know, they can’t expect it to be all on me. They have to want to come in kind of, you know, uhm, more or less wanting that, wanting to get better from the sense of they’re the ones that put the effort into it. I’ll do my job in instructing them what to do, but they have to be the one who puts the effort forth, if that makes sense.”

When asked how he would know when his athletes were achieving his expectations, he replied they “would be excited and want to do their exercises.” He added these athletes would also have goals to return back to play within the “textbook range if not sooner.” These comments appeared to lay the foundation for Chris’ implicit expectation of progress, which he discussed while describing what attributes and characteristics his athletes demonstrated during rehabilitation. He described the importance that small gains are to therapists during a long term rehabilitation program even if it is difficult for the athletes to understand how those small gains related to their return to play. Chris seemed to believe that athletes may lose their focus in long term rehabilitation programs due to indolence causing a lack of progression. He suggested that it is the athletic trainer’s job to “pick them back up and make them realize hey, you’re

getting there, you've just got to be patient."

Sarah's Expectations

Sarah wanted to work with an athletic trainer who was open and friendly. She emphasized the importance of friendship in the athletic trainer-athlete relationship. She also appeared to want to work with somebody of her choosing and not somebody she had to work with. This was illustrated by the following comment she made when asked what attributes or characteristics a good athletic trainer will exhibit:

"Uhm, being open and friendly and not just trying to uhm, treat them as – just an athlete. Someone you're working with. Just as a friend and not someone that you have to work with just because – someone that you want to work with."

Chris appeared to meet all of Sarah's expectations including the implicit development of trust within their relationship. This trust seemed to be related to Chris' competence as an athletic trainer, his ability to answer her questions in a manner she was able to understand, and his willingness to listen and discuss personal issues. She also suggested Chris made a very comfortable rehabilitation environment by using humor, which also made "therapy not as boring as it was the first time I went."

Jessica's Expectations

Jessica wanted an athletic trainer who was open and would allow her to establish a personal relationship of friendship. This friendship would give her the ability to easily talk to her athletic trainer and joke around, which she suggested helped take her mind off the pain of rehabilitation. She also wanted someone who is competent and loved what they are doing.

Jessica explicitly suggested her friendship with Chris made her feel comfortable since she could trust him. Her trust in Chris was illustrated by the following comment:

“I just, a bunch, a bunch of it [Chris knowing what was wrong with her], made me feel comfortable with him because I knew I could trust him because I understood that he knew what he was talking about. And I could ask him anything about anything else too, so I knew I could have a lot of trust in him.”

This comment also suggested Chris was able to meet Jessica’s expectations.

Emerging Patterns and Themes

Impression cues. A major component of Chris’ perceptions of Sarah as low expectancy was her poor compliance. This compliance appeared to become relevant after Sarah visited her doctor and the doctor informed her she would not be allowed to participate in collegiate sports. At this point, Chris commented he had a difficult time working with her because “she didn’t have that much ambition to get better.” However, Jessica continued to demonstrate a positive outlook towards rehabilitation compared to Sarah. Chris appeared to use attitude and effort in rehabilitation to inform his perceptions of expectancy more than rehabilitation adherence. As suggested earlier, Sarah was adherent to her rehabilitation similar to Jessica. The difference seemed to be Jessica was focused on rehabilitation and Sarah was focused on socializing.

Unrealistic expectations. Chris expected Sarah to continue to come in and make progress in an attempt to prove her doctor wrong. This was highlighted by the following comment:

“Once she spoke to the doctor and got the MRI and the doctor said yeah you tore it and uh, his attitude was well, I’ve done numerous surgeries on you before, here’s another one and I don’t think we need to keep going down this road. That’s when her attitude changed was after she saw the doctor. And he said to her, you know, maybe you shouldn’t be playing anymore and that’s when she came back and the characteristics she showed was, was just that typical well, the doctor said that I shouldn’t maybe I shouldn’t be doing this. Maybe he’s right. You know versus the doctor, you wanting to prove the doctor wrong saying no, I’m going to get better. I’m going to show him totally different. And she didn’t do that. I mean she totally took his word for what he was saying.”

When Chris was asked to explain how he felt about the doctor's actions, he responded:

"I was a little split. I could see his standpoint because I mean like I said she's eighteen and had multiple surgeries from athletics. Uhm, at the same time I didn't think it was right because everybody deserves a chance to get better and he wasn't giving her that chance. He was kind of like just counting her out. You know telling her I'll do the surgery and you can go through therapy, but you don't have anything to look forward to because I'm probably not going to medically clear you no matter how well you get. So, it was – I don't think that was fair. I didn't think that was right. And it made my job harder because she was done and because of that. And that's a pre – you know that's a person above me in our field. You know my boss basically saying, you know, forget it. And so that makes my rehab job harder in that sense. I have no goal issue for it."

Chris appeared to understand the physician's point of view although he didn't agree with it. He really wanted Sarah to work hard in her rehab and try to prove the doctor wrong. As previously noted, when Sarah didn't respond in this manner he started treating her differently and seemed to give up on her even after acknowledging his understanding of the physician's point of view. For Chris to expect Sarah to want to prove the physician wrong appears unrealistic.

Another unrealistic expectation Chris may have had was his desire to have his athletes progress and return back to play "in that textbook range if not sooner." He commented he expected Sarah to be "gaining as much as those other people at, you know, within reason" even though Sarah had a congenital defect. Chris even stated this congenital defect may have influenced her progress and believed it affected her mentally. However, he still unrealistically expected her to make either textbook progress or at least keep up with athletes with similar injuries.

Pygmalion factors. Chris expected his athletes to have a strong determination to get better. Following Sarah's doctor visit, Chris suggested she lost this determination and

didn't seem to care anymore. At this point, Chris started having difficulty dealing with Sarah and admitted treating Jessica and Sarah differently. He continued to push Jessica to focus on rehabilitation while allowing Sarah to do more socializing. This difference in behavior exhibited by Chris could have caused a Pygmalion effect. However, it appeared Sarah was not Pygmalion-prone since she continued to adhere to her rehabilitation. Sarah's lack of determination appeared to be justified given the nature of her injury.

Social support. Sarah and Jessica both seemed to have a close friendship type relationship with Chris. Each athlete implicitly and explicitly noted Chris was trustworthy and described their ability to talk to Chris about a wide variety of topics including personal problems. Chris appeared to be an integral part of both Jessica and Sarah's injury social support network.

Further Discussion

Each case was analyzed to determine emerging themes and patterns. Similar patterns and themes surfaced across cases (See Table 3). Six patterns and themes emerged from individual cases. These included impression cues, unrealistic expectations, social support, gender influences, quality of communication, and Pygmalion factors. In addition, cross-case patterns emerged concerning athletic trainer expectancies, athlete expectancies, and the bidirectional nature of expectancies. The following discussion involves separate sections examining individual case and cross case patterns and themes.

Emerging Individual Case Patterns and Themes

Impression Cues

Several athletic trainers seemed to use compliance as an impression cue to form expectations of athletes. Specifically, compliance was seen as the amount of motivation

and determination athletes exhibited to get better and return to play. Motivation and determination appeared to be a product of work ethic and attitude during rehabilitation.

The use of motivation as an impression cue immediately creates an unrealistic expectation of athletes that may lead to a self-fulfilling prophecy (Jenner, 1990).

Similarly, Rossi and Filstead (1976) suggested motivation is used by dependency counselors as a mediator of change and attributed patient failure in treatment to insufficient motivation. According to Jenner (1990), this assumes motivation is static and suggests high motivation results in positive treatment outcomes. However, Jenner contends that patient motivation levels before treatment are not a significant factor in treatment outcome and raises issues regarding its importance.

Athletic trainers need to be cautious when using motivation levels to form impressions of athletes. As noted, motivation is situation specific and dynamic in nature, and athletic trainers' perceptions of poor athlete motivation may be incorrect. For example, athletes may seem less adherent and less motivated due to differences in healing rates. Athletic trainers could interpret this as a lack of motivation, which would be false. According to Brewer, Van Raalte, and Petitpas (1999), healing rates should never be used to determine athlete adherence since healing is a component of physiology and is not behaviorally based. Therefore, athletic trainers should be careful using motivation as an expectancy impression cue. Results from this study appear to suggest that there was little relationship between motivation and outcome. All athletes in this study believed they rehabilitated their injuries adequately regardless of athletic trainers' assessment of their motivation levels.

Unrealistic Expectations

Four of the five athletic trainers appeared to have unrealistic expectations of their athletes. Two athletes with fractures were expected to adhere to some kind of rehabilitation program although little can be done during the immobilization phase except pain and edema control (Houghlum, 2001). Another athlete was perceived as unmotivated even though her physician had decided she needed more time to heal and was not going to clear her for collegiate sports. Each of these athletes was viewed by their athletic trainers as unmotivated and uncaring even though they recovered. As previously discussed, athletic trainers should not confuse healing with lack of motivation or adherence (Brewer, Van Raalte, & Petitpas, 1999; Jenner, 1990). In these three cases, it could be argued athletic trainers' expectations were unrealistic. These unrealistic expectations could have potentially caused self-fulfilling prophecies.

Two athletic trainers appeared to have unrealistic expectations of progress. Athletic trainers need to establish individualized goals outlining realistic progression based upon their evaluation of athletes. Additionally, athletic trainers should view and evaluate athletes separately since no two athletes or injuries are alike (Henderson & Carroll, 1993). Athletic trainers who perceive athletes as progressing slowly may inadvertently create a Pygmalion effect based upon unrealistic progression expectations. This perceived lack of progression may also result in decreased belief in treatment efficacy resulting in poor compliance and adherence (Duda, Smart, & Tappe, 1989). The decreased belief in treatment efficacy compounded by athletic trainers unrealistic progress expectations most likely could result in injured athletes' noncompliance and nonadherence.

In order to prevent misperceptions resulting in a potential self-fulfilling prophecy, athletic trainers need to establish realistic goals (Henderson & Carroll, 1993). According to Worrell (1992), the goal of athletes is a quick return to activity. Heil (1993) suggested return to activity goals serves little purpose until athletes are able to understand what it will take to return to activity. Hence, athletic trainers must determine realistic short-term goals that will allow athletes to experience success and eventually return to activity (Henderson & Carroll, 1993; Worrell, 1993). In addition to short-term goal development, Heil (1993) also recommended identifying barriers athletes may have preventing goal attainment. These include lacking injury and rehabilitation knowledge, inability to perform a specific task, perceptions of treatment risks, and lack of social support. Identifying and addressing these barriers will allow athletic trainers to increase athletes' compliance and rehabilitation adherence (Heil, 1993).

Social Support and Quality of Communication

Three cases in this study suggested social support is an important aspect of the athletic trainer-athlete relationship. Athletic trainers are in a unique position to interact with athletes exclusively in early phases of rehabilitation (Tunick, Etzel, & Leard, 1991). Results from this study seemed to suggest athletic trainers serve an important social support role for injured athletes. Athletes described a friendship type relationship with their athletic trainer based upon trust. This perception of trust and friendship allowed athletes to feel comfortable within the rehabilitation environment suggesting athletes perceived a warmer socio-emotional climate from those athletic trainers serving as part of their social support network. Rosenthal (1994) suggested climate is the most important expectancy mediation effect.

In conjunction with social support, two cases demonstrated a breakdown in communication in the athletic trainer-athlete relationship. Each of these athletes seemed to perceive a less inviting rehabilitation environment. Those athletes relying on athletic trainers for social support seemed to communicate better with their athletic trainer. Those athletic trainers communicating more effectively with their athletes may have created a warmer rehabilitation environment for their athletes. Evidence suggests athletic trainers may provide more social support and communicate more effectively with high expectancy athletes compared to low expectancy athletes. If this is the case, athletic trainers must exercise care to provide athletes social support and effective communication regardless of their expectancy perceptions. More investigation is warranted examining the influence athletic trainers' expectancies have on the social support they provide to injured athletes.

Hardy, Burke, and Crace (1999) suggested the purpose of social support was to improve a person's well-being, which is critical for relieving anxiety and enhancing rehabilitation compliance and adherence. Social support can be broken down into three general dimensions: (1) emotional, (b) informational, and (c) tangible social support (Hardy, Burke, & Crace, 1999). Emotional support includes listening and providing comfort to the injured athletes especially early during the recovery process. Informational support consists of educating athletes about different aspects of their injury and rehabilitation. Examples are feedback and positive reinforcement during rehabilitation. Finally, tangible social support includes providing the injured athlete with material and personal assistance. Material assistance provides the athletes with rehabilitation materials for home programs, such as elastic bands and exercise diagrams.

The expertise and time athletic trainers provide injured athletes is considered personal assistance (Hardy, Burke, & Crace, 1999). Athletic trainers are in a position to offer support in each of these categories.

Pygmalion Factors

The purpose of this study was to explore and attempt to understand how Pygmalion works in the rehabilitation environment and how it may influence the rehabilitation adherence of injured athletes. All five cases in this study seemed to demonstrate factors indicating a potential Pygmalion effect could occur if the right circumstances existed. Recall that according to Rosenthal (1994), the most important relationships in his ten-arrow model are the BC and CD links (see p. 18). The BC relationship examines the effects of a person's expectancy on their subsequent behavior (mediating effects). Rosenthal's (1974) four factor theory describes four categories of behaviors (mediation effects) that occur in a person's behavior due to their expectations. Previous research (Solomon, 2001a; Solomon, 2001b; Solomon, 1999a; Solomon, 1999b; Solomon, DiMarco, Ohlson, & Reece, 1998; Solomon, Golden, Ciapponi, & Martin, 1998; Solomon & Kosmitzki, 1996; Solomon, Striegel, Eliot, Heon, Maas, & Wayda, 1996; Martinek, Crowe, & Rejeski, 1982; Martinek & Karper, 1982; Martinek, 1981b; Rosenthal & Jacobson, 1968) has examined different aspects of the self-fulfilling prophecy including mediating effects. These studies indicate high expectancy individuals are provided a warmer socioemotional environment, more information, more opportunities to provide input, and more informative feedback compared to low expectancy individuals. Athletic trainers participating in this study admitted to treating athletes differently, suggesting that their behavior can produce mediating effects which

may result in a self-fulfilling prophecy.

Although the behaviors of athletic trainers and athletes in this study suggested Pygmalion factors can exist in this relationship, not all athletes appeared to be influenced by the athletic trainers' mediating behavior. This supports Horn, Lox, and Labrador's (2001) contention that not all athletes are Pygmalion-prone. Mediating behaviors were present in some cases which could have potentially caused a Pygmalion effect, yet the athletes appeared unaffected. In other cases, athletes appeared to be Pygmalion-prone, which seemed to cause changes in their behavior. This cause and effect can be explicated by the CD relationship in Rosenthal's (1974) ten-arrow model. This relationship examines the link between the mediating behaviors of the expecter and its influence on the expectee's actions creating a self-fulfilling prophecy. A weakness with the current study is its inability to provide significant evidence of cause and effect. Further investigation is warranted examining athletes' behavioral outcomes based upon the expectations and subsequent actions of athletic trainers.

Emerging Cross Case Patterns and Themes

Athletic Trainer Expectancies

Each athletic trainer explicitly described similar attributes and characteristics needed by the athlete in order to be successful in rehabilitation. These included a drive or a willingness to get better, a willingness to listen to the athletic trainer, being a hard worker (not being indolent), dedication, motivation, determination, and a desire to return to play. Additionally, implicit athletic trainer expectancies were brought to light during the course of the interviews which included wanting the athletes to ask questions regarding their rehabilitation and positive gains or progression in athletes' rehabilitation

program, and rehabilitation compliance and adherence.

Athlete Expectancies

Athletes also explicitly described attributes and characteristics they wanted in their athletic trainers. Their responses included good communication, patience, knowledgeable in assessment and rehabilitative techniques, flexibility, encouraging and motivating, caring and concern, friendly, utilizing humor, honesty, professionalism, dedication, and hard working. Additionally, an implicit expectation of pushing the athlete through difficult rehabilitation also emerged.

Bidirectional Nature of Expectancy

One reason this study was undertaken was to explore Pygmalion effects in the athletic training room. During cross-case comparisons and analysis, a pattern emerged demonstrating that Pygmalion effects could potentially be bidirectional. Feldman and Prohaska (1979) recognized that students could have expectations of their teachers which could cause a reverse Pygmalion effect. They conducted two studies to examine student expectancies and their affects on teachers. The first study demonstrated students expecting a good teacher were more positive towards the teachers, demonstrated positive attitudes about the lesson, and seemed to learn the lessons better compared to students expecting a poor teacher. In their second study they found teachers reacted more positively and were ranked more proficient in teaching when their students had positive attitudes towards them. The teachers also rated their own success in teaching lessons more positively when their students had higher expectations of them. These studies demonstrate that Pygmalion can be bidirectional indicating the behavior of athletic trainers can be influenced by the mediating behavior of athletes based upon their

expectations.

As previously discussed, each athlete had his/her own expectations of athletic trainers. Athletes who worked with athletic trainers who met their expectations appeared to have a better rapport with the athletic trainer and were more compliant and adherent to rehabilitation compared to those athletes working with athletic trainers not meeting their expectations. Support from athletic trainer statements indicate athletic trainers were also able to interact with these athletes easier when athlete expectations were being met. This suggests the athlete's expectations of the relationship must be met because they are as important as the athletic trainer's expectations of the athlete's behaviors (S. Gutkind, personal communication, September 10, 2003). Further investigation examining the bidirectional nature of Pygmalion effects in the athletic training room is warranted to enhance understanding of this phenomenon.

Conclusion

Case study and cross-case analysis and comparison indicated six major patterns and themes. Additionally, cross-case analysis demonstrated the possible bidirectional nature of expectancies and the potential important role they play in the athletic trainer-athlete relationship. The next chapter provides a summary, conclusions, and future directions for research.

CHAPTER V **SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS**

Summary and Conclusions

The results of this study suggest the athletic trainer-athlete relationship can contain Pygmalion effects possible resulting in self-fulfilling prophecies similar to teacher-student and coach-athlete relationships. Solomon and Rhea (2002) identified six categories of impression cues used by coaches to form athlete expectancies. The psychological impression cue seemed to be the most relevant to the athletic trainer-athlete relationship although evidence indicated actual rehabilitation adherence was also a factor. The specific psychological variable used by athletic trainers to form their impressions appeared to be the athlete's motivation. However, this view presumed motivation was one-dimensional in nature. In actuality, motivation is dynamic and situational. A situational component of athletes' motivation is the rate of healing. Researchers (Brewer, Van Raalte, & Petitpas, 1999; Laubach, Brewer, Van Raalte, & Petitpas, 1996; Grove, Hanrahan, & Stewart, 1990; Jenner, 1990) suggest athletes with low healing rates will appear to be less motivated and may have a lower treatment efficacy belief. However, this could be a misperception because the athlete may be doing everything possible for the injury at that particular time in the recovery. Due to this, athletic trainers need to exercise extreme caution when using motivation as an impression cue in the rehabilitation environment since it could be an indication of healing rates and not a lack of motivation to recover.

A major component in the recovery of the injured athlete is the rehabilitation program. Athletic trainers form their expectancies of progress based upon individual and

separate evaluations of athletes. However, these expectations may be unrealistic or become unrealistic depending on the healing rate of athletes. Potential evidence provided in this study indicated unrealistic progression expectancies were used to form incorrect impressions of athletes' expectancy levels. Athletic trainers identified athletes as low expectancy, when in actuality, the progressions may have been unrealistic due to differences in healing rates. This could change athletic trainers' behaviors directed at athletes transmitting the low expectancy impression. Pygmalion-prone athletes could then conform to athletic trainers' behavioral expectations and complete the self-fulfilling prophecy. In order to avoid this possible Pygmalion effect, athletic trainers need to make realistic progression expectations and continually reassess and modify them as needed.

Results also indicated expectancy effects can be bidirectional in nature. Athletes have expectations of athletic trainers and evidence suggests these expectancies may be as important as those of athletic trainers towards athletes. Athletic trainers must recognize that athletes also have expectations that inform their perceptions of athletic trainers. In order to increase rehabilitation compliance and adherence, it is suggested athletic trainers be sensitive to these athlete expectations.

Finally, participants were allowed an opportunity to discuss how the PI's relationship with them (as an athletic trainer himself) and the other participants may have influenced their responses during the interview. All participants except one denied any potential influence of their relationship with the PI on their responses. This participant stated there was an influence, but refused to expand on how this influence may have affected his/her responses during the interview. Although the rest of the participants rejected the notion of researcher influence, it is reasonable to assume there may have

been some influence. This is a potential limitation of the current study.

Recommended Practical Applications

The results of this study suggest that athletic trainers should be familiar with and be able to apply proper goal setting and social support techniques. These techniques should be used in dealing with all athletes regardless of athletic trainer expectancy impressions. The proper global use of these techniques may help increase rehabilitation compliance and adherence while decreasing potential Pygmalion effects.

According to Heil (1993), goal setting should reflect the athletic trainers' rehabilitation objectives, establish athletes' commitment to rehabilitation, and allow rehabilitation to be a collaborative process. He suggested nine guidelines for developing goals in the rehabilitation environment, which are as follows:

- (1) Goals should be specific and measurable
- (2) Goals should be stated in a positive manner
- (3) Goals should be challenging, but realistic
- (4) A timetable should be developed for accomplishing each goal
- (5) Short-term rehabilitation goals need to be integrated into day-to-day, season, and career goals
- (6) Outcome goals (return to activity) need to be linked to process goals (specific skills or exercises)
- (7) Goals need to be personalized and internalized by athletes
- (8) Goals need to be continuously monitored and reevaluated allowing modification as needed
- (9) Sport and life goals need to be integrated allowing athletes a broader perspective (Heil, 1993, p. 143)

A well planned rehabilitation with integrated goals could improve communication between athletic trainers and athletes while increasing motivation and treatment efficacy (Heil, 1993). Athletic trainers should pay special attention to their ability to be flexible and modify athlete goals in order to keep them realistic. This seems to be especially important when athletes' progress in rehabilitation has slowed or reached a plateau. This

may help minimize any Pygmalion effects that may occur due to unrealistic expectations.

Finally, athletic trainers should be educated on techniques to provide athletes social support during injury. The present results seem to indicate that athletes who receive adequate social support from athletic trainers will perceive the athletic training room as a more comfortable rehabilitation environment. This perception may increase rehabilitation compliance and adherence of athletes. Hardy, Burke, and Crace (1999) recommended several techniques to improve injured athletes' social support in the rehabilitation environment including the following:

- (1) Athletic trainers should develop active listening techniques
- (2) Athletic trainers should create a warm and comfortable rehabilitation environment
- (3) Athletic trainers should be knowledgeable on technical, mental, and emotional aspects of injuries
- (4) Athletic trainers should provide feedback focused on process goals using the "sandwich principle"
- (5) Athletic trainers should not be afraid to confront and challenge unrealistic progress expectations
- (6) Athletic trainers should try to make timely responses to athletes requests
- (7) Athletic trainers should never attach strings to the support provided to injured athletes (Hardy, et al., 1999, pp. 185-189)

Recommended Directions for Future Research

This research study was conducted using athletic trainers and athletes at one institution, limiting its generalizability to other athletic training rooms. It is recommended that a similar study be conducted using participants from other collegiate schools and levels including NCAA Division I and II schools. By exploring the experiences of athletic trainers and athletes in the other settings, a better understanding of how Pygmalion effects occur in the athletic training room may be obtained.

In addition, three areas emerged in this study that warrant further investigation.

First, an examination of gender influences in the rehabilitation process is indicated. One case examined in this study seemed to provide anecdotal evidence that the gender of the athletic trainer and athlete may play a role in the rehabilitation of certain injuries (e.g., groin). However, exactly what and how these gender differences influenced the rehabilitation environment requires further investigation.

Second, this study provided evidence that an increase in athletes' social support in the athletic training room may create a warmer rehabilitation climate increasing rehabilitation compliance and adherence while decreasing potential Pygmalion effects. Further research needs to be conducted to determine decision-making processes athletic trainers use when deciding what and how much social support to provide injured athletes. If athletic trainers use social support globally, regardless of expectancies, Pygmalion effects may be minimized. However, if athletic trainers provide more social support to high expectancy athletes compared to low expectancy athletes a differential rehabilitation environment may occur, creating a potential Pygmalion effect.

Finally, the results of this study cannot demonstrate cause and effect relationships highlighted by the CD relationship in Rosenthal's (1981) ten-arrow model. The CD relationship establishes that certain behaviors of the athlete are directly related to changes in the behavior (mediating effect) of the athletic trainer (Rosenthal, 1981). Instead, the results of this study focused on athletic trainers' expectancies and their subsequent behavior towards their athletes, which is best represented by the BC link. According to Rosenthal (1981), the BC relationship reveals athletic trainer behavioral changes (mediating effect) directed towards the athlete based upon his/her expectancies of the athlete. Rosenthal (1994) suggested these two relationships are the most important in the

ten-arrow model. Additionally, most of the expectancy research has concentrated on the BC relationship leaving a gap in the literature examining the CD relationship. Further investigation is warranted examining how athletes respond to the athletic trainers expectancy behaviors.

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APPENDICES

APPENDIX A: IRB PROPOSAL

FORM B**IRB #** _____**Date Received in Office of Research** _____**I. IDENTIFICATION OF PROJECT:****1. Principal Investigator:**

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2. Project Classification:

Dissertation

3. Title of Project:

Tentative: "The role of athletic trainer expectations on athlete rehabilitation adherence"

4. Starting Date:

Upon IRB Approval

5. Estimated Completion Date:

July 2003

6. External Funding:

None

II. PROJECT OBJECTIVES:

The purpose of this research project is to examine the effects of athletic trainer expectations on the rehabilitation adherence of the injured athlete. Currently, no studies have been done examining how the expectations of the athletic trainer can influence the rehabilitation adherence of the athlete. Both athletic trainers and athletes can benefit from understanding how the role of athletic trainer expectations influences the rehabilitation adherence of athletes. If the self-fulfilling prophecy (Horn, Lox, & Labrador, 2001) exists in the athletic trainer-athlete relationship, which influences rehabilitation adherence, then steps can be taken to educate athletic trainers of its existence. This education could make the athletic trainers more aware of the overt and covert messages they are sending and could even contain strategies to prevent these messages. This might then improve the rehabilitation adherence of the athlete.

III. DESCRIPTION AND SOURCE OF RESEARCH PARTICIPANTS:

1. Participants will be 5 – 7 certified athletic trainers and 10 – 14 athletes at small colleges competing in the National Association of Intercollegiate Athletics (NAIA) organization.
2. Permission will first be obtained from the college's Institutional Review Board. If allowed, permission will be requested from the Athletics Director. The primary investigator is currently employed at one of the colleges as an athletic trainer, which should expedite the process.
3. The athletic trainers must be certified by the National Athletic Trainers' Association Board of Certification and currently employed by the college. The athletes will be full-time students and currently involved in a NAIA-recognized sport. The athletes will also have sustained an injury within the last academic year that required at least four weeks of rehabilitation in the athletic training room at the college. The ages and gender of all participants will vary. However, no athlete under the age of 18 will be allowed to participate. Due to the primary investigator's responsibilities as the athletic trainer for the men's and women's wrestling, softball, and cheerleading teams, these athletes will be excluded from this project. No participant will be paid for his/her involvement in this project.
4. Athletic trainers from each participating school will be approached to participate in this project. If s/he agrees, s/he will be asked to provide a list of injured athletes s/he has worked with over the past academic school year. These athletes must have sustained an injury within the last academic year requiring at least four weeks of rehabilitation in the athletic training room. Additionally, the athletic trainer will be asked to rank these

injured athletes based upon his/her perceptions of overall ability in the athletic training room. The athletic trainer will be asked to rank the injured athletes from high perceived ability to low perceived ability. The first and last athlete will be chosen from this list as possible candidates to interview. Each of these athletes will be identified and approached to determine their willingness to participate. Those athletes agreeing to participate will have appointments set up to conduct the interview. If the athlete refuses, the athlete next on the list will be approached and the process will be repeated. The athletic trainer will also be interviewed.

IV. METHODS AND PROCEDURES:

1. A pilot study will be conducted first utilizing the following procedures and slight modification may be necessary to the procedures and interview guide based upon the results. A form D will be filed if modifications are needed.
2. Recruitment of participants will start by recruiting athletic trainers to interview.
3. Each athletic trainer agreeing to participate will be asked to read and complete an informed consent form.
4. Each athletic trainer will then be asked to provide a list of athletes ranked on perceived ability. Athletic trainers will be asked to rank athletes from high perceived ability in the athletic training room to low perceived ability. These athletes must have sustained an injury requiring a minimum of four weeks of rehabilitation during the 2002-2003 academic year.
5. The researcher will select an athlete from the top and bottom of the provided list. Each athlete will be contacted and asked to participate in this study. A copy of the informed consent form will be provided for the athlete to read and sign if s/he is willing to participate.
6. Separate interview times will be set up for each athletic trainer and athlete participant agreeing to be interviewed.
7. Interviews will be conducted in a location outside the athletic training room. The room will be set up to allow an uninterrupted, private interview. The interview will be conducted using an interview guide. Interviews will be approximately 45 to 60 minutes long.
8. The researcher will audiotape all interviews.
9. Following the interview, the researcher will transcribe word for word the audiotaped interview. The participant will not be identified by his/her name on the transcripts of the interview. Instead a pseudonym will be used for each participant. Additionally, each dyad member will be identified by code in order to ensure proper pairing of the interviews for analysis (e.g., AT1, A1H, A1L: First athletic trainer interviewed, associated high perceived ability athlete, and associated low perceived ability athlete, etc). No one else will be allowed access to the audiotapes.

10. After the interview is transcribed, the audiotape will be erased. During the transcribing process the interview audiotapes will be securely locked in a filing cabinet in the researcher's office.
11. After the interview is transcribed, each participant will be given a copy of his/her interview transcript and asked to review it for accuracy and clarity. Each participant may add, delete, or clarify any statements as s/he wishes.
12. Following the return of the participants' reviewed and corrected transcript, the researcher and a research group will thoroughly read and analyze each transcript. An inductive-deductive analysis technique will be utilized to "discover patterns, themes, and categories" in the data, followed by an analysis of those patterns, themes, and categories according to the self-fulfilling prophecy theoretical framework (Patton, 2002, p. 453). Additionally, data from each dyad interview will be compared during analysis to determine any similarities or differences in responses. Each member of the research group will be asked to sign a confidentiality agreement.
13. Informed consent forms will be kept for at least three years in a locked file cabinet in Dr. Wendell Liemohn's office at The University of Tennessee. Transcripts of the interview may be kept indefinitely by the researcher.

V. SPECIFIC RISKS AND PROTECTION MEASURES:

There are no physical risks associated with participating in this study. However, there is a chance that some of the questions asked of the participants may evoke some emotions. The researcher will make every effort to be sensitive if this occurs and the participant will be encouraged to collect himself/herself, skip the question, or withdraw without penalty from this study. Referral to the campus counseling center will be done if indicated. Additionally, the identity of the interviewees will be kept confidential. Since members of a specific dyad are being interviewed, special care will be taken to keep each dyad member's interview responses confidential. Transcripts will be stored securely and will be made available only to the researchers involved in the study unless the participant specifically gives permission in writing to do otherwise. No reference will be made in oral or written reports which could link the participant to the study. If at anytime a participant wishes to withdraw, they will be released without penalty and all data belonging to them destroyed.

VI. BENEFITS:

The information from the participants' interview may aid in exploring the relationship between the athlete and athletic trainer. Although the participants may not see any immediate benefits, future athletes and athletic trainers may benefit from this knowledge, hopefully leading to a better and more proficient working relationship.

VII. METHODS FOR OBTAINING “INFORMED CONSENT” FROM PARTICIPANTS:

All participants recruited for this study will be at least 18 years of age and assumed to be mentally competent to give consent to participate. This assumption is based upon attendance at the college. After explaining the purpose and requirements of the study, each participant will be given an informed consent form. Each participant will be asked to read and sign it if s/he wishes to collaborate on this project. If a participant does not wish to be involved, s/he will be thanked and eliminated as a possible participant with no penalty for withdrawal. The participant's consent form will be ripped up or destroyed. If the participant agrees to collaborate, s/he will be given a copy of his/her signed consent form.

VIII. QUALIFICATIONS OF THE PRINCIPAL/CO-PRINCIPAL INVESTIGATOR(S):

The investigator has had experience in interviewing techniques provided by projects during the course of his studies. This includes interviewing a fellow faculty member to explore job characteristics and a previously injured athlete to explore his experience with his injuries. As an actively practicing certified athletic trainer, the investigator has had extensive experience taking detailed injury and rehabilitation histories. These histories are in the form of an interview between the athlete and the investigator, similar to the proposed methodology. Additionally, a course in qualitative research methods has been completed and the investigator's co-chair, Dr. Leslee Fisher, has extensive experience conducting qualitative research.

IX. FACILITIES AND EQUIPMENT TO BE USED IN THE RESEARCH:

The interviews will be conducted in a room outside of the athletic training room set up to allow an uninterrupted and private interview. An audio-recorder belonging to the investigator will be used to record the interview. Following the interview, the investigator will use a transcriber and personal computer to transcribe the interviews. Coding will follow.

X. RESPONSIBILITIES OF THE PRINCIPAL/CO-PRINCIPAL INVESTIGATOR(S):

By compliance with the policies established by the Institutional Review Board of The University of Tennessee, the principal investigator(s) subscribe to the principles stated in the "The Belmont Report" and standards of professional ethics in all research, development, and related activities involving human participants under the auspices of The University of Tennessee. The principal investigator(s) further agree:

1. Approval will be obtained from the Institutional Review Board prior to instituting any change in this research project.
2. Development of any unexpected risks will be immediately reported to the Research Compliance Services section.
3. An annual review and progress report (Form R) will be completed and submitted when requested by the Institutional Review Board.
4. Signed informed consent documents will be kept for the duration of the project and for at least three years thereafter at a location approved by the Institutional Review Board.

XI. SIGNATURES:

Principal Investigator: David K. Fitzhugh

Signature: _____

Date: _____

Advisor: Dr. Leslee Fisher, Co-Chair

Signature: _____

Date: _____

Advisor: Dr. Wendell Liemohn, Co-Chair

Signature: _____

Date: _____

XII. DEPARTMENT REVIEW AND APPROVAL:

The application described above has been reviewed by the IRB departmental review committee and has been approved. The DRC further recommends that this application be reviewed as:

☐ Expedited Review - - Category (s): _____

OR

☐ Full IRB Review

Chair, DRC: _____

Signature: _____

Date: _____

Department Head Dr. Ed Howley _____

Signature: _____

Date: _____

Protocol sent to Research Compliance Services for final approval on (Date) _____

Approved:
Research Compliance Services
Office of Research
404 Andy Holt Tower

Signature: _____

Date: _____

APPENDIX B: RESEARCH TEAM MEMBER CONFIDENTIALITY AGREEMENT

Research Team Member Confidentiality Agreement

I, _____ (print name), am taking part in the athletic trainer expectancy and its' affects on athlete rehabilitation adherence project.

As a member of this projects research team, I understand that I will be reading transcriptions of confidential interviews. The information in these transcriptions has been revealed by research participants who participated in this project on good faith that their interviews would remain strictly confidential. This includes gaining access to personal and private information about the participants. I understand that I have a responsibility to honor this confidentiality agreement.

I hereby agree not to share any information in these transcriptions with anyone except the primary researcher of this project, his doctoral co-chairs, or other members of this research team. Additionally, I will keep the identities, if known, of the participants strictly confidential. Any violation of this agreement would constitute a serious breach of ethical standards, and I pledge not to do so.

Research Team Member

Date

APPENDIX C: ATHLETIC TRAINER INFORMED CONSENT FORMS

Informed Consent Form Athletic Trainer Participant

You are invited to participate in a research study. The purpose of this study is to examine how athletic trainer expectations affect the rehabilitation adherence of the athlete. By signing this consent form you agree to be interviewed regarding your relationship with your athlete during the course of injury rehabilitation. All interviews will be audiotaped so that I don't miss anything you say or inadvertently change what you said somehow. Interviews should only last 45 to 60 minutes and will be conducted in a room outside the athletic training room.

Risks

There are no physical risks associated with participating in this study. However, there is a chance that some of the questions asked of you may evoke some emotions. I will make every effort to be sensitive if this occurs and you may at any time refuse to answer the question, take time to collect yourself, or withdraw without penalty from this study.

Benefits

The information from your interview may be instrumental in exploring the relationship between the athlete and athletic trainer. Although you will not see any immediate benefits, future athletes and athletic trainers may benefit from this knowledge, hopefully leading to a better and more proficient working relationship.

Confidentiality

Your identity will be kept confidential. After we talk, your interview will be assigned a number instead of your name. Transcripts of your interview will be stored securely and will be made available only to the researchers involved in the study unless you specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link you to the study. Informed consent forms will be kept for at least three years in a locked file cabinet at The University of Tennessee. Transcripts of your interview may be kept indefinitely by the researcher.

Contact Information

If you have questions at any time about this study or the procedures, you may contact me, David Fitzhugh, at the Rollins Center Athletic Training room (606) 539-4164 or dfitzhug@cumberlandcollege.edu. You may also contact the researcher's supervisor, Dr. Leslee Fisher at #336 HPER building at the University of Tennessee (865) 974-9973 or lfisher2@utk.edu. If you have questions about your rights as a participant, contact the Research Compliance Services section of the Office of Research at (865) 974-3466.

Participation

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed, your transcript will be returned to you or destroyed.

Consent

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's Signature: _____

Date: _____

Investigator's Signature: _____

Date: _____

APPENDIX D: ATHLETE INFORMED CONSENT FORMS

Informed Consent Form Athlete Participant

You are invited to participate in a research study. The purpose of this study is to examine how athletic trainer expectations affect the rehabilitation adherence of the athlete. By signing this consent form you agree to be interviewed regarding your relationship with your athletic trainer during the course of injury rehabilitation. All interviews will be audiotaped so that I don't miss anything you say or inadvertently change what you said somehow. Interviews should only last 45 to 60 minutes and will be conducted in a room outside the athletic training room.

Risks

There are no physical risks associated with participating in this study. However, there is a chance that some of the questions asked of you may evoke some emotions. I will make every effort to be sensitive if this occurs and you may at any time refuse to answer the question, take time to collect yourself, or withdraw without penalty from this study.

Benefits

The information from your interview may be instrumental in exploring the relationship between the athlete and athletic trainer. Although you will not see any immediate benefits, future athletes and athletic trainers may benefit from this knowledge, hopefully leading to a better and more proficient working relationship.

Confidentiality

Your identity will be kept confidential. After we talk, your interview will be assigned a number instead of your name. Transcripts of your interview will be stored securely and will be made available only to the researchers involved in the study unless you specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link you to the study. Informed consent forms will be kept for at least three years in a locked file cabinet at The University of Tennessee. Transcripts of your interview may be kept indefinitely by the researcher.

Contact Information

If you have questions at any time about this study or the procedures, you may contact me, David Fitzhugh, at the Rollins Center Athletic Training room (606) 539-4164 or dfitzhug@cumberlandcollege.edu. You may also contact the researcher's supervisor, Dr. Leslee Fisher at #336 HPER building at the University of Tennessee (865) 974-9973 or lfisher2@utk.edu. If you have questions about your rights as a participant, contact the Research Compliance Services section of the Office of Research at (865) 974-3466.

Participation

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed, your transcript will be returned to you or destroyed.

Consent

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's Signature: _____

Date: _____

Investigator's Signature: _____

Date: _____

APPENDIX E: ATHLETIC TRAINER DEMOGRAPHIC QUESTIONNAIRES

Athletic Trainer Demographic Questionnaire

Gender:

☐ Female
☐ Male

Age: _____

Race:

☐ Caucasian
☐ African-American
☐ Native-American
☐ Asian-American
☐ Hispanic
☐ Other: _____

Highest Degree Earned:

☐ Bachelor's
☐ Master's
☐ Doctorate

Current sport(s) assignments: _____

Number of years Certified as an Athletic Trainer _____

Number of years in current position _____

Number of month you have known this athlete _____

Number of weeks you have worked with this athlete in rehabilitation of this injury: _____

Estimate the number of hours per week this athlete rehabbed in the athletic training room:

Estimate (if known) the number of hours per week this athlete rehabbed outside of the athletic trainer room: _____

How would you rank your overall satisfaction with your current job?

☐ Very satisfied
☐ Moderately satisfied
☐ Satisfied
☐ Unsatisfied
☐ Moderately unsatisfied
☐ Very Unsatisfied

APPENDIX F: ATHLETE DEMOGRAPHIC QUESTIONNAIRES

Athlete Demographic Questionnaire

Gender:

_____ Female
 _____ Male

Age: _____

Race:

_____ Caucasian
 _____ African-American
 _____ Native-American
 _____ Asian-American
 _____ Hispanic
 _____ Other: _____

Academic Year:

_____ Freshman
 _____ Sophomore
 _____ Junior
 _____ Senior
 _____ 5th year

Year of Eligibility:

_____ 1
 _____ 2
 _____ 3
 _____ 4
 _____ 5

Are you a transfer student:

_____ Yes
 _____ No

Sport participating in when injured: _____

Number of months you have known your athletic trainer _____

Body part injured: Right / Left _____

Diagnosis of your injury (if known): _____

Is this a re-injury? _____ If so, when did you first injure yourself? _____

Number of weeks you have worked with your athletic trainer in rehabilitation of this injury: _____

Number of hours per week you rehabbed your injury in the athletic training room: _____

Number of hours per week you rehabbed your injury outside the athletic trainer room: _____

How would you rank your overall satisfaction with your current sport?

_____ Very satisfied
 _____ Moderately satisfied
 _____ Satisfied
 _____ Unsatisfied
 _____ Moderately unsatisfied
 _____ Very Unsatisfied

APPENDIX G: ATHLETIC TRAINER INTERVIEW GUIDE

Athletic Trainer Interview Guide

1. Describe each athlete's injury and how both athletes felt about it?
2. Describe your feelings toward each athlete both before and after he/she was injured?
3. How did your previous experience with each athlete affect your behavior towards him/her?
4. In your experience what characteristics or attributes do you feel an athlete must possess to be successful in rehabilitation? (Adopted from Solomon & Rhea, 2002)
5. Describe your relationship with each of your athletes both before and during rehabilitation?
6. What, if any, characteristics or attributes did each of your athletes demonstrate during the course of this injury?
7. What were your expectations of each athlete during the course of their injury? Did you communicate these expectations? If so, how?
8. Discuss which expectations each of your athletes met or did not achieve?
9. What strategies did you use to maintain each of your athletes' compliance with the rehabilitation program?
10. What psychological factors did you base your perceptions of each athletes' ability during the course of his/her rehabilitation? (Adopted from Solomon & Rhea, 2002)
11. How flexible were your perceptions of each of the athletes' abilities? (Adopted from Solomon & Rhea, 2002)
12. How did you determine whether your athletes were meeting his/her potential in rehabilitation? (Adopted from Solomon & Rhea, 2002)
13. Taking into account a successfully rehabilitated athlete, what attributes or characteristics distinguished each of your athletes from a less or more successful athlete? (Adopted from Solomon & Rhea, 2002)
14. In what ways does my relationship with you influence how you responded to the questions in this interview?
15. Is there anything else important you would like to say about your relationship with your athlete?

APPENDIX H: ATHLETE INTERVIEW GUIDE

Athlete Interview Guide

1. Describe how you got injured and how you felt about it?
2. Describe your feelings toward the athletic trainer both before and after you were injured?
3. How did your athletic trainer react to you initially after suffering from your injury?
4. What changes, if any, occurred in the athletic trainer's reaction to you after he/she evaluated your injury?
5. In your experience, what characteristics or attributes do you feel makes a good athletic trainer? (Adopted from Solomon & Rhea, 2002)
6. Describe your relationship with your athletic trainer both before and during rehabilitation?
7. What, if any, characteristics or attributes did your athletic trainer demonstrate during the course of this injury?
8. What did your athletic trainer expect of you during the course of this injury and how did you know?
9. Discuss which expectations you either met or did not achieve and explain why?
10. What influence did these expectations have regarding your compliance or adherence to your rehabilitation program?
11. What were your own expectations for your recovery?
12. In what ways does my relationship with you influence how you responded to the questions in this interview?
13. Is there anything else important you would like to say about your relationship with your athletic trainer?

VITA

David K. Fitzhugh was born in Deming, New Mexico. He attended and graduated from Shiprock High School in New Mexico. He then went to New Mexico State University in Las Cruces earning a Bachelor's degree in Athletic Training in 1994. From there, he attended Fort Hays State University in Kansas obtaining a Masters of Science degree in Health, Physical Education, and Recreation with an emphasis in Sports Administration in 1997. David completed requirements for a Ph.D. in Exercise Science at the University of Tennessee at Knoxville in April 2004.

