RELATIONAL AND BEHAVIORAL OUTCOMES OF EXERCISERS WHEN WORKING WITH A PERSONAL TRAINER: A TRIPARTITE EFFICACY EXAMINATION

By

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PUBLIC ABSTRACT

RELATIONAL AND BEHAVIORAL OUTCOMES OF EXERCISERS WHEN WORKING WITH A PERSONAL TRAINER: A TRIPARTITE EFFICACY EXAMINATION

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This two study dissertation examined how people who work with fitness professionals develop confidence beliefs. Recent research has noted that there might be unique sources of social confidence upon which people develop their own individual confidence beliefs. One of these beliefs focuses on the confidence someone has in another person whom they work with. In this dissertation, the specific belief is how confident a client is that their personal trainer can benefit their health and fitness. The other belief this dissertation focuses on is the confidence that the client believes their personal trainer holds about the client. The thoughts an individual has about what others might think about oneself are ubiquitous in daily life, but have not been examined in context of confidence beliefs of clients working with personal trainers. These two beliefs are hypothesized to influence an individual's confidence level about themselves, as well as other outcomes such as relationship satisfaction, the effort that an individual will put forth in relationship related activities, and how active an individual is. Also, there are other hypothesized variables that could influence these social confidence beliefs that have not be fully uncovered.

Study 1 examined the social confidence beliefs with self-confidence to see if the social confidence belief systems were related to feelings of closeness, commitment, and complementarity in a client working with a personal trainer. Also, trust was measured and hypothesized to influence the social confidence beliefs. Adults working with a personal trainer were administered a one-time survey. The results support that the social confidence beliefs did influence self-confidence. The social confidence beliefs were strongly related to relational trust

and the social confidence beliefs were tied to perceptions of closeness, commitment, and complementarity. This study provides some support that adults who perceived positive social confidence beliefs will lead to greater confidence and more positive relationships with their trainers.

Study 2 examined whether social confidence beliefs influenced the amount of physical activity and the effort that clients put forth in personal training sessions. A survey was administered at two-times to examine the social confidence beliefs first, and the physical activity behaviors and session effort at a second time. The results indicated that the social confidence beliefs did have some ties to the amount of effort that clients put forth in sessions with personal trainers, but the social confidence beliefs did not impact the amount of physical activity that the clients engaged in during the previous week. These two studies provide some support for the hypothesized relationships between social confidence beliefs and relationship outcomes as well as some behavioral outcomes.

ABSTRACT

RELATIONAL AND BEHAVIORAL OUTCOMES OF EXERCISERS WHEN WORKING WITH A PERSONAL TRAINER: A TRIPARTITE EFFICACY EXAMINATION

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This dissertation examined how the tripartite efficacy model might be applied in personal trainer-client relationships across two studies to understand how confidence beliefs are developed in close relationships. The tripartite efficacy model supposes that relation-inferred self-efficacy (RISE) and other-efficacy provide additional information in the development of self-efficacy beliefs in social situations. RISE and other efficacy are hypothesized to be influential for outcomes for the development of self-efficacy beliefs and also other relational and behavioral outcomes. There is evidence in some physical activity contexts that these relational efficacy beliefs are vital in the development of self-efficacy beliefs, as well as some relational and behavioral outcomes. However, there is a lack of research examining the tripartite efficacy framework with ties to specific relational and behavioral outcomes that would be of interest in personal trainer-client relationships.

Study 1 examined whether tripartite efficacy model would be supported in the personal training-client relationship and whether the tripartite efficacy constructs have connections to relational outcomes. Also, Study 1 examined perceptions of trust as a common antecedent of both RISE and other-efficacy Adult clients who were actively working with a personal trainer were recruited to take a one -time survey. The results support that both RISE and other-efficacy were significant predictors of self-efficacy beliefs. The core tripartite model was supported with self-efficacy beliefs being explained by RISE and other-efficacy. Trust positively predicted RISE

and other efficacy. Other-efficacy and RISE each had ties to specific components of the personal trainer-client relationship.

Study 2 examined the core tripartite efficacy model again, but with behavioral outcomes in the model. Community adults were asked to take a survey at two times, 1 week apart. Consistent with previous research and Study 1, RISE and other-efficacy positively predicted self-efficacy perceptions. Other-efficacy and self-efficacy had a significant positive direct effect on effort in sessions, but neither other-efficacy, self-efficacy, or RISE predicted total physical activity. The two studies together provide support for the tripartite efficacy model aiding in the development of self-efficacy beliefs in adults working with a personal trainer.

This work is dedicated to Kathryn and Jack. Your love and support has guided me along this journey.

This work is also dedicated to my parents, Renee and David. You have provided me with constant support throughout my education.

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CHAPTER I
INTRODUCTION

Nature of the Problem

Regular physical activity is important for all individuals, but adults in the United States are at particular risk for developing chronic disease that could be mitigated by regular physical activity. However, the prevalence of individuals who are adequately active to the level that will bring about health benefits is very low (Troiano et al., 2008). In fact, research measuring physical activity using accelerometry data from the National Health and Nutritional Examination Survey indicates that among adults in the United States, less than 5% of adults to obtain 30 minutes per day of physical activity (Troiano et al., 2008). It appears that physical activity decreases drastically throughout the lifespan, from childhood to adulthood (Troiano et al., 2008). This trend is particularly troublesome when considering the already low rates of physical activity in childhood and adolescence. Therefore, researchers have aimed to understand the psychosocial variables that might influence physical activity behaviors in largely sedentary populations.

A commonly cited, robust psychosocial correlate that predicts physical activity behaviors is self-efficacy. Self-efficacy is defined as, "Beliefs in one's capabilities to organize and execute courses of action required to produce given attainments" (Bandura, 1997, p. 3). Self-efficacy perceptions have been widely documented to fundamentally shape human functioning in a variety of physical activity contexts (Feltz, Short, & Sullivan, 2008). Self-efficacy beliefs have a strong influence on the choice of activities, as well as the how much an individual is willing to persist when faced with obstacles and barriers to participation in the activity in many contexts including exercise (McAuley & Jacobson, 1991). However, developing robust efficacy perceptions that will guide an individual towards being physically active to achieve health outcomes is a sizeable task. Therefore, sedentary adults might be likely to turn to a proxy agent,

such as a personal trainer, to boost their self-efficacy perceptions in a physical domain to increase their physical activity (Ede, 2016). With decreasing physical education throughout childhood and adolescence, many people might not have the knowledge of how to be physically active in a manner that will benefit their health. Therefore, individuals might turn to personal trainers who are oftentimes employed at gyms and fitness centers around the United States for assistance in becoming more physically active.

Personal trainers are proxy agents who could help individuals boost their self-efficacy perceptions about being physically active. Personal trainers develop and instruct fitness programming to individuals to help them achieve their fitness goals in a safe and productive manner (ACSM, 2016). In the United States alone, it is estimated that there are 279,000 personal training jobs in a variety of settings and the number of jobs is expected to increase at faster than average pace over the next 10 years (US Department of Labor Statistics, 2016). This figure represents a large number of kinesiology professionals who have contact with a multiplicity of clients who need some assistance with reaching their fitness goals. Considering the large reach that personal trainers have in the fitness world, they are a largely understudied population of professionals who play an important role in the development of physical activity behaviors. Previously literature has noted the important role that personal trainers play in interdependent relationship in the physical domain (Ede, 2016), but more recent studies have outlined specific relational efficacy beliefs that might explain the development of self-efficacy beliefs in these fitness relationships (Jackson, Bray, Beauchamp, & Howle, 2015).

Tripartite Efficacy Model

Lent and Lopez (2002) delineated a tripartite efficacy model that attempts to integrate self-efficacy perceptions within a network of relational efficacy beliefs. With the tripartite

efficacy model, two relational efficacy constructs are hypothesized to influence self-efficacy beliefs; other-efficacy and relation-inferred self-efficacy (RISE). Other-efficacy is an individual's belief about another individual's ability to perform behaviors of interest (Lent & Lopez, 2002). For instance, if Chris' attainment of desired outcomes depends on the expertise of another person, Chris is likely to seek out someone who she believes will be able to assist in providing the necessary help. Within a personal training domain, it would be the confidence that Chris holds about the ability of a particular personal trainer to help her reach her fitness goals. Other-efficacy is a similar construct to proxy efficacy. Other efficacy holds as a more general term that could be used for non-proxy agents (i.e. teammates or group members), as well as proxy agents (Jackson et al.,2015). However, a proxy agent is an individual who someone turns to for assistance in achieving a certain outcome (Bandura, 1997). For instance, if Chris believes she cannot achieve a valued fitness outcome on her own, such as a decrease in body fat percentage, she might turn to a personal trainer to help plan a long-term approach to meeting this goal through fitness programming.

Turning over the control of the type and frequency of exercises to a personal trainer is an accurate representation of how proxy agency functions in an exercise domain. Jackson and colleagues (2015) noted that proxy efficacy is a specific type of other-efficacy that occurs when the relational target functions as a proxy. To stay consistent with the terminology, other-efficacy will be used in the reminder of the dissertation instead of proxy efficacy. Other efficacy is hypothesized to lead directly to a greater commitment to goals, more reliable engagement in the relationship, and better behavioral outcomes such as increased physical activity (Lent & Lopez, 2002). However, other efficacy beliefs could lead to negative self-fulfilling prophecies that could be damaging to long term agentic function of people in the fitness domains. For example, a

personal trainer, Jane, who holds certain beliefs about Chris' physical performance during training sessions, confirms her beliefs about Chris' ability through her communication and actions. Continuing with this example, if trainer Jane does not believe that client Chris has the capacity to improve her fitness level, Jane might not put forward adequate effort in exercise programming, leading to sub-optimal workouts for Chris that become less beneficial to her fitness. If Chris does not improve over time, then the Jane might believe that her assessment of Chris' potential was correct, leading to diminished outcomes for Chris. Self-fulfilling prophecies have the potential to diminish self-efficacy perceptions. The potential positive or negative effect of other-efficacy beliefs on both relational and behavioral outcomes in physical activity setting is of interest in this dissertation.

Relation-inferred self-efficacy (RISE) is a meta-perception that engenders an individual's (e.g., client Chris') belief regarding how a significant other (e.g., trainer Jane) views her/his own individual efficacy (Lent & Lopez, 2002). RISE is a perception that has been defined as a "how my partner sees me" belief (Lent & Lopez, 2002). RISE beliefs have been proposed to provide a vital relationship-specific source of efficacy information that has direct effects on not only self-efficacy, but behavioral and relational outcomes. RISE is hypothesized to be crucial when people are developing new skills or using existing skills in novel contexts because in these situations people are likely to rely on relational efficacy beliefs reformulate their own self-efficacy (Lent & Lopez, 2002). Therefore, RISE could be important to understanding how self-efficacy, along with other behavioral and relational outcomes, develop when working with a personal trainer. If they did have high self-efficacy beliefs to be adequately physical active, they would likely engage in physical activity behaviors on their own, without the assistance of a personal trainer. However, RISE beliefs have yet to be uncovered in personal trainer-client relationships. RISE is

purported to also influence perceptions of social support, which might have a strong impact on continued engagement in physical activity.

Previous research has noted the importance of these interpersonal efficacy beliefs in coach-athlete relationships, teammate relationships, and physical education settings (Jackson, Grove, & Beauchamp, 2010; Jackson, Beauchamp, & Knapp, 2007; Jackson, Whipp, Chua, Dimmock, & Hagger, 2013). Overall, previous studies have noted that the data largely support the relational efficacy hypotheses outlined by Lent and Lopez (2002). Although there has been a flurry of recent work attempting to uncover the potential roles that these tripartite efficacy constructs play in sport and exercise, limited attention has been given to adults in physical activity contexts, who might be at high risk for not reaching recommended physical activity levels. Research examining the role of the relational efficacy beliefs in adults who are engaged in a relationship with a personal trainer is lacking. Understanding the mechanics of the tripartite efficacy model is important outside the previous scope of sport and exercise psychology because it provides avenues for health professionals who act as proxy agents (i.e., athletic trainers or physical therapists) to intervene in the development of and bolster perceptions of personal agency of their clients.

From a theoretical perspective, the adaptive outcomes in which both other-efficacy and RISE play a significant role, as proposed by Lent and Lopez (2002), are important to understand. Most tests of the tripartite model have focused on the influence that other-efficacy and RISE have on self-efficacy perceptions. Jackson, Myers, Taylor, and Beauchamp (2012) examined the direct effects of the relational efficacy beliefs of physical education students on course enjoyment, course effort, and course achievement, and largely found support for the model in the undergraduate physical education. However, RISE (i.e., students' beliefs regarding how the

course instructor views their own individual efficacy) did not have a significant direct effect on effort or enjoyment. Other studies have denoted that the majority of the core tripartite efficacy model is supported, but the hypothesized direct effects do not always appear significant (Jackson, Whipp, & Beauchamp, 2013). In fact, the tripartite efficacy model has demonstrated some support for relational efficacy beliefs (particularly other-efficacy) in promoting physical activity in high school students, but RISE does not always appear to have a direct effect on valued outcomes (Jackson et al., 2013). However, the previous work has used large physical education classes at the high school and university level when modeling physical activity as an outcome. Small group settings, where the group interdependence is much closer, are likely to produce stronger effects with regards to the relational efficacy beliefs having direct effects to positive outcomes. Also, to-date, researchers have not studied the effects of relational efficacy beliefs on a main health outcome of interest in adults, physical activity behaviors.

Although personal trainers are a largely understudied population, a recent dissertation by Ede (2016) examined proxy efficacy beliefs with individuals who work with a personal trainer. Within her model, the importance of both task and self-regulation proxy efficacy was noted in connection to the relationship commitment, trust, and perceptions of control. Although Ede (2016) outlined some components of how proxy reliance might occur in personal trainer-client relationships, other variables might help explain some of the development of self-efficacy perceptions in these relationships. In fact, self-efficacy was not measured in that dissertation. There is yet to be a test of the tripartite efficacy model that includes RISE and other-efficacy as both predictors of self-efficacy perceptions in a personal trainer-client relationship. Examining RISE, other-efficacy, and self-efficacy perceptions in the same model would help with the

understanding of the psychosocial variables that might lead to the development of self-efficacy in relationships.

Also, to date, few researchers have examined at potential predictors of both RISE and other-efficacy beliefs. In this dissertation, I will examine the role that different types of interpersonal communication variables (including trust and immediacy) play in predicting RISE and other-efficacy. Lent and Lopez (2002) suggest that within the tripartite model, communication is filtered through the lens of both RISE and other-efficacy to influence self-efficacy. Therefore, it is important to examine elements of communication that could have direct effects of the development of relational efficacy beliefs.

Statement of the Problem

Although there have been many advancements in understanding the tripartite efficacy model, the strength of its key determinants on self-efficacy beliefs to be physically active have yet to be tested in adult populations. Some investigators have noted the explanatory value of the model in physical education, but that research was conducted with samples of high school and college students (Jackson, Myers et al., 2012). This dissertation aims to extend this model of developing efficacy beliefs in interpersonal relationships to adults who are working with a personal trainer. Moving this research into the personal trainer-client relationship in adult populations will provide important information about the usefulness of relational efficacy beliefs to bolster self-efficacy perceptions, relationship perceptions, and physical activity behaviors.

The personal trainer-client relationship is unique compared to the previous research that has examined the tripartite efficacy constructs. The personal trainer-client relationship is a one-on-one relationship likely to produce stronger effects when examining the relational variables compared to large classes or teams, where ties between group members are likely weaker. Also,

this unique social arrangement provides a fruitful avenue for expanding antecedents and outcomes in the tripartite model due to the one-on-one nature of the relationship. It is reasonable to expect that the tripartite model would prove to be even stronger in predicting relational efficacy beliefs when the relationship is more intimate.

Adults who employ the assistance of a personal trainer likely begin the relationship because they do not believe they can achieve their physical fitness goals on their own (i.e., low self-efficacy). They may lack self-regulatory efficacy that they can keep up their training without a trainer, and/or they may lack self-efficacy that they can perform the training exercises correctly and safely. Therefore, understanding the relational factors within the tripartite efficacy model that could lead to an enhanced sense of self-efficacy is important for both practitioners and future research.

Purpose of the Study

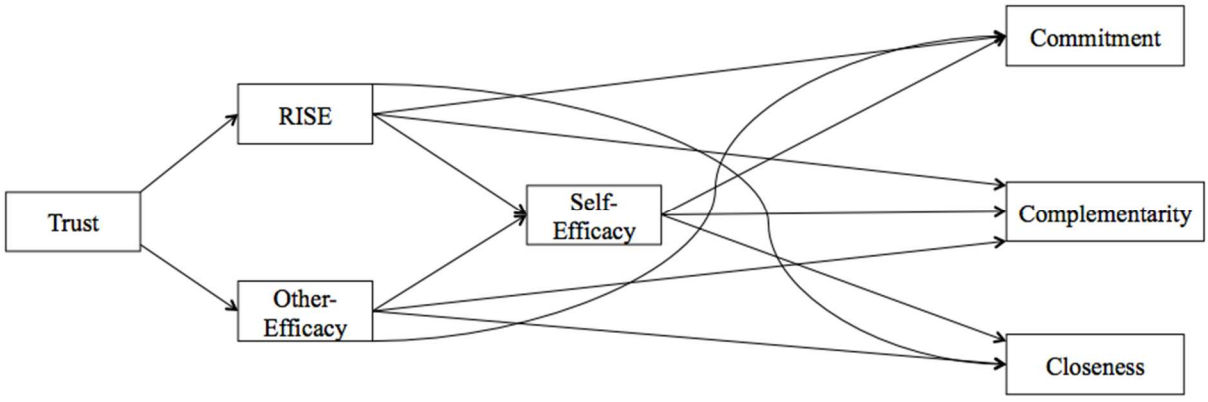
The purpose of this dissertation is to examine the direct and indirect effects of the tripartite efficacy model with clients who work with personal trainers on important relational and behavioral outcomes. The dissertation includes two studies, described in two separate chapters: (a) Study 1 examines relational outcomes in a personal trainer-client relationship and (b) Study 2 examines potential influences of tripartite efficacy constructs in enhancing physical activity behaviors. The structural model to be tested in Study 1 is presented in Figure 1 and the structural model to be tested in Study 2 is presented in Figure 2. Based on previous research, the following hypotheses will be tested in Study 1 and 2:

Hypotheses

Study 1.

1. Perceptions of trust in personal trainer-client relationships will have positive direct effects on both RISE and other-efficacy.
2. RISE and other-efficacy will have positive direct effects on relational variables (commitment, closeness, and complementarity) and self-efficacy for clients working with personal trainers.
3. Self-efficacy will have positive direct effects on the relational outcomes of the model.
4. There will be significant indirect effects from RISE and other-efficacy, through self-efficacy, to the relational outcomes of the model.

Figure 1.1 Hypothesized Relationship Between Trust, Tripartite Efficacy Constructs, and Relational Outcome Variables.



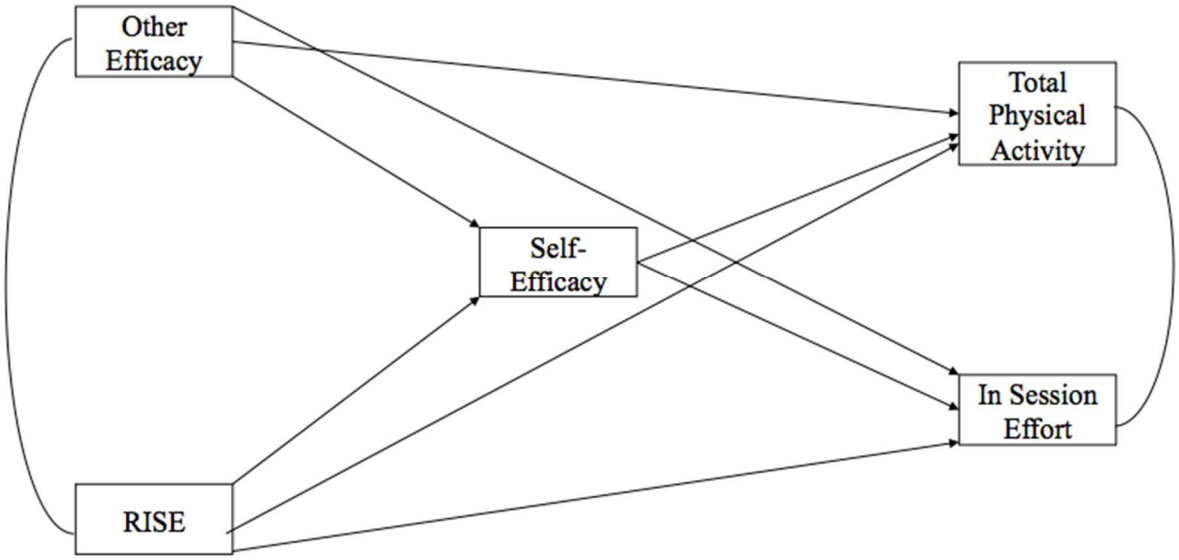
Study 2.

1. RISE and other-efficacy beliefs will have positive direct effects on self-efficacy, as well as, self-reported physical activity and in-session effort.
2. Self-efficacy will have a positive direct effect on the effort put forth in personal training sessions and self-reported physical activity.

3. RISE and other-efficacy beliefs will also have a positive indirect effect on self-reported physical activity and in-session effort through self-efficacy beliefs.

The model to be tested is below in Figure 2.

Figure 1.2. Hypothesized Relationships Between Tripartite Efficacy Variables and Behavioral Outcomes.



Delimitations

Due to the hypotheses presented in this dissertation, I will only be examining clients who are already engaged in a relationship with a personal trainer. This dissertation will not examine the personal trainer-client relationships from their inception. Also, this dissertation is limited to people who work with a personal trainer in a one-on-one relationship. Personal trainers often work with clients in small group settings or sometimes in large classes. Delimiting this dissertation to individuals who work with a personal trainer in a one-on-one relationship will allow for a clearer examination of the nature of the tripartite efficacy model in these specific types of relationships.

Definitions

Closeness. The emotional connection or affective ties between personal trainers and clients (Jowett, 2007). In this dissertation, closeness is measured by a modified version of the Coach-Athlete Relationship Questionnaire.

Client. An individual who hires a personal trainer to assist in programming physical activity.

Commitment. Client's intention of maintaining their relationship with the personal trainer.

Complementary. A measure of the cooperative and affiliative nature of the relationship between the personal trainer and the client, as perceived by the client (Jowett, 2007).

Effort. A self-reported measure capturing the intensity of exertion a client puts forth during training sessions.

Other-efficacy. Other-efficacy is an individual's confidence in another's ability to act on their behalf in goal striving contexts. Proxy efficacy is a specific form of other-efficacy.

Personal trainer. A fitness professional who works with clients by engaging them in physical activity to help them reach health and fitness goals.

Physical Activity. Any bodily movement that uses energy. In this dissertation it will be the amount of self-reported moderate-to-vigorous activity that an individual engages in during a week period.

Proxy agent. A third party who is employed to act on another's behalf. Examples of proxy agents include physical education teachers, coaches, athletic trainers, and personal trainers.

Proxy efficacy. One's confidence in another person's abilities to aid in the development of skills and/or self-regulatory behaviors. For example, clients will have proxy efficacy beliefs regarding how confident they are in their personal trainer's ability to help them develop the skills to be physically active or engage in self-regulated physical activity.

Relation-inferred self-efficacy or RISE. RISE is an individual's estimation of another's confidence in one's ability (i.e. person A's estimation of person B's confidence in person A).

Self-efficacy. An individual belief about what one can accomplish. Bandura's (1997, p. 3) definition is as follows, "Beliefs in one's capabilities to organize and execute courses of action required to produce given attainments."

Tripartite efficacy model. A three-component conceptualization of efficacy beliefs in relational contexts that includes relation-inferred self-efficacy and other-efficacy being antecedents to individual self-efficacy perceptions.

Trust. A communication perception of assurance that occurs in relationships that might inform both RISE and other-efficacy beliefs.

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CHAPTER II
REVIEW OF LITERATURE

Introduction

A majority of American's are not physically active enough to bring about beneficial changes in health status and reduced risk for disease (Troiano et al., 2008). Although there are a myriad of potential reasons why an individual might not be physically active, it is crucial to understand psychosocial correlates that are hypothesized to exert influence on physical activity behaviors. Self-efficacy beliefs are linked consistently with increased physical activity levels (Biddle, Hagger, Chatzisarantis, & Lippke, 2007). However, individuals with low self-efficacy beliefs might not extend out of their comfort zone to begin an exercise program. Someone with low self-efficacy might turn to a personal trainer for assistance to develop a higher sense of self-efficacy. Lent and Lopez (2002) delineated a theoretical model of the development of the self-efficacy beliefs in close relationships, the tripartite efficacy model. The tripartite efficacy model has important implications for both the development of self-efficacy beliefs, along with relational and behavioral outcomes of interest.

There are four components of this chapter. First is to briefly examine the literature supporting self-efficacy as an important construct in physical activity constructs. The second goal is to examine the theoretical underpinnings of the tripartite efficacy model. The third goal of chapter is to examine the literature that tests the tripartite efficacy model in physical activity contexts. Lastly, the chapter will examine the small amount of literature that has examined the personal trainer-client relationship.

Self-Efficacy

Self-efficacy is defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p.3). In lay terms, it is

a specific ‘can do’ belief about a task. Bandura (1997) specifically outlined four antecedents that influences and individuals’ self-efficacy beliefs. Specifically, mastery experiences, verbal persuasion, vicarious influence, and physiological and affective states each influence an individual’s self-efficacy belief.

Mastery experiences occur when an individual functions effectively in a specific domain and successfully achieves a desired standard of performance (Bandura, 1997). This success provides an individual with information that, when cognitively processed, provides the most salient form of efficacy information. Successful attempts at tasks generally increase individuals’ efficacy beliefs, specific to that task (McAuley, 1985). Verbal persuasion is another source of efficacy information that can provide valuable information to an individual through direct statements (Bandura, 1997). One way to harness the effects of verbal persuasion in a personal training setting would be to have a personal trainer use persuasion techniques to motivate a client to engage in a challenging task.

Vicarious influence occurs when an individual observes someone performing a skill or task well (Bandura, 1997). Vicarious influence provides individuals with a model of how to best perform a skill. Lastly, physiological and affective states are the final hypothesized component of self-efficacy beliefs. Physiological and affective states are somatic indicators that, depending on their perception and interpretation, could be viewed as beneficial or harmful to efficacy beliefs (Bandura, 1997).

Self-efficacy beliefs are nested within the broader concept of social cognitive theory. Social cognitive theory proposes that human behavior can best be explained by triadic reciprocal causation, in which cognitions, behaviors, and the environment all influence each other (Bandura, 1986). The influence from each of the variables is not necessarily equal, but each

component has influence in how humans function. Social cognitive theory also notes that individuals are proactive agents in triadic reciprocal causation model. Humans have the ability to influence their cognitions, environment, and behavior (Bandura, 1986). Maddox (1995) outlined that within social cognitive theory, self-efficacy represents part of the cognitive aspect within the triadic reciprocal process. Because self-efficacy beliefs are a crucial part of the agentic process, they have a strong influence on behaviors, activities, affect, and choice of environment for activities (Maddox, 1995). From a theoretical standpoint, it appears clear that self-efficacy has a strong relationship with engaging in physical activity behaviors. The next paragraph examines the findings from the literature regarding the influence of self-efficacy beliefs in exercise settings.

Laboratory tests of the relationship between self-efficacy and exercise behaviors have largely found that self-efficacy has a consistent, positive influence on individuals engaging in exercise bouts (McAuley, 1992, McAuley, 1993, McAuley & Courneya, 1992, McAuley, Courneya, Rudolph, & Cox, 1994). There has also been evidence from large scale community studies that shows self-efficacy is a significant predictor of exercise behavior in adults, even when controlling for other variables hypothesized to influence social cognitive theory (Sallis Hovell, Hofstetter, & Barrington, 1992). However, oftentimes physical activity experiences are not done in solitude. There are many different types of social exercise scenarios including exercise friends, social group exercise classes, and personal training-client relationships. In these types of scenarios, the relationships formed can play an important role in either a positive or negative exercise experience. If research is focused solely on the development of self-efficacy, there is the potential to overlook important relational constructs that might play a vital role in the development of self-efficacy beliefs.

Tripartite Efficacy Model

The tripartite efficacy framework outlines the importance of relational efficacy beliefs in interpersonal relationships. In their original paper outlining the tripartite efficacy model, Lent and Lopez (2002, p. 257) promoted the idea that "self-efficacy researchers have largely focused on personal agency exercised individually." However, there are many examples where a complex social interaction, such as a personal trainer-client relationship or coach-athlete relationship, might be best understood by unpacking efficacy beliefs that are developed specifically from the relationship. Still nested within the social cognitive theory, the tripartite efficacy model assumes that the environment and social agents have a large pervasive impact on the development of self-efficacy perceptions. In a relational context, both other-efficacy and RISE beliefs impact an individual's self-efficacy perceptions.

Other-efficacy is conceptualized as an individual's belief about a significant other's ability to perform the necessary behavior for the dyad's functioning (Lent & Lopez, 2002). Proxy efficacy is a more specific other efficacy belief that occurs in relationships where one individual gives some control to another (i.e. a proxy agent, Jackson et al., 2015). Lent and Lopez (2002) hypothesized that other efficacy beliefs have specific functions in relationships, outside of directly influencing self-efficacy beliefs. Other-efficacy is likely to have an impact in the choice of activities someone is willing to engage in and have a direct effect on the amount of effort an individual is likely to put forth in tasks with their relationship partner. Other-efficacy is also likely to influence the amount to which an individual relies on the relationship partner for group functioning and how an individual views feedback from the partner (Lent & Lopez, 2002). Examining the previous literature, scholars have outlined potential antecedents of other-efficacy beliefs that include positive experiences with the relational partner, observing the partner

interacting in a positive manner with others, comments from third parties that endorse the partner's ability, and favorable comparisons with other individuals that they have interacted with (Jackson et al., 2015). Previous qualitative work in sport dyads has supported the previously listed antecedents (Jackson, Knapp, & Beauchamp, 2008).

RISE beliefs are distinct relational efficacy beliefs that examine "an individual's beliefs regarding how a significant other views the individual's efficacy at particular tasks" (Lent & Lopez, 2002, p. 268). To clearly illustrate RISE beliefs, I set up an example with Jane who is a personal trainer and Chris who is Jane's client. RISE beliefs would be Chris' estimation of how Jane views Chris' competence. RISE beliefs do require a complex assessment of a large amount of information about the relationship, but RISE beliefs come from interpersonal cues that are then interpreted by the receiver. Therefore, if Jane gives Chris a difficult task in a training session, Chris could perceive a high RISE from Jane because she has set a high bar for achievement in the training session. Lent and Lopez (2002) contend that RISE acts as an interpretive cognitive filter through which feedback from significant others is interpreted. RISE is hypothesized to be particularly important when developing new skills, when using existing skills in a new context, or when reevaluating ability levels (Lent & Lopez, 2002, Jackson et al., 2015). The aforementioned circumstances are likely to promote feelings of unease and uncomfortable feelings, leading people to rely on verbal and behavioral cues from significant others for feedback on their competencies. Due to the potential effects that RISE beliefs might have in enhancing self-efficacy perceptions, it is logical for the beliefs to be studied in close, interpersonal relationships with a focus on health related behaviors.

RISE and other-efficacy are hypothesized to have self-efficacy supportive functions, along with other, indirect effects on other outcomes of interest. In other words, when people have

favorable RISE and other-efficacy beliefs, they are likely to have higher ratings of perceived efficacy. Lent and Lopez (2002) also posit that RISE and other-efficacy will have a direct effect on a host of behavioral and relational outcomes. Specifically, they denoted that people likely put forth more effort and have positive emotional responses when they are working with someone who they believe has high RISE and other-efficacy perceptions of the other person in the relationship. Lent and Lopez (2002) outlined that both RISE and other-efficacy work separately from each other, but both contribute to relationships lasting over time and stronger relational ties in close interpersonal relationships.

After the initial publication of the tripartite model by Lent and Lopez (2002), researchers who examined interpersonal relationships in a variety of domains examined the model. Researchers in fields like client-therapist relationships, teacher-student relationships, and coach-athlete relationships began to find support for the main tenets of the relational efficacy model. The next section examines the previous findings of the tripartite efficacy model in the sport and exercise psychology literature.

Tripartite Efficacy Model in Sport and Physical Education

The tripartite model provides a strong theoretical explanation for how relational efficacy beliefs might affect self-efficacy along with a host of other behavioral and relational outcomes. The first test of the tripartite efficacy model in sport examined the relational efficacy beliefs within sport dyads (Jackson, Beauchamp, & Knapp, 2007). Using the actor-partner independence models, Jackson and colleagues examined intact junior doubles tennis pairs to examine how relational efficacy beliefs effect both the actor and their partner. The findings noted that the relational efficacy beliefs influenced individual's perception of satisfaction and commitment in the relationship, but there were also strong actor effects for both other-efficacy and RISE beliefs.

These findings indicate that having a strong sense of efficacy about one's partner can lead to a higher sense of one's individual self-efficacy belief. This study provided some initial evidence that other-efficacy and RISE beliefs about a partner can bolster self-efficacy perceptions in a sporting domain (Jackson et al., 2007). To further tease apart some of the theoretical underpinnings, as well as the antecedents and outcomes of the relational efficacy model, Jackson, Knapp, and Beauchamp (2008) conducted a qualitative examination of elite athlete dyads focused on the relational efficacy model. The researchers examined sources of individual efficacy, which included beliefs about oneself, partner beliefs, beliefs surrounding the relationship, and external factors. Each of the above listed factors had a strong influence on individual self-efficacy beliefs in elite level athletes. Further analyzing the reported sources of efficacy, the athletes reported themes regarding their partner that are consistent with the theoretical conception of the tripartite efficacy model. Athletes reported that other-efficacy and RISE beliefs were critical for athletic success (Jackson et al., 2008).

To further this line of inquiry, Jackson and Beauchamp (2010) examined relational efficacy beliefs in coach-athlete dyads using the actor-partner independence model. Using youth tennis players and their coaches, Jackson and Beauchamp examined relational efficacy beliefs (as well as self-efficacy beliefs) at the midpoint of a season, and then followed up at the end of the season with measures of commitment, effort, and satisfaction. For both the coaches and the athletes, RISE and other-efficacy had strong, positive relationships with self-efficacy. Also, consistent to previous findings, there was support that relational efficacy perceptions had strong, positive relationship with commitment, satisfaction, and effort. Interestingly, in the coach-athlete relationships studied, the other dyad member's role moderated the effect of relational efficacy variables for the partner in the relationship. This finding demonstrates that there is a strong

partner effect in these close relationships, and it appears to be explained well using the tripartite efficacy model. These findings were also largely in support of the findings from the actor-partner relationship findings in athlete dyads (Jackson et al., 2008). To further this line of inquiry, Jackson, Grove, and Beauchamp (2010), used actor-partner independence models to test whether the role that an individual has in the coach-athlete relationship has a moderating effect on the relational efficacy perceptions, as well as the perceptions of the coach-athlete relationship. This was hypothesized due to the power differentials between young athletes (i.e., subordinate) and sport coaches (i.e., superordinate). In both the coach and athlete sample, the relational efficacy perceptions significantly predicted the relational outcomes in the coach-athlete relationship (Jackson et al., 2010). Due to the power differential between youth athletes and their coaches, Jackson and colleagues noted that interdependence theory might help explain the specific interactions noted in the sample.

Interdependence theory outlines that when there is no power differential between members of a relationship, there is a mutual dependence that is shared between the group members (Kelley & Thibaut, 1978). However, when there is a discrepancy in power between the members of the relationship, there might be non-mutual dependence. Non-mutual dependence is likely to occur in a relationship like a coach-athlete relationship because the coach possesses more resources than the athlete (Jackson et al., 2010). In a relationship with non-mutual dependence, there is likely to be an uneven flow of relational efficacy influence. It is hypothesized that athletes' outcomes are highly dependent on their perceptions of the coaches' ability (i.e., other-efficacy). In fact, athletes' other-efficacy beliefs of their coaches were strongly related to perceptions of the coach-athlete relationship. Noteworthy to my dissertation, there is a potential power differential between personal trainers and their clients. However, the flow of the

power differential could be different depending on the type of interdependence examined. For instance, the personal trainer occupies the superordinate role during the training sessions. However, it is important to consider that it is in the personal trainer's best interest to continue to be paid by the client for future sessions. Therefore, in terms of scheduling and the financial side of the relationship, the client holds a superordinate position in the relationship.

More recently, two studies have outlined the effects of relational efficacy beliefs in youth sport. Saville and Bray (2016) noted that RISE-relevant coaching behaviors had a positive relationship with RISE and self-efficacy beliefs in youth sport. Specifically, RISE account for 42% of the possible indirect effects between coaching behaviors and self-efficacy beliefs (Saville & Bray, 2016). The aforementioned finding provides support that RISE provides a lens through which feedback from significant others, supporting the proposed theoretical role of RISE beliefs (Lent & Lopez, 2002). Using qualitative techniques, other research noted that a host of different coaching behaviors can lead to enhanced or diminished RISE perceptions in the youth sport coach-athlete relationship (Saville, Bray, Martin Ginis, Cairney, Marinoff-Shupe, & Pettit, 2014).

The findings mentioned above largely support the tripartite efficacy model in sport relationships, however, there were very few tests in a context focused specifically on physical activity outcomes (i.e. engaging in physical activity for health benefits). To examine the tripartite efficacy model in a physical activity domain, Jackson, Myers, and colleagues (2012) tested the relational efficacy model with undergraduate students in physical activity classes. Students in physical activity courses were asked about their RISE and other-efficacy beliefs about their physical education teacher. Consistent with the relational efficacy model proposed by Lent & Lopez (2002), both RISE and other-efficacy beliefs were modeled to be predictors of self-

efficacy, as well as enjoyment, in-class effort, and achievement in the course. Jackson, Myers, and colleagues (2012) did take into consideration the temporal order of the variables measured, with the relational efficacy beliefs measured initially, and then self-efficacy and the other outcome variables measured at two subsequent time points. The results supported the main tenants of the relational efficacy model proposed with RISE and other-efficacy accounting for 69% of the variance in self-efficacy scores. Other-efficacy had significant direct effects on enjoyment, effort, and achievement (Jackson et al., 2012). However, RISE beliefs did not have significant direct effects on the outcome variables of interest (i.e., enjoyment, effort, and achievement). RISE beliefs did have the strongest relationship with self-efficacy. This finding is contrary to what is proposed by Lent and Lopez (2002) but the authors noted that RISE seems to have a powerful effect on self-efficacy and perhaps RISE might not align with other adaptive outcomes in the model due to missed moderation effects (Jackson, et al. 2012). In conclusion, Jackson, Myers, and colleagues (2012) noted that future work should be conducted with other-efficacy and RISE beliefs in other contexts in physical activity.

Continuing this line of inquiry, Jackson, Whipp, Chua, Dimmock, and Hagger (2013) aimed to test the tripartite efficacy model in a high school physical education setting using Singaporean students. Also of interests in this study is the potential within and cross-domain relationship that might occur in the motivational processes and leisure time activity. In other words, the researchers aimed to examine if relational efficacy beliefs held in physical education classes might influence not just their in-class self-efficacy, but their motivation and leisure time physical activity (Jackson et al., 2013). Consistent with previous findings, this study showed support for both other-efficacy and RISE being predictors of self-efficacy beliefs. The authors noted that other-efficacy was a significant predictor of autonomous motivation in physical

education, but RISE beliefs did not have a significant direct effect on autonomous motivation in physical education. RISE not having a significant direct effect on outcomes of interest in the tripartite efficacy model is similar to previous research in undergraduate physical education (Jackson, Myers et al., 2012). Self-efficacy beliefs did have a strong relationship with autonomous motivation during physical education classes (Jackson et al., 2013).

Importantly, it was noted that the relational efficacy model had strong ties (both indirect and direct effects) to leisure time motivation to participate in physical activity and leisure time physical activity (Jackson et al., 2013). Both RISE and other-efficacy had small but significant direct effects on leisure time physical activity, controlling for baseline leisure time physical activity. However, it is important to note that leisure time physical activity is measured by asking participants to retrospectively recount their physical activity behavior, whereas self-efficacy is a prospective question about future behaviors. In this study, baseline physical activity might be a misplaced because it was measured at the same time as the tripartite efficacy model. However, baseline physical activity is only used as a predictor of autonomous motivation for leisure time physical activity and leisure time physical activity. Therefore the prospective efficacy beliefs are not directly in conflict with retrospective physical activity, but this does provide an important consideration when modeling relational (and self-) efficacy beliefs. In the hypothesized model, Jackson and colleagues (2013) found support for relatedness support behaviors of the teacher having strong, significant direct effects on both RISE and other –efficacy. This research provides some initial evidence supporting the transcontextual effects of the relational efficacy model, as well as some important findings regarding the antecedents of the relational efficacy model.

Jackson, Whipp, and Beauchamp (2013) were largely interested in how task self-efficacy in physical education might relate to exercise self-regulatory efficacy and average weekly

exercise in high school students. The main premise of this study was that students might become more efficacious in physical education, which might in turn enhance their self-regulatory efficacy beliefs and their average weekly exercise. In this model, Jackson et al. (2013) measured the tripartite model in full at time one, exercise self-regulatory efficacy at time two, and average weekly exercise at time three. A baseline exercise score at time one was also computed. Inconsistent with self-efficacy theory the baseline exercise score at time one was correlated with RISE, other-efficacy and self-efficacy. However, the main outcome of average weekly exercise was measured for three weeks after the measurement of the relational efficacy variables, consistent with the how self-efficacy theory should be modeled. Again, RISE did not have significant direct effects on exercise self-regulatory efficacy or average weekly exercise, but did demonstrate a strong effect on task self-efficacy (Jackson, et al., 2013). Other-efficacy for teachers demonstrated a significant direct effect on average weekly exercise, but not self-regulatory efficacy. These findings provide some mixed support for the tenets of the tripartite efficacy model, especially when considering the more distal outcomes tests. The core of the tripartite efficacy model was again consistent with the theoretical predictions (Lent & Lopez, 2002).

To further this line of inquiry, Sparks, Lonsdale, Dimmock, and Jackson (2017) created an interpersonal intervention for enhancing relatedness-support in physical education classrooms. After physical educators were trained in enhancing relatedness-support (or being in a control arm), the authors obtained baseline measures of self-determination variables, as well as relational efficacy variables of interest of the students in physical education. After 4 months, follow-up measures of the same variables were obtained. Importantly, other-efficacy, teacher-focused RISE, and peer-focused RISE all increased from baseline to follow-up in the students in the

intervention arm of the study (Sparks et al., 2017). Other-efficacy and peer-focused RISE both had significant condition by time effects in this sample of adolescent students. This study provides some evidence that supports the notion of creating an environment that is inclusive and caring can have positive effects on relational efficacy variables (Sparks et al., 2017).

Overall, there appears to be support for the tripartite efficacy model for explaining the development of self-efficacy perceptions in interpersonal relationships. Previous findings from elite sport (Jackson et al., 2010), youth sport (Saville & Bray, 2016), and various physical education domains (Jackson et al., 2012; Jackson et al., 2013) lend support to the tripartite model as an effectual explanation of the development of self-efficacy beliefs. The next section of the literature review examines the small amount of psychosocial research examining personal trainers.

Personal Trainer-Client Relationship

Personal trainers are a large population of fitness professionals who work with clients in a variety of settings to help reach health and fitness goals. Although there are close to 300,000 jobs available in the United States, very little attention has been given to them and the role they play in developing long-term, sustainable health for their clients. Some of the literature regarding the benefits of working with a trainer denotes that personal trainers might assist in helping individual's exercise personal agency effectively the physical domain. One study showed that participants moved up a stage in the transtheoretical model of behavior change after 10 weeks of working with a personal trainer (McClaran, 2003). Another explanation for personal trainers' effectiveness is that personal trainers likely hold people accountable for their effort in their training sessions. Ratamess, Faigenbaum, Hoffman, and Kang (2008) examined how people chose the amount of weight that they used in exercise tasks with the assistance of a personal

trainer. Women in the study chose heavier weights whenever they exercised with a personal trainer compared to when they exercised alone (Ratamess et al., 2008). These findings provide initial evidence about the effectiveness of working with a personal trainer.

Priebe, Flora, Ferguson, and Anderson (2012) examined the effectiveness of written messages are in bolstering proxy efficacy beliefs about an exercise instructor. The written messages used in the study were intended to enhance proxy efficacy beliefs of novice exercisers. With no differences in exercise instruction, the group that received proxy efficacy enhancing messages had significantly higher ratings of proxy efficacy compared to the control group. However, both groups had higher efficacy beliefs after the second time coming to the exercise class (Priebe et al., 2012). This finding supports that participants could have *inferred* that their instructor was competent and would be able effectively teach, communicate, and motivate the participants throughout the workout.

More recently, Ede (2016) conducted a dissertation to examine various functions of proxy efficacy in relation to the personal trainer-client relationship. In particular, the dissertation aimed to examine how proxy efficacy beliefs could lead a reliance on a personal trainer. Sampling clients in an active personal-trainer client relationship, proxy efficacy beliefs about a personal trainer had a positive relationship with both commitment and trust. However, proxy efficacy beliefs about a personal trainer had a strong relationship with reliance on a trainer in exercise settings (Ede, 2016). This over-reliance on a personal trainer could lead to detrimental outcomes if the personal trainer-client relationship terminates. An additional analysis of the data implied that if a personal trainer helped foster a sense of individual control when working with the client, it is unlikely that an over-reliance on the trainer would occur (Ede, 2016).

Previous research examining personal trainers has examined the role that they hold as proxy agents. While this is true, more attention should be spent on other psychosocial variables that might hold a key role in understanding agentic functioning in exercise settings. Observational research has consistently demonstrated that RISE and other-efficacy appear to have an influential role in the development of personal agency. Due to the variety of reasons that an individual would approach a personal trainer, it makes sense to better understand the relational efficacy information that appears to inform self-efficacy perceptions, along with important behavioral and relational outcomes. Also, the personal trainer-client relationship is traditionally a one-on-one relationship. Perhaps, the effects of other-efficacy and RISE will be enhanced due to the highly interpersonal nature of the relationship.

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CHAPTER III
STUDY 1: A TRIPARTITE EFFICACY EXAMINATION OF THE PERSONAL TRAINER-CLIENT RELATIONSHIP

Preface

This study was financially supported, in part, with a Summer Research Renewable Fellowship that I was awarded in 2016. The study was conducted under the guidance of Deborah L. Feltz. I conceived of the study design and developed the questionnaires. Data collection concluded in November 2017.

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Abstract

Purpose: The main aim for this study is to examine how the tripartite efficacy framework might help build personal agency in individuals who work with a personal trainer. Also key to this study is a focus on the potential relational outcomes and the association between these outcomes and the tripartite efficacy model.

Method: Adults working with a personal trainer completed a one-time survey measuring relation-inferred self-efficacy (RISE), other-efficacy, and self-efficacy while participating in personal training. The coach-athlete relationship questionnaire was modified for a health context and used to determine the commitment, closeness, and perceptions of complementarity in a relationship from the perception of the client.

Results: The results largely support the tripartite efficacy model with both RISE and other-efficacy predicting self-efficacy beliefs. RISE had significant direct effects to each of the

relational outcomes, whereas other-efficacy only had significant direct effects to perceptions of complementarity.

Conclusion: Other-efficacy and RISE seem to be essential in the development of self-efficacy beliefs with clients who work with personal trainers. These social efficacy perceptions can provide clients the tools to develop their own agency during challenging physical tasks. RISE beliefs from a client lead to more commitment to the relationship, higher perceptions of complementarity, and more closeness in a relationship. Developing positive RISE perceptions could lead to beneficial relationship outcomes.

Introduction

Regular physical activity is important for all individuals, but adults in the United States are at particular risk for developing chronic disease that could be mitigated by regular physical activity. However, the prevalence of individuals who are adequately active to the level that will bring about health benefits is still very low (Troiano et al., 2008). This decrease in activity is of particular interest to researchers who aim to understand physical activity motivation from a psychosocial perspective. Therefore, researchers have aimed to understand the psychosocial variables that might influence physical activity behaviors in largely sedentary populations.

A commonly cited, robust psychosocial correlate that predicts physical activity behaviors is self-efficacy. Self-efficacy is a "beliefs in one's capabilities to organize and execute courses of action required to produce given attainments" (Bandura, 1997, p. 3). Self-efficacy perceptions have been widely documented to fundamentally shape human functioning in a variety of physical activity contexts (Feltz, Short, & Sullivan, 2008). Self-efficacy beliefs have a strong influence on the choice of activities, as well as the how much an individual is willing to persist when faced with obstacles and barriers to participation in the activity in many contexts including exercise

(McAuley & Jacobson, 1991). However, developing robust efficacy perceptions that will guide an individual towards being physically active to achieve health outcomes is a sizeable task. Therefore, sedentary adults might be likely to turn to a proxy agent to boost their self-efficacy perceptions in a physical domain to increase their physical activity (Ede, 2016). With decreasing physical education programs throughout childhood and adolescence, many people might not have the knowledge of how to be physically active in a manner that will benefit their health. Therefore, individuals might turn to personal trainers who are oftentimes employed at gyms and fitness centers for assistance in becoming more physically active.

Personal trainers are proxy agents who could help individuals boost their self-efficacy perceptions about being physically active. Personal trainers develop and instruct fitness programming to individuals to help people achieve their fitness goals in a safe and productive manner (ACSM, 2013). Considering the large reach that personal trainers have in the fitness world, they are a largely understudied population of professionals who play an important role in the development of physical activity behaviors for many people. Previous literature has noted the important role that personal trainers play in interdependent relationship in the physical domain (Ede, 2016), but research has not yet examined specific relational efficacy beliefs that might explain the development of self-efficacy beliefs in these fitness relationships (Jackson, Bray, Beauchamp & Howle, 2015)

Lent and Lopez (2002) delineated a tripartite efficacy model that attempts to integrate self-efficacy perceptions within a network of relational efficacy beliefs. With the tripartite efficacy model, two relational efficacy constructs are hypothesized to influence self-efficacy beliefs; other-efficacy and relation-inferred self-efficacy (RISE). Other-efficacy is an individual's belief about another individual's ability to perform behaviors of interest. (Lent &

Lopez, 2002). Jackson and colleagues (2015) noted that proxy efficacy is a specific type of other-efficacy that occurs when the relational target functions as a proxy. To stay consistent with the terminology, other-efficacy will be used in the reminder of the study. Other efficacy is hypothesized to lead directly to a greater commitment to goals, more reliable engagement in the relationship, and better behavioral outcomes such as physical activity (Lent & Lopez, 2002). Relation-inferred self-efficacy (RISE) is a meta-perception that engenders an individual's belief regarding how a significant other views her/his own individual efficacy (Lent & Lopez, 2002). RISE is a perception that has been defined as a "how my partner sees me" belief (Lent & Lopez, 2002). RISE beliefs have been proposed to provide a vital relationship-specific source of efficacy information that has direct effects on not only self-efficacy, but also behavioral and relational outcomes. In the development of the tripartite efficacy model, RISE is hypothesized to be crucial when people are developing new skills or using existing skills in novel contexts because in novel situations people are likely to rely on relational efficacy beliefs to either bolster or reformulate their own self-efficacy (Lent & Lopez, 2002). Therefore, RISE could be important when considering people who work with a personal trainer to begin a fitness regimen that they are likely not very efficacious about when they begin training.

Previous research has noted the importance of these interpersonal efficacy beliefs in coach-athlete relationships, teammate relationships, and physical education settings (Jackson & Beauchamp, 2010; Jackson, Knapp, & Beauchamp, 2008; Jackson, Myers, Taylor, & Beauchamp, 2012). Research examining the coach-athlete relationship largely demonstrated support for the relational efficacy model proposed by Lent and Lopez (2002). Jackson, Grove, and Beauchamp (2010) examined how relational efficacy beliefs might influence perceptions of complementarity, closeness, and commitment to the relationship. For a host of the relational

outcomes tested, having confidence in the other dyad member (either the coach or the athlete) was more strongly related to outcomes for athletes, compared to coaches (Jackson et al., 2010). The authors noted that this could be due to the non-mutual dependency that exists when a power differential occurs in a teaching or coaching relationship (Jackson et al., 2010). Although personal trainers are not directly coaches, there is a non-mutual dependence that occurs in the relationship. Due to the nature of the relationship, the personal trainer likely has more power during the exercise sessions. However, the relationship power differential is different when considering that clients have the power in terms of the quantity of sessions they schedule. It is theorized that if the client has high confidence in the personal trainer, the client is likely to perceive that the relationship is adaptive and helpful (Jowett, 2007).

Recent research has highlighted the importance of relational efficacy beliefs in high school physical education. Students in physical education classes reported greater confidence in their ability whenever they perceived that their instructor was efficacious (i.e. high other-efficacy, Jackson, Myers et al., 2012). Student's self-efficacy ratings were strongly influenced by how they believed they were perceived by their instructor (i.e. RISE). In the physical education context, RISE and other-efficacy accounted for 69% of the total variance explained in self-efficacy (Jackson, Myers et al., 2012) The findings from Jackson, Myers, and colleagues (2012) also outlined that other-efficacy had significant direct effects on class enjoyment, effort in the class, as well as class achievement. Interestingly, RISE did not have a significant direct effect on class enjoyment, effort, or class achievement, contrary to the theoretical predictions (Lent & Lopez, 2002). However, that could be due to the nature of the physical education student teacher relationship. RISE is theoretically especially instrumental when an individual is learning new skills (Lent & Lopez, 2002). Perhaps the students had a perception of distance between

themselves and the instructor, or the skills being learned were not novel enough for RISE beliefs to be salient to the outcomes of the model. Consistently in the literature, it appears that the tripartite efficacy model is valuable in explaining specific relational cognitions that might not only affect self-efficacy, but also other important behavior and affective outcomes.

Other research has largely supported the claims of the tripartite model. Empirical evidence has supported the relational efficacy model when examining physical activity contexts. RISE beliefs have been tested to examine if different targets of RISE beliefs (i.e. RISE for both teachers and classmates in physical education) and have found that larger group focused meta-perceptions (peer RISE beliefs) seem to have relationship with outcomes for affective responses in physical education (Jackson, Gucciardi, Lonsdale, Whipp, & Dimmock, 2014). Also, in physical education contexts, other-efficacy and RISE have significant direct effects of leisure-time physical activity of adolescents (Jackson, Whipp, Chua, Dimmock, & Hagger, 2013). However, these effects on significant outcome variables of physical activity interpersonal relationships have largely been ignored in adult populations.

For an enhanced view of the tripartite efficacy model, it is important to expand the antecedents of both RISE and other-efficacy. Previous work has noted that when athletes perceived their coach as having a coaching style that was compatible with their preferred coaching style, the athletes had stronger other-efficacy perceptions of their coach (Jackson, Knapp, & Beauchamp, 2009). Additionally, when students in physical education perceived a relatedness-supportive environment from their teacher, they had enhanced RISE and other efficacy beliefs (Jackson et al., 2013). In the current study, specific forms of communication will be modeled as antecedents to RISE and other-efficacy. Specifically parsing out the types of

feedback will lead to an enhanced sense of how both RISE and other-efficacy develop consistent with the theorized model of relational efficacy beliefs.

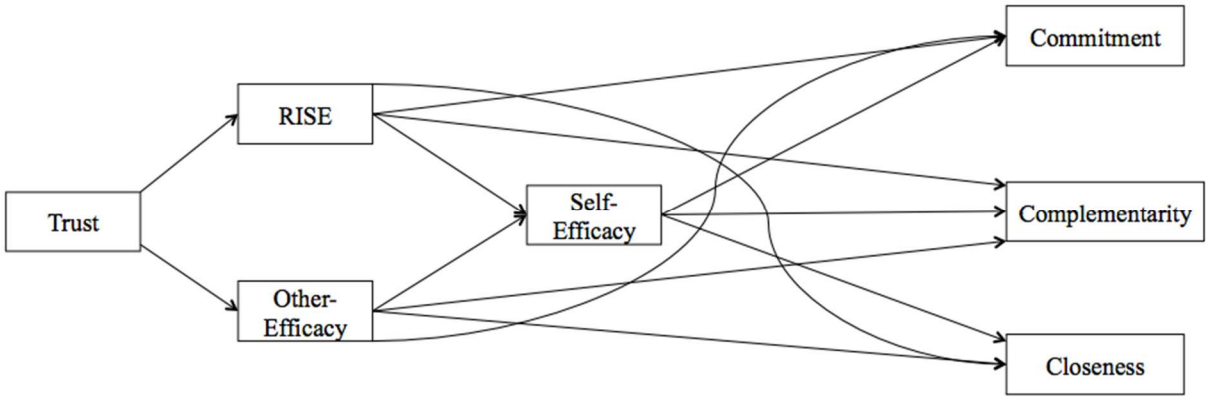
The personal trainer-client relationship is unique compared to previous research that has examined tripartite efficacy constructs. The personal trainer-client relationship is a one-on-one relationship that is likely to produce stronger effects when examining the relational variables compared to large classes or teams, where the ties between members of the group are likely weaker. Also, this unique social arrangement provides a fruitful avenue for expanding the antecedents and outcomes in the tripartite model due to the one-on-one nature of the relationship. It is reasonable to expect that the tripartite model would prove to be even stronger in predicting relational efficacy beliefs when the relationship is more intimate. In this study, adults who work with personal trainers are going to be the population of interest. The tripartite efficacy literature examining health outcomes has largely focused on student populations at both the secondary education or higher education level. Students in these situations might be required to take part in the classes, leading to differences in perceptions of tripartite efficacy constructs and relational outcomes. The personal training relationship presents unique differences because the relationship is not only voluntary for the client, but the client is paying the personal trainer for their services. Therefore, from a theoretical and substantive perspective, it is worthwhile to study this relationship with respect to the tripartite efficacy model.

Adults who employ the assistance of a personal trainer likely begin the relationship because they do not believe they can achieve their physical fitness goals on their own (i.e., low self-efficacy). They may lack self-regulatory efficacy that they can keep up their training without a trainer, and/or they may lack task self-efficacy that they can perform the training exercises correctly and safely. Therefore, understanding the relational factors within the tripartite efficacy

model that could lead to an enhanced sense of self-efficacy is important for both practitioners and future research. Furthermore, understanding the key relational outcomes for personal trainer-client relationships will likely lead to increased commitment to the relationship and enhance the longevity of the relationship. The purpose of this study is to examine the tripartite efficacy model in a from the clients' perspective about the relationship they have with a personal trainer. The hypothesized model to be tested can be seen in Figure 3.1.:

1. Perceptions of trust in personal trainer-client relationships will have positive direct effects on both RISE and other-efficacy.
2. RISE and other-efficacy will have positive direct effects on relational variables (commitment, closeness, and complementarity) and self-efficacy for clients working with personal trainers.
3. Self-efficacy will have positive direct effects on the relational outcomes of the model.
4. There will be significant indirect effects from RISE and other-efficacy, through self-efficacy, to the relational outcomes of the model.

Figure 3.1 Hypothesized Relationships Between Tripartite Efficacy Constructs and Relational Outcome Variables.



Method

Participants.

Prior to conducting Study 1, IRB approval (see Appendix A) was obtained to survey clients who were in an active personal trainer-client relationship. The participants in Study 1 were recruited from online advertisement postings on gym websites and social media websites for gyms. Gyms were specifically targeted for potential inclusion if they indicated that there was a strong presence of personal trainers in the gym. Participants had to be at least 18 years old to participate in the research and must have been actively working with a personal trainer. The final sample size for Study 1 was 273. Participants were on average 46.5 years old (SD = 9.17) and predominantly identified themselves as White (95.24%), while Black or African-American (2.56%) and Asian (2.20%) were the only other racial groups represented in the sample. The sample was predominately female (66.42%)

Procedures.

Gym owners and gym managers from across the United States were contacted with some brief information about the survey and were asked if they would be willing to distribute an electronic survey on the web-based platform Qualtrics to their clients. If the gym owners or managers agreed, then they were provided with a link to the questionnaire with a broad description of the research and were asked to post the link for the clients to participate in the study. Missing data represented only 1.1% of the response cases and the missing data were treated as missing at random. Responses to the questionnaires were kept anonymous from the research team.

Measures.

Demographic information. Basic demographic information was collected that included age, gender, and marital status. Also, information was recorded regarding the amount of sessions per week that the client participated in under the guidance of the personal trainer, as well as, how many times per week the client exercised on his/her own. The demographic questionnaire is contained in Appendix B.

RISE. RISE beliefs were measured using eight questions developed from previous work examining tripartite efficacy beliefs within secondary school physical education and have been modified to be appropriate for personal trainer-client relationships (Jackson et al., 2013). The questions were focused on the client's inference regarding the personal trainer's confidence in their ability to perform tasks. The instructions stated,

> "These statements focus on you again, but this time we would like you to estimate how confident your personal trainer is in your capability in training sessions. We're not focusing on how confident you are; we're focusing on whether you think your personal trainer is confident in you. So, how confident do you think your personal trainer is in your capability at this moment in time to…"

Some example items include, "Be physically fit enough to always perform well in your training sessions" and "Learn all of the exercises that you are taught, even the most difficult ones." The participants rated each response on a scale from 1 (no confidence at all) to 5 (complete confidence). The eight item scale displayed an acceptable level of internal consistency (Cronbach's $\alpha = .81$). Although Bandura (2006) recommends efficacy measures be rated on an 11-point scale, research in sport and exercise psychology has demonstrated that a condensed 5-point scale may be appropriate for efficacy measures (Jackson, Whipp, Chua, Pengelley, &

Beauchamp, 2012;Myers, Feltz, & Wolfe, 2008). Each questionnaire used for this project was tested in a focus group comprised of personal trainers to ensure that it captured the scope of the personal trainer relationship with the client. See Appendix C for the RISE questionnaire.

Other-efficacy. The 12 other-efficacy questions were developed from previous research examining proxy efficacy beliefs in personal trainer-client dyads (Ede, 2016). The other-efficacy measures represent a measure of confidence in a personal trainer's ability to put them through a challenging workout, adapt the training program to fit individual needs, and to keep them safe during training sessions. The instructions state,

> "This time, the statements focus on your personal trainer. Again, there are no right or wrong answers to any of these questions. This time, we would like you to rate your confidence in your personal trainer's capability. Your personal trainer will not see your answers. So please honestly rate your confidence in your trainer's ability at this moment in time to…"

Some sample items for the other-efficacy questionnaire include, "Plan exercise sessions tailored toward your goals" and "Give feedback and correct your technique while you are performing the exercises." The participants rated their confidence in their personal trainer for each item on a scale from 1 (no confidence at all) to 5 (complete confidence). The other-efficacy scale displayed an acceptable level of internal consistency (Cronbach's $\alpha = .78$) See Appendix D for the other-efficacy questionnaire.

Self-efficacy. Self-efficacy was measured with eight questions that focused on the participant's confidence in themselves during their training sessions. The questions were modified to fit the personal trainer-client context from previous work in examining self-efficacy beliefs in the tripartite efficacy model with physical education students (Jackson et al., 2013).

The items participants responded to for self-efficacy were the same as the RISE questions, but a different stem because participants were answering about their own self-belief. The instructions stated, "We would like you to rate your confidence in your training sessions. So, rate your confidence at this moment in time that you can…" Some example items for the self-efficacy scale include, "Carry out your trainer's instructions at all times" and "Improve your capability to complete every exercise in your training session." The item responses were scaled from 1 (no confidence at all) to 5 (complete confidence). The self-efficacy scale displayed good internal consistency (Cronbach's $\alpha = .90$). See Appendix E for the full questionnaire.

Interpersonal Communication. Interpersonal communication themes were measured using the Relational Communication Scale (Burgoon & Hale, 1987). One specific subscale from the Relational Communication Scale was used for this study: receptivity/trust (5 questions). Example questions examining receptivity/trust include, "He/she is willing to listen to me" and "He/she is sincere." The responses choices are on a Likert-type scale from 1 (strongly disagree) to 7 (strongly agree). The trust subscale displayed an acceptable level of internal consistency (Cronbach's $\alpha = .84$). See Appendix F for the full questionnaire.

Relational Outcomes. To examine the relational outcomes of the personal trainer-client relationship, a modified version of the coach-athlete relationship questionnaire (CART-Q), was used and administered to clients to measure feelings of commitment, closeness, and complementarity (Jowett & Ntoumanis, 2003). Modifications to the questionnaire included changing coach to personal trainer, as well as, changing sport outcomes to health outcomes. The scale was conceptualized as examining the emotional (closeness), cognitive (commitment), and behavioral (complementarity) components of the interpersonal relationship between a coach and athlete (and in the case of this dissertation, of a personal trainer and client). There is cross-

cultural evidence that supports the psychometric properties of the CART-Q in a variety of cultures and contexts (Yang & Jowett, 2012). Closeness was measured with questions like "I like my personal trainer" and I respect my personal trainer." Commitment was measured with questions such as, "I am committed to my personal trainer" and "I feel that my future health is promising with my personal trainer." Complementarity was measured with questions like, "When I am trained by my personal trainer, I feel responsive to his/her efforts" and "When I am trained by my personal trainer, I am ready to do my best." Each of the subscales displayed a high level of internal consistency in this sample (Closeness Cronbach's $\alpha = .96$, Commitment Cronbach's $\alpha = .82$, Complementarity Cronbach's $\alpha = .95$)

Data Analysis

The data were analyzed using observed variable path analysis with Mplus 7.4 (Muthen & Muthen, 2011) consistent with the model presented in Figure 1. Although treating each of the variables as observed involves making an assumption that each of the variables is a perfect representation of the construct that is being measured, the tripartite efficacy constructs and other variables of interest in this study have been outlined thoroughly in previous literature and the measures have worked well in a variety of contexts. Therefore, the measurement component of this model is not of interest for this study. For each of the questionnaires used, the sum of the scores of the questionnaires was used as the observed score for the path analysis. The direct and indirect effects are reported. To test the hypothesized relationships, traditional fit indices were examined to see if the model specified fit the observed covariance matrix including χ^2 goodness of fit test, root mean square error of approximation (RMSEA), comparative fit index (CFI), and the Tucker-Lewis index (TLI). A non-significant x^2 indicates the model has an acceptable fit to the data. However, the chi-square statistic is sensitive to sample size (i.e., samples larger than

200 are more likely indicate a rejection of the model) and susceptible to deviations from multivariate normality and model complexity (Hu & Bentler, 1998; La Du & Tanaka, 1989). RMSEA values of .05 or less indicate a good fit and values less than .08 represent an acceptable amount of error and thus an adequate fit (MacCallum, Browne, & Sugawara, 1996). The cutoff values of CFI, and TLI that are larger than .90 are considered good fitting models (Hu & Bentler, 1999).

Results

Descriptive statistics, correlations, and fit indices

The correlations and descriptive statistics for the observed variables are reported below in Table 3.1. The fit indices indicated that the model had an acceptable fit to the observed covariance matrix, $\chi^2(4) = 13.97$, p = .01, CFI = .98, TLI = .96, and RMSEA = .06.

Table 3.1. Descriptive Statistics and Correlations.

Variable	M	SD	Trust	OE	RISE	SE	Comm	Comp	Close
Trust	6.52	.53	--						
OE	4.50	.49	.55	--					
RISE	4.35	.58	.52	.58	--				
SE	4.36	.48	.48	.61	.71	--			
Comm	6.33	.82	.47	.37	.53	.45	--		
Comp	6.54	.50	.52	.62	.50	.49	.47	--	
Close	6.51	.81	.39	.30	.34	.31	.56	.55	--

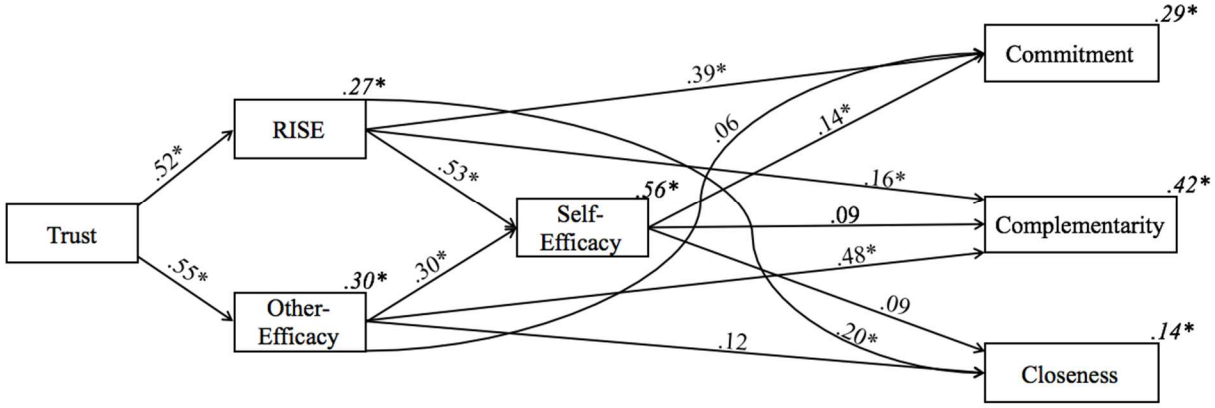
Note. All of the correlations were significant at the $p < .01$ level. OE = Other-efficacy. RISE = Relation inferred self-efficacy. SE = Self-efficacy. Comm = Relational Commitment. Comp = Complementarity. Close = Relational Closeness.

Direct effects.

The observed variable path analysis uncovered direct effects between many of the variables modeled in this study. The results of the path analysis can be seen in Figure 3.2. Examining the core of the tripartite efficacy model, it appears largely supported in this study. Both RISE and other-efficacy were significant predictors of self-efficacy beliefs, explaining 56%

of the variance in self-efficacy. Trust was a significant predictor of both RISE and other efficacy. Interestingly, RISE was a significant predictor of commitment, complementarity, and closeness but other-efficacy was only a significant predictor of complementarity. Self-efficacy was a significant predictor of commitment to the relationship, but not complementarity and closeness. The tripartite model, with the addition of trust as an antecedent to the tripartite model, explained 29% of the variance of relational commitment ($R^2 = .29$), 42% of the variance in complementarity ($R^2 = .42$), and 14% of the variance in perceptions of closeness ($R^2 = .14$).

Figure 3.2. Observed Variable Path Model with Standardized Estimates of the Path Coefficients.



Note. All endogenous variables that did not have a path between variables were allowed to covary but were not included in the above model for visual ease of reading. R^2 estimates of the observed endogenous variables are in italics above the variables in the path model. An "*" indicates $p < .05$.

Table 3.2. Specific Indirect Effects from the Tripartite Efficacy Constructs to Relational Outcomes.

Specific Indirect	Estimate	SE	*p*
OE-SE-Comm	.04	.02	.04
RISE-SE-Comm	.07	.04	.06
OE-SE-Comp	.03	.03	.28
RISE-SE-Comp	.05	.04	.30
OE-SE-Close	.03	.02	.27
Rise-SE-Close	.05	.04	.26

Note. OE = Other-efficacy. RISE = Relation inferred self-efficacy. SE = Self-efficacy. Comm = Relational Commitment. Comp = Complementarity. Close = Relational Closeness.

Indirect effects.

Table 3.2 outlines each of the specific indirect effects from the tripartite efficacy constructs through self-efficacy onto the relational outcomes. The only specific indirect effect that was significant was other-efficacy through self-efficacy to commitment. The other indirect effects tested in this model were not significant.

Discussion

The overarching purpose of this study was to examine the tripartite efficacy model in a unique social context using an adult population working with personal trainers. In this study, the tripartite efficacy model is largely supported with both other-efficacy and RISE predicting self-efficacy perceptions. RISE and other-efficacy also explained over half of the variance in self-efficacy beliefs. Considering that building self-efficacy perceptions is an important precursor to human agency (Bandura, 1986), this study provides evidence that supports additional tripartite efficacy constructs can lead to higher self-efficacy beliefs in interpersonal relationships. When Lent and Lopez (2002) originally outlined the tripartite efficacy model, they proposed that the original sources of self-efficacy might be missing some of the critical information that people get from social interactions. These findings are also consistent with other research in the physical activity domain in youth sport (Saville & Bray, 2016), high school physical education (Jackson et al., 2013), and college physical education courses (Jackson et al., 2012). In physical activity settings, people rarely engage in physical activity in isolation, especially if they do not think they have the resources to act effectively in the physical domain. This study provides evidence that

personal trainer-client relationships can be effective in developing personal agency through both RISE and other-efficacy. To the best of our knowledge, this study is also a first attempt at modeling the tripartite efficacy model in a path analysis where the target relationship consists of just two people.

This study focused on one (of many proposed) source of both RISE and other-efficacy, namely perceptions of trust in communication. Original conceptions of the tripartite efficacy model note that trust might be a significant predictor of relational efficacy constructs (Lent & Lopez, 2002), but it had yet to be modeled in interdependent relationships. Trust was a significant predictor of both RISE and other-efficacy, explaining a non-trivial amount of variance in both variables. The R^2 value for both RISE and other-efficacy might be inflated due to trust being modeled as the only predictor of both variables, but it is important to consider how trust might function for the development of both RISE and other-efficacy. RISE beliefs are focused on Person A's appraisal of what Person B thinks about Person A. If a personal trainer displays behaviors that engendered trust in the relationship, especially in how they communicate with the client, the client will likely feel that the personal trainer is confident in their ability in the personal training domain. These higher RISE perceptions will likely lead to higher self-efficacy beliefs when working with the personal trainer. Consistent with the current tripartite literature, perceptions of trust in communication are a significant antecedent of other-efficacy. Bandura (1997) noted that people are likely to accept feedback from people who are viewed as experts in their respective fields. Furthermore, people prefer to accept critical feedback whenever they are working with someone who they trust (Lent & Lopez, 2002). Developing this sense of trust and expertise in a working relationship will likely lead to higher self-efficacy beliefs as well as enhanced relationship outcomes such as satisfaction and commitment (Lent & Lopez, 2002).

Practically speaking, this study provides some initial evidence that trust is a source of both RISE and other-efficacy and that personal trainers, especially due to the unique relationship dependence, should communicate trust to their clients to help bolster relational efficacy perceptions.

Our study was also focused on personal trainer-client relationship outcomes, specifically, commitment, complementarity, and closeness. In our analysis, RISE was a significant predictor of all three relationship perceptions, whereas other-efficacy was only a significant predictor of complementarity. Therefore, complementarity was the only outcome predicted by both sources of relational efficacy. This finding likely stems from the nature of the personal trainer-client relationship. Complementarity is a construct aiming to capture the behavioral side of the relationship, specifically, how a personal trainer and client might engage in reciprocal behaviors in the relationships. Relationships high in complementarity would be more friendship-like and the people in the relationships would be very responsive to each other. Personal training is a field where the trainers likely engage with the clients they work with throughout the session to make the clients feel more at ease. Also, because this is the behavioral component of the relationship as proposed by the 3C's model, it makes sense that both RISE and other-efficacy would be predictors due to the largely behavioral nature of the relationship studied. Ede (2016) noted that clients would often cite perceptions of friendship with the personal trainer that they employ. These findings should also be interpreted in terms of the non-mutual dependence that occurs in the studied relationship. While in a session, the client is dependent on the personal trainer in terms of what will happen during a session. Therefore, clients are likely to work with someone who they view as efficacious in that domain (high other-efficacy) and someone who is perceived to have high RISE beliefs of their clients. These findings can also be interpreted in light of

previous literature in the coach-athlete relationship that noted when athletes or coaches estimated their partner to be confident in their ability to play tennis (i.e. RISE), their partner had high perceptions of complementarity (Jackson et al., 2010). Also, consistent with the current investigation, other-efficacy had significant effects on complementarity when examining from both the coach and athlete lens (Jackson et al., 2010). Complementarity appears to have strong relationships with relational efficacy beliefs in many different physical activity contexts.

Commitment to the relationship was significantly predicted by RISE and self-efficacy, but other-efficacy was not a significant predictor of commitment in this study. Perhaps participants do not think they will be more or less committed to a relationship, regardless of the expertise of the personal trainer. Just because a personal trainer is highly competent in what he/she is doing in their training sessions, clients seem to gather more information regarding the relationship commitment from RISE perceptions. This finding could stem from the conceptualization of other-efficacy. As defined within Lent and Lopez's work (2002) other-efficacy is just concerned with an individuals perception of their significant other's ability to perform a task. Therefore, a highly component personal trainer who does not display the warmth and support necessary to develop RISE beliefs might not have lasting committed relationships with clients. This finding has implications for practice outside of the current investigation. Future research should examine this finding within athletic injury or therapy relationships (athletic trainer with an injured athlete) to outline how these relational efficacy perceptions might influence the relationship that the athlete has with the individual providing treatment.

Perceptions of closeness in the relationship also had a significant relationship with RISE beliefs but not with other-efficacy. The lack of relationship between other-efficacy and closeness could be viewed in a similar manner as the lack of relationship between other-efficacy and

commitment to a relationship. Just because a client views their personal trainer as competent and effective as a trainer, these beliefs appear less likely to influence the how close the client feels to their personal trainer. Because other-efficacy information is providing information about the confidence the client has in the behaviors associated with personal training, other-efficacy does not appear to influence how close someone is in a relationship. Clients could feel that their personal trainer is skilled and can help them, but they don't feel close because of the professional nature of the relationship.

Although not a model parameter, the only significant indirect effect in the current investigation is other-efficacy through self-efficacy to commitment. This finding might shed light how individuals with a high dependence in a relationship develop perceptions of commitment in the relationship. Perhaps, if a client works with a personal trainer who they view as very competent, and through that interaction they develop a high sense of self-efficacy, the client might stay committed to that relationship. At surface level, this finding is consistent with how self-efficacy theory is outlined by Bandura. People are likely to stay engaged in tasks in which they feel highly efficacious (Bandura, 1997). This same behavioral outcome could also be true in situations where relationships are the outcome of interest. If self-efficacy is built through a relationship, especially in an area where someone previously felt very inept, that person would likely stay committed to the relationship, even if other components of the relationship were lacking. However, this line of thought could use future research examining why people stay engaged and committed to exercise relationships.

This study, like all studies, is not without limitations. One limitation is that the relationships that were studied in this current investigation were all still intact at the time of the survey. It is reasonable to expect that if people stay in a relationship the client views it as an

adaptive and healthy relationship. This is especially true in a relationship where the client is paying to be in the relationship. Therefore, future work should follow personal trainer-client relationships over time to determine what psychosocial variables might influence a client to discontinue a relationship with a personal trainer. The study design was cross-sectional in nature. While the literature has established the theoretical timing of the tripartite model (Jackson, Myers, et al., 2012; Jackson et al., 2014), it is worthwhile considering the timing of measurement within a social cognitive framework. Future research should continue to examine the temporal nature of the tripartite efficacy model by following relationships from the beginning to capture how these beliefs develop over time.

There are many promising avenues for future research examining the personal trainer-client relationship and the tripartite efficacy model. This study examined relational outcomes of the personal trainer-client relationship, but future work should examine behavioral outcomes of the model. While having a positive, healthy, and engaging relationship is important for psychological needs, the personal-trainer client relationship likely stems from people wanting to engage in physical activity behaviors necessary to bring about health benefits. The tripartite efficacy model proposes that relational efficacy sources should have a direct impact on relational and behavioral outcomes, and we believe that is a fruitful avenue for future research. Also, this study focused on one antecedent of both RISE and other-efficacy. The tripartite model suggests that there could be many different antecedents, but that claim has been largely untested. The little research that has examined antecedents in the tripartite model has examined global characteristics like relatedness supportive environments (Jackson et al., 2013). Other work has captured specific RISE-relevant feedback from coaches and found that RISE-relevant coaching behaviors informed the self-efficacy of youth sport athletes (Saville & Bray, 2016). However, an

expanded examination of the antecedents would be worthwhile. Also, future work should examine the tripartite efficacy constructs in experimental designs. By modifying both RISE and other-efficacy in experimental studies, we could better understand the underlying mechanisms in specific social situations.

In conclusion, this study largely supports the tenants of the tripartite efficacy model with clients who are working with a personal trainer. In this non-mutual dependent relationship, both RISE and other-efficacy seem to be important to the development of self-efficacy beliefs. When clients perceive their trainer is communicating trust, they are likely to have higher RISE and other-efficacy perceptions from their trainer. This study also supports that the relational efficacy perceptions have connections with relationship outcomes, especially perceptions of RISE. RISE relevant behaviors should be modifiable for personal trainers, and should likely be included in educational programming for personal trainers. Personal trainers have an important role in the development of self-efficacy beliefs of their clients. The interpersonal sources through which personal trainers assist clients in developing their self-efficacy beliefs should not be undersold in personal trainer education. The interactions that personal trainers have with clients, especially clients who are uncomfortable in the physical domain, will likely influence future perceptions of physical education that could be beneficial or detrimental to continued levels of physical fitness and well-being.

APPENDICES

APPENDIX A

IRB Approval

MICHIGAN STATE UNIVERSITY

Initial IRB Application Determination *Exempt*

July 13, 2016

To: Deborah L. Feltz
130 IM Sports Circle
Dept. of Kinesiology
MSU

Re: **IRB# x16-891e** Category: Exempt 2
Approval Date: July 13, 2016

Title: Tripartite Efficacy in Exercise Settings

The Institutional Review Board has completed their review of your project. I am pleased to advise you that **your project has been deemed as exempt** in accordance with federal regulations.

The IRB has found that your research project meets the criteria for exempt status and the criteria for the protection of human subjects in exempt research. **Under our exempt policy the Principal Investigator assumes the responsibilities for the protection of human subjects** in this project as outlined in the assurance letter and exempt educational material. The IRB office has received your signed assurance for exempt research. A copy of this signed agreement is appended for your information and records.

Renewals: Exempt protocols do not need to be renewed. If the project is completed, please submit an ***Application for Permanent Closure***.

Revisions: Exempt protocols do not require revisions. However, if changes are made to a protocol that may no longer meet the exempt criteria, a new initial application will be required.

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to the human subjects and change the category of review, notify the IRB office promptly. Any complaints from participants regarding the risk and benefits of the project must be reported to the IRB.

Follow-up: If your exempt project is not completed and closed after three years, the IRB office will contact you regarding the status of the project and to verify that no changes have occurred that may affect exempt status.

Please use the IRB number listed above on any forms submitted which relate to this project, or on any correspondence with the IRB office.

Good luck in your research. If we can be of further assistance, please contact us at 517-355-2180 or via email at IRB@msu.edu. Thank you for your cooperation.

Sincerely,

Ashir Kumar, M.D.
BIRB Chair

c: Christopher Hill

Office of Regulatory Affairs
Human Research Protection Programs

Biomedical & Health Institutional Review Board (BIRB)

Community Research Institutional Review Board (CRIRB)

Social Science Behavioral/Education Institutional Review Board (SIRB)

APPENDIX B

Demographic Questionnaire

1. What is your age? _____

2. What is your gender? Female Male

3. What is your race? (select one or more)

   American Indian or Alaska Native
   Asian
   Black or African American
   Native Hawaiian or Pacific Islander
   White
   Other (please specific)____
   I prefer not to respond.

4. What is your ethnicity?

   Hispanic or Latino
   Not Hispanic or Latino
   I prefer not to respond

5. What state do you live in?

6. Marital status

7. # of children

8. What is your height? Feet: _____ Inches: _____

9. What is your weight? Pounds: _____

Information about your Personal Trainer

1. How many days per week do you participate in other instructor-led exercise sessions? (group fitness classes or semi-private training)

   1 2 3 4 5 6 7

2. How many days per week do you exercise without an instructor or trainer?

   1 2 3 4 5 6 7

APPENDIX C

RISE Questionnaire

Trainer's Opinion in Training Sessions

Instructions: These statements focus on you again, but this time we would like you to estimate how confident your personal trainer is in your capability in training sessions. We're not focusing on how confident you are; we're focusing on whether you *think* your personal trainer is confident in you or not. For example, you might not be all that confident in yourself, but you might think that your personal trainer has lots of confidence in you. So, how confident do you think your personal trainer is in your capability at this moment in time to…

Response scale: 1 = *no confidence at all,* 2 = *low confidence*, 3 = *moderate confidence*, 4 = *high confidence*, 5 = *complete confidence*

1. Try your hardest in every personal training session
2. Be physically fit enough to always perform well in your training sessions
3. Learn all of the exercises that you are taught, even the most difficult ones
4. Carry out your trainer's instructions at all times
5. Perform all of the exercises you are taught in your training sessions.
6. Attempt all of the exercises you cover in your training sessions, even the hard or unfamiliar ones.
7. Improve your capability to complete every exercise in your training sessions
8. Reach your exercise goals

APPENDIX D

Other-Efficacy Questionnaire

Trainer Appraisal in Training Sessions

Instructions: This time, the statements focus on your personal trainer. Again, there are no right or wrong answers to any of these questions. This time, we would like you to rate your confidence in your personal trainer's capability. Your personal trainer will not see your answers. So, please honestly rate your confidence in your Trainer's ability at this moment in time to…

Response scale: 1 = *no confidence at all,* 2 = *low confidence*, 3 = *moderate confidence*, 4 = *high confidence*, 5 = *complete confidence*

1. Plan exercise sessions tailored toward your goals
2. Incorporate a variety of exercises into your program
3. Come up with new exercises for you to try
4. Include exercises in my program that you enjoy doing
5. Adapt your program if you are feeling tired, sore, or injured
6. Show you how to perform exercises with appropriate technique
7. Give feedback and correct your technique while you are performing the exercises
8. Keep you from becoming injured
9. Select the appropriate weight or intensity for your exercises
10. Pace the exercises appropriately throughout the session
11. Track your progress
12. Push you to work harder

APPENDIX E

Self-Efficacy Questionnaire

Instructions: The following statements focus on your personal training sessions. We would like you to rate your confidence in your training sessions. So, rate your confidence at this moment in time that you can …

Response scale: 1 = *no confidence at all,* 2 = *low confidence*, 3 = *moderate confidence*, 4 = *high confidence*, 5 = *complete confidence*

1. Try your hardest in every personal training session
2. Be physically fit enough to always perform well in your training sessions
3. Learn all of the exercises that you are taught, even the most difficult ones
4. Carry out your trainer's instructions at all times
5. Perform all of the exercises you are taught in your training sessions.
6. Attempt all of the exercises you cover in your training sessions, even the hard or unfamiliar ones.
7. Improve your capability to complete every exercise in your training sessions
8. Reach your exercise goals

APPENDIX F

Relational Communication Scale

Likert Scale 1(strongly agree)-7(strongly disagree)

Receptivity/Trust

1. He/she is sincere
2. He/she is interested in talking with me
3. He/she is willing to listen to me
4. He/she is open to my ideas
5. He/she is honest in communicating with me

Immediacy/Affection

1. He/she is intensely involved in our conversation.
2. He/she finds the conversation stimulating
3. He/she communicates coldness rather than warmth
4. He/she creates a sense of distance between us
5. He/she acts bored by our conversation

APPENDIX G

Adapted CART-Q Scale

7 Point Scale (1-strongly disagree to 7-strongly agree)

Commitment

1. I feel close to my personal trainer
2. I feel committed to my personal trainer
3. I feel that my future health is promising with my personal trainer

Closeness

1. I like my personal trainer
2. I trust my personal trainer
3. I respect my personal trainer

Complementarity

1. When I am trained by my personal trainer, I feel at ease
2. When I am trained by my personal trainer, I feel responsive to his/her efforts
3. When I am trained by my personal trainer, I am ready to do my best
4. When I am trained by my personal trainer, I adopt a friendly stance

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CHAPTER IV
STUDY 2: CLIENTS' TRIPARTITE EFFICACY BELIEFS IN PERSONAL TRAINING RELATIONSHIPS: EXAMINING THE BEHAVIORAL OUTCOMES

Preface

This study builds upon the first by examining potential influences of tripartite efficacy constructs in enhancing physical activity behaviors. Study 1 examined relational outcomes in a personal trainer-client relationship, which are important because if clients' relational beliefs in their personal trainers predicts their own self-efficacy, they may predict a greater commitment to the trainer-client relationship. But, ultimately, the aim is to understand how relational and self-efficacy beliefs within the personal trainer- client relationship actually influence the amount of physical activity an individual participates in, which is the focus of Study 2. The original conception of the tripartite efficacy model hypothesized that the relational efficacy components of the model would have a direct effect on behavioral outcomes in targeted relationships. Therefore, Study 2 focuses on two main behavioral outcomes of interest in the personal training relationship.

Study conception involved communicating with Dr. Ben Jackson, a leading scholar in the tripartite efficacy literature at the North American Society for the Psychology of Sport and Physical Activity Conference. I also worked with Dr. Deborah L. Feltz (dissertation director) to refine the model presented in the manuscript below, prepared the study instruments, collected the data, analyzed the data, and prepared the manuscript in consultation with my dissertation director, Deborah L. Feltz and other committee members as needed. This manuscript will be submitted to the journal *International Journal of Sport and Exercise Psychology*.

Abstract

Purpose: The tripartite efficacy model has previously been tested in a variety of physical activity relationships. This study furthers the examination of the tripartite efficacy model with a novel population in a personal trainer-client relationship. Also unique to this study, potential behavioral outcomes both within the personal training session (effort) and transcontextual effects (total physical activity) were modeled as outcomes to the tripartite efficacy constructs

Method: Adults who exercise with a personal trainer were asked to fill out a survey at two time points, separated by a week. At the first time point, participants perceptions of relation-inferred self-efficacy (RISE), other-efficacy, and self-efficacy during training sessions were measured. A week later, participants were asked to about their physical activity behavior and effort during sessions with the personal trainer.

Results: Pathways from RISE and other-efficacy to self-efficacy were both significant, explaining 33% of the variance in self-efficacy beliefs. Other-efficacy and self-efficacy were both significant predictors of effort, and there were no significant predictors of total physical activity.

Conclusion: RISE and other-efficacy appear to be significant social factors contributing to individual agency in an adult population working with a personal trainer. Mixed findings regarding the behavioral outcomes of the tripartite efficacy model in this examination provide avenues for future work, especially when considering the potential for transcontextual effects in this physical activity relationship.

Introduction

Personal trainers are agents who people often seek out for help with reaching health and fitness goals. Personal trainers develop and instruct fitness programming for individuals to help

people achieve their fitness goals in a safe and productive manner (ACSM, 2013). In the United States alone, it is estimated that there are 279,000 personal training jobs in a variety of settings, and the number of jobs is expected to increase at faster than average pace over the next 10 years (US Department of Labor Statistics, 2016). Considering the large reach that personal trainers have in the fitness world, very little is known about the psychosocial or behavioral outcomes of the personal trainer-client relationship.

A promising model for understanding the development of personal agency in personal trainer-client relationships is the tripartite (relational) efficacy model proposed by Lent and Lopez (2002). Specifically, Lent and Lopez denoted that in close interpersonal relationships, two specific forms of relational efficacy beliefs develop and influence an individual's self-efficacy belief. In the tripartite efficacy model, relation-inferred self-efficacy (RISE) and other-efficacy have significant roles in the development of self-efficacy. RISE beliefs are an individual's estimation of a significant other's belief in him or her. In other words, it is person A's estimation of how confident person B is in person A. Other-efficacy is conceptualized as an individual's belief about another person's ability to perform behaviors (Jackson, Bray, Beauchamp, & Howle, 2015). Other-efficacy would be person A's confidence in person B. Self-efficacy has been noted as a consistent psychosocial correlate of physical activity (Biddle, Hagger, Chatzisarantis, & Lippke, 2007), therefore, the tripartite efficacy model provides new avenues to bolster efficacy beliefs in interpersonal contexts.

Proxy efficacy presents a unique kind of other-efficacy belief that occurs in a relationship where an individual gives some control to the other person in the relationship (Jackson et al., 2015). Proxy agency is a more accurate representation of the personal trainer client relationship, but just examining the proxy efficacy beliefs alone might miss other key components for

understanding the development of personal agency in fitness relationships. To stay consistent with the language, other-efficacy will be the term used throughout the remainder of the manuscript.

From a theoretical perspective, the adaptive outcomes of both other-efficacy and RISE are worthy of investigation, especially in social situations. Jackson, Myers, and colleagues (2012) examined the direct effects of the relational efficacy beliefs of physical education students on course enjoyment, course effort, and course achievement, and largely found support for the model in the undergraduate physical education. However, RISE (i.e., students' beliefs regarding how the course instructor views their own individual efficacy) did not have a significant direct effect on effort or enjoyment. Other studies have denoted that the majority of the core tripartite efficacy model is supported, but the hypothesized direct effects do not always appear significant (Jackson, Whipp, & Beauchamp, 2013). In fact, the tripartite efficacy model has demonstrated some support for relational efficacy beliefs (particularly other-efficacy) in promoting enjoyment and achievement, but RISE does not always appear to have a direct effect on valued outcomes (Jackson, Myers et al., 2012). However, small group settings (i.e. one on one personal training sessions), where the interdependence of the group is much closer, are likely to produce stronger effects with regards to relational efficacy beliefs having direct effects to positive outcomes.

Increasing physical activity is typically an outcome of interest for researchers in exercise psychology and public health advocates. To expand on the initial findings of the relational efficacy model, Jackson and colleagues (2013) aimed to examine if tripartite efficacy constructs impacted physical activity behaviors in physical education. Jackson, Whipp, Chua, Dimmock, and Hagger (2013) were interested in potential transcontextual effects of relational efficacy

beliefs in physical education and how those beliefs in a school setting might translate to leisure time physical activity. There is previous support for transcontextual effects in education, and having transcontextual effects could be a valuable outcome in physical education (Hagger & Chatzisarantis, 2012). The results indicated that RISE and other efficacy beliefs in physical education showed direct effects on leisure time physical activity in Singaporean youth (Jackson et al., 2013). Consistent with the previously mentioned findings, Jackson et al. (2013) studied high school students and suggested that the tripartite efficacy model constructs contributed to the development of self-regulatory efficacy, through task self-efficacy beliefs. Also, other-efficacy, task self-efficacy, and exercise self-regulatory efficacy had significant direct effects to average weekly exercise when controlling for baseline exercise (Jackson, Whipp et al., 2013). This finding suggests that the entire set of tripartite efficacy beliefs is important in understanding how task self-efficacy beliefs develop, along with how these beliefs might influence self-regulatory efficacy to be physically active. Also, to-date, researchers have not studied the effects of relational efficacy beliefs on physical activity behaviors of adults.

Although there have been many new advancements in understanding the tripartite efficacy model, the strength of its key determinants (RISE and other-efficacy) on self-efficacy beliefs to be physically active has yet to be tested in adults. Some research has noted the explanatory value of the model in physical education (Jackson, Myers et al., 2012; Jackson et al., 2013; Jackson, Whipp et al., 2013), but that research was conducted with samples of high school and college students. This study aims to extend this model of developing efficacy beliefs in interpersonal relationships to adults who are working with a personal trainer.

Bandura (1997) clearly outlines that self-efficacy beliefs will influence subsequent behavior, therefore, the temporal nature of the how efficacy beliefs function should be

incorporated into research designs. In this study, we measure other-efficacy, RISE, and self-efficacy at Time 1, and measure physical activity behavior and in-session effort one week later at Time 2. When the behavior of interest is measured at the same time as efficacy beliefs, the causes of behavior are more attributional in nature and do not fit the hypothesized model for this study. Previous research examining the tripartite efficacy model has followed this temporal relationship (Jackson, Myers et al., 2012; Jackson et al., 2013). However, other research examining social cognitive constructs have ignored the temporal order of measurement necessary to understand the function of self-efficacy beliefs (Jackson, Dimmock, Taylor, & Haggar, 2012). Based on the propositions of self-efficacy theory, this study used two measurement times to capture a better estimate of the influence efficacy beliefs have on behavioral outcomes.

Moving this research into the personal trainer-client relationship in adult populations will provide important information about the usefulness of relational efficacy beliefs to bolster self-efficacy perceptions and physical activity behaviors. Recent commentaries have noted the need for research of the tripartite efficacy model to be moved into more diverse interactions (Jackson et al., 2015), which this paper clearly does by examining the personal trainer-client relationship. As previously noted, the personal trainer, client relationship is highly interactive, potentially leading to increased cognitive and relational ties between the members of the relationship. Because the behavior that is being targeted in personal training relationships is physical activity, this study examined how relational efficacy beliefs influence the physical activity behaviors of the clients in the relationship. Also, consistent with previous research, clients in a personal trainer-client relationship who have high perceptions of other-efficacy and RISE beliefs will likely put forward more effort during sessions. Therefore, the purpose of this study was to examine the direct and indirect effects of the tripartite efficacy model with clients who work with

personal trainers on behavioral outcomes. The behavioral outcomes of interest for this study were in-session effort and self-reported total physical activity.

The model that I tested is illustrated in Figure 2. It was hypothesized that RISE and other efficacy will directly and positively predict the client's self-efficacy beliefs, physical activity, and effort in training sessions. Self-efficacy also will be a positive and significant mediator of RISE and other efficacy as predictors of physical activity and effort. The hypotheses that will be tested are listed below:

1. RISE and other-efficacy beliefs will have positive direct effects on self-efficacy, as well as, self-reported physical activity and in-session effort.
2. Self-efficacy will have a positive direct effect on the effort put forth in personal training sessions and self-reported physical activity.
3. RISE and other-efficacy beliefs will also have a positive indirect effect on self-reported physical activity and in-session effort through self-efficacy beliefs.

Method

Participants.

Prior to conducting Study 2, IRB approval (see Appendix A) was obtained to survey clients who were in an active personal trainer-client relationship. The final sample size for Study 2 was 301 participants who completed the survey at both time points. The participants in this study were at least 18 years old and currently working with a personal trainer. Participants were on average 46.82 (SD = 11.54) years of age with 61.5% of the respondents being women. On average, participants worked with a personal trainer 3.65 (SD = 1.17) days per week and exercised without the assistance of a personal trainer 1.48 (SD = 1.18) days in per week. Participants had worked with their personal trainer 18.10 (SD = 17.62) months on average.

Procedures.

Participants were contacted from online advertisements promoting the study from gym website and social media accounts. Gyms were sampled nationwide and a snowball sampling technique was used to identify gyms that fit the purpose of the study. The survey was sent out via Qualitrics software so that participants could complete the study survey from any place where they had access to the internet. In order to help with the recruitment of participants, four gift cards with a valuation of $50 were raffled to participants who enrolled in the study. This survey was administered over two time points, separated by 1 week. The survey was opened online 879 times. To maintain the theorized relationship between efficacy beliefs and physical activity (efficacy beliefs are an antecedent of behavior), the demographics and relational efficacy beliefs were measured in the first round of questionnaires (N = 632). After 1 week elapsed, the participants were contacted with another survey link via email to complete questions about their in-session effort and physical activity behavior (N = 301). If participants did not respond to the first email, they were prompted one day later to complete the survey. If the participants did not respond to the second email prompt, they were no longer contacted to participate in the study. Because the temporal relationship between efficacy beliefs and behavioral outcomes is worth considering in path analysis research, the final sample size used was 301.

Measures.

Demographics. The participants were asked to answer questions regarding their personal demographic information. The demographic questions of interest included age, gender, marital status, and self-reported height and weight. There were questions that were aimed at understanding more about the relationship between the personal trainer and the client. The number of sessions that clients exercised under the guidance of the personal trainer and the

number of days that clients exercised without the guidance of the personal trainer were collected. See Appendix A for the demographic questionnaire.

RISE. RISE beliefs were measured using eight questions that were developed from previous work examining tripartite efficacy beliefs within secondary school physical education and were modified to be appropriate for personal trainer-client relationships. (Jackson et al., 2013). The questions were focused on the client's inference regarding the personal trainer's confidence in his/her ability to perform tasks. The instructions stated,

> "These statements focus on you again, but this time we would like you to estimate how confident your personal trainer is in your capability in training sessions. We're not focusing on how confident you are; we're focusing on whether you think your personal trainer is confident in you. So, how confident do you think your personal trainer is in your capability at this moment in time to…"

Some example items include, "Be physically fit enough to always perform well in your training sessions" and "Learn all of the exercises that you are taught, even the most difficult ones." The participants rated each response on a scale from 1 (no confidence at all) to 5 (complete confidence). Although Bandura (2006) recommends efficacy measures be rated on an 11-point scale, research in sport and exercise psychology has demonstrated that a condensed 5-point scale may be appropriate for efficacy measures (Jackson, Whipp, Chua, Pengelley, & Beauchamp, 2012; Myers, Feltz, & Wolfe, 2008).

Other-efficacy. The 12 other-efficacy questions were developed from previous research examining proxy efficacy beliefs in personal trainer-client dyads (Ede, 2016). The other-efficacy measures represent a measure of confidence in a personal trainer's ability to put the client

through a challenging workout, adapt the training program to fit individual needs, and to keep the client safe during training sessions. The instructions read,

> "This time, the statements focus on your personal trainer. Again, there are no right or wrong answers to any of these questions. This time, we would like you to rate your confidence in your personal trainer's capability. Your personal trainer will not see your answers. So please honestly rate your confidence in your trainer's ability at this moment in time to…"

Some sample items for the other-efficacy questionnaire include, "Plan exercise sessions tailored toward your goals" and "Give feedback and correct your technique while you are performing the exercises." The participants rated their confidence in their personal trainer for each item on a scale from 1 (no confidence at all) to 5 (complete confidence).

Self-efficacy. Self-efficacy was measured with eight questions that focused on the participant's confidence in themselves during their training sessions. The questions were modified to fit the personal trainer-client context from previous work in examining self-efficacy beliefs in the tripartite efficacy model with physical education students (Jackson et al., 2013). The items that participants responded to for self-efficacy were the same items as the RISE questions, but a different stem because participants were answering about their own self-belief. The instructions stated, "We would like you to rate your confidence in your training sessions. So, rate your confidence at this moment in time that you can…" Some example items for the self-efficacy scale include, "Carry out your trainer's instructions at all times" and "Improve your capability to complete every exercise in your training session." The item responses were scaled from 1 (no confidence at all) to 5 (complete confidence).

In-Session Effort. Participants rated their effort during personal training sessions using the effort subscale from the Intrinsic Motivation Inventory (IMI; Ryan, 1982) modified for the personal trainer-client relationship. The effort subscale of the IMI has five questions that use a 1 (not true at all) to 7 (very true) scale. There is evidence from previous research in the tripartite efficacy model that effort has a positive relationship with other-efficacy but not RISE (Jackson, Myers et al., 2012). Questions included in the in-session effort questionnaire include, "I put a lot of effort into my personal training sessions" and "It is important to me to do well in my personal training sessions." See Appendix B for In-session Effort questionnaire.

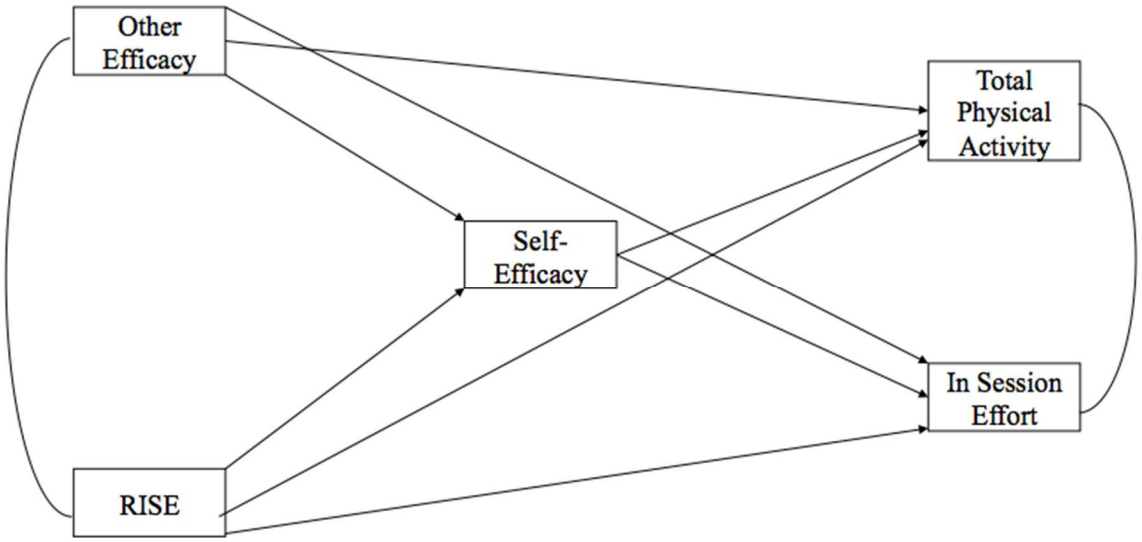
Physical Activity. To measure physical activity, this study utilized the International Physical Activity Questionnaire-Short (IPAQ; Booth, 2000). The IPAQ short version has a set of four generic items that aim to capture the amount of vigorous physical activity, moderate physical activity, walking, and sitting an individual completes in the past 7 days. It is a more succinct version of the original IPAQ and allows people the freedom to report activities (i.e. weight training) that might not be picked up on other self-reported physical activity questionnaires. IPAQ short has been noted as one of the most reliable questionnaires, especially in test-retest reliability examinations (Helmerhorst, Brage, Warren, Besson & Ekelund, 2012). See Appendix C for the IPAQ.

Data analysis.

The data from both time points were analyzed using observed variable path analysis with Mplus 7.4 (Muthen & Muthen, 2011) consistent with the model presented in Figure 3. The means of the scales used were modeled as the observed variables in the path analysis. Both direct and indirect effects were examined as well as variance explained in the model. Because the model is saturated (meaning there is a path between every observed variable), fit indices were

not examined. If fit indices were examined, they would note perfect fit between the model and observed covariance matrix.

Figure 4.1. Hypothesized Relationships Between Tripartite Efficacy Variables and Behavioral Outcomes.



Results

Descriptive statistics and correlations.

Table 4.1 presents the means, standard deviations, and correlations for the variables modeled in the study. On average, participants engaged in 279.42 min of moderate to vigorous physical activity in the previous week in which they were surveyed. This number is much higher than the amount of recommended physical activity to bring about positive changes in health. Other-efficacy, RISE, self-efficacy, and in-session were rated higher than the scale midpoint. Given that the means are higher than scale midpoint, participants in this study have high relational efficacy beliefs (both RISE and other-efficacy), self-efficacy perceptions, and perceive that they put forth a good effort in their personal training sessions.

Table 4.1. Descriptive Statistics and Correlations.

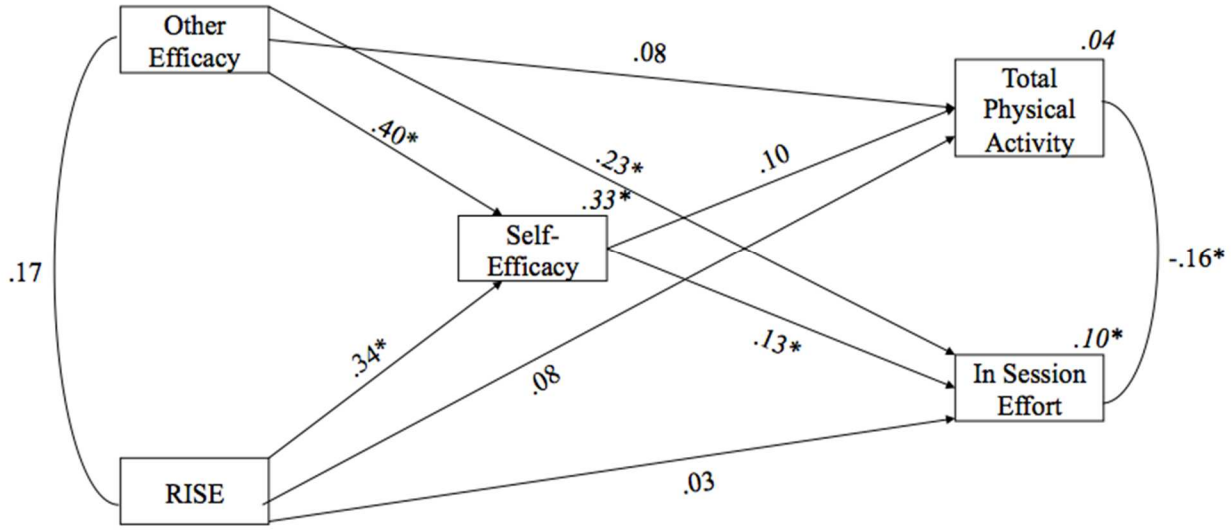
Variable	M	SD	OE	RISE	SE	Effort	PA
OE	4.27	.47	--				
RISE	4.07	.62	.17*	--			
SE	4.21	.45	.45*	.41*	--		
Effort	6.34	.42	.29*	.12*	.25*	--	
PA	279.42	118.26	.14*	.14*	.17*	-.09	--

Note. Correlations noted by * were significant at the $p < .01$ level. OE = Other-efficacy. RISE = Relation inferred self-efficacy. SE = Self-efficacy. PA = Minutes of moderate to vigorous physical activity

Direct effects.

Figure 4.2 outlines the results of the observed variable path analysis. Consistent with the tripartite efficacy literature in physical activity settings, other-efficacy and RISE are both significant predictors of self-efficacy, with both predictors explaining 33% of the variance of self-efficacy. Self-efficacy was a significant predictor of in-session effort, but was not a significant predictor of total physical activity. Other efficacy was also a significant predictor of in-session effort, but was not a significant predictor of total physical activity. RISE was not a significant predictor of either in-session effort of total physical activity. The correlation between other-efficacy and RISE was positive and significant, as was the correlation between total physical activity and in-session effort. Contrary to the hypothesized relationship, total physical activity and in-session effort had a negative relationship.

Figure 4.2. Observed Variable Path Model with Standardized Estimates of the Path Coefficients.



Note. R^2 estimates of the observed endogenous variables are in italics above the variables in the path model. The standardized estimates will be interpreted as .10 being small, .30 being moderate, and .50 being large (Cohen, 1992). An "*" indicates $p < .05$.

Indirect effects.

The indirect effects of the model, noted in Table 4.2, indicated that there are two indirect effects that are at the traditional threshold of statistical significance. The two significant effects were other-efficacy through self-efficacy to in-session effort, and RISE through self-efficacy to in-session effort. These indirect effects outline that other-efficacy and RISE could impact the amount of effort that someone puts forth in a session, as a function of the development of self-efficacy beliefs. This finding is consistent with the proposed function of the tripartite efficacy model. Consistent with the main effects of the model, the indirect effects that have physical activity as an outcome to the model are not significant.

Table 4.2. Indirect Effects of the Proposed Model.

Specific Indirect	Estimate	SE	*p*
OE-SE-Effort	.05	.03	.05
RISE-SE-Effort	.05	.02	.05
OE-SE-PA	.04	.03	.14
RISE-SE-PA	.04	.02	.14

Discussion

The purpose of this study was to examine two behavioral outcomes of the personal trainer-client relationship, in-session effort and total physical activity, through the lens of the tripartite efficacy model. First, and not surprising, both RISE and other-efficacy were significant predictors of self-efficacy, which is consistent with previous findings of the core tripartite model in physical activity settings. This finding builds on previous work in physical education (Jackson et al., 2012; Jackson et al., 2013) and sport settings (Jackson et al., 2014) that demonstrate the usefulness of the tripartite efficacy model in physical activity.

Second, in terms of relational efficacy beliefs, Lent and Lopez (2002) outlined that they should function through self-efficacy to behavioral outcomes, but should also exert a separate effect on behavioral outcomes. Many previous studies that have examined the efficacy – behavioral outcomes relationship have examined these variables simultaneously without regard to the temporal nature of efficacy beliefs on subsequent behavior. This study maintained the temporal relationships that are crucial for testing self-efficacy—behavior relationships with self-efficacy being measured 1 week before the physical activity measurement. Measuring self (and relational) efficacy beliefs before the behavior of interest is critical for maintaining the theoretical underpinnings of self-efficacy theory.

In measuring behavioral outcomes 1 week after efficacy beliefs, both in-session effort and total physical activity were used because they are within the domain of physical training and

conditioning. Results showed other-efficacy was a significant predictor of in-session effort, but was not a significant predictor of total physical activity. It is worthwhile noting that total physical activity captures the activity that is occurring outside of the relationship, whereas in-session effort is focused on the time that a client works with a personal trainer. Therefore, it does seem that viewing the personal trainer as highly competent, can lead to clients working harder while in sessions with their personal trainer. However, there is not a transcontextual effect that led to clients engaging in more physical activity outside of their session with the personal trainer when they are highly confident in their trainer's ability. It is likely that people work with a personal trainer because they do not have the personal agency to exercise on their own, or they lack the motivation to engage in the behaviors without the guidance of an expert. This analysis notes that working with a personal trainer, in whom the client is highly confident, might lead to the client working harder in sessions, but the effect does not carry-over into the world outside of the sessions. This finding in itself might indicate that people are willing to engage in a relationship with a personal trainer who is perceived as very competent, even if they do not engage in RISE-promoting behaviors that are linked strongly with relational outcomes in previous interpersonal studies (Jackson et al., 2010). Likely they would work with that trainer because they believe that their health will improve under their guidance, ignoring the interpersonal cues that might lead to a relationship where RISE beliefs can flourish. However, it is short-sighted to take that view solitarily because of the previous findings that outlined the importance of a relatedness-supportive environment in physical activity settings (Sparks, Lonsdale, Dimmock, & Jackson, 2017).

Contrary to Lent and Lopez's (2002) propositions, RISE was not a significant predictor of either behavioral outcome. This finding, however, is not completely at odds with previous

literature examining the behavioral outcomes of the tripartite efficacy model. Jackson and colleagues (2012) noted that RISE did not have a significant relationship with effort and other adaptive outcomes in physical education classrooms using the appropriate temporal ordering of measurement. This study provides evidence that RISE did not have significant direct relationships with the adaptive behavioral outcomes in a close interpersonal physical activity relationship. However, the indirect effects of RISE and other-efficacy might provide some explanation about the effort that clients put forth in an exercise session as well as the clients' physical activity behaviors.

Both RISE and other-efficacy had significant indirect pathways through self-efficacy to in session effort. This finding is not unique to the previous literature in physical activity settings. In physical education settings, previous research has noted that RISE and other-efficacy had indirect effects through self-efficacy to effort in college students (Jackson, Myers, et al., 2012). Examining both pathways provides information about how relational efficacy beliefs function in the scope of influencing behavioral outcomes. Lent and Lopez (2002) noted having a high level of confidence in the target person (in this case the personal trainer) could influence an individual's cognitions, which could in turn influence how much effort they put forth in their training sessions with the target individual. Self-efficacy, in this case, is a cognitive link between the social influence and the behavioral outcome. Perceptions of how a personal trainer views a client's ability in sessions, again affects how much perceived effort is put forth in sessions.

Self-efficacy did have a significant tie to effort in personal training sessions, but did not have a significant link to total physical activity. It is worthwhile to remember that the self-efficacy belief measured in this examination was a task specific self-efficacy designed to capture self-efficacy while engaged in a personal training session. This study did not examine other self-

efficacy beliefs like barrier-self-efficacy that might have stronger ties to physical activity behaviors when examining total amounts of physical activity. In this sample, self-efficacy for in-session behaviors is linked to in-session effort. From a social cognitive standpoint, this is consistent with the predictions outlined by researchers over the past decades (Bandura, 1986). Self-efficacy beliefs have some degree of generalizability that will vary depending on the similarity or dissimilarity of the context in which the skill or belief will be employed (Bandura 1997). Perhaps, personal trainers spend the bulk of their time in sessions focusing on the tasks relevant to the skill performance in the moment and less time providing information about ways to boost physical activity outside of sessions. It is worthwhile to consider that this group did report very high amounts of moderate to vigorous physical activity. Therefore, with a sample of people who work with a trainer and are close to double the amount of activity recommended by the ACSM guidelines for physical activity (ACSM, 2013), the link between self-efficacy (and the other relational efficacy constructs), is less likely to be uncovered.

Another potential lens to through which the results can be examined is to consider a transcontextual effect that personal training sessions might have with physical activity behaviors outside of training sessions. Hagger and Chatzisarantis (2012) recommend considering how motivational factors might transfer across multiple domains. In this study, self-efficacy and other-efficacy both had an impact on in-session effort, but neither had an impact on total physical activity. Perhaps the personal trainer-client relationship does not have components that would lead to a transfer of self-efficacy beliefs, and subsequent behavior, outside of the training session. This result is somewhat counterintuitive because most personal trainer certifications and training outline of importance of promoting healthy choices outside of the face-to-face meetings. Future work should examine components of the personal training-client relationship that could

be targeted to bolster this transcontextual effect. Perhaps incorporating more education about ways to be active outside of sessions into the meetings themselves would be advisable.

Surprisingly, there was a negative relationship between in-session effort and total physical activity. In some cases, clients might put forth a lot of effort in a session, pushing themselves close to exhaustion because they view the time with the personal trainer as specific exercise time. Once those clients are done with the session, they might be less likely to engage in other leisure time physical activity because they have already completed their exercise. Although the finding is theoretically interesting, much more research would need to be completed to better understand the psychological drivers of this negative relationship.

It should also be noted that this sample reported being highly active, accumulating close to double the amount of physical activity that is recommended to bring about health benefits. Participants in this sample also reported being in a relationship with a personal trainer for an average of 18 months. Therefore, this sample of people is representative of people that are already reaping the benefits of exercising with the guidance of a personal trainer. In the transtheoretical model (Connors, Donovan, & DiClemente, 2001), this group of people would already be considered in the maintenance stage of behavior change. Interestingly, this sample is still working with a trainer a fair amount of time after they have started working with a trainer. Even though the clients that have been engaged in a significant amount of physical activity over a long duration, they are still exercising in sessions with the personal trainers. Therefore, the personal trainer might not only be modifying their self-efficacy perceptions via the relational efficacy constructs, but they might be creating environments that engender social support and other psychosocial correlates that have strong ties to physical activity participation. Future

research should continue to untangle how a client's current and past behavior might impact the tripartite efficacy constructs noted in this study.

This study has its limitations. While the tripartite model hypotheses were largely supported by other-efficacy and self-efficacy predicting in-session effort, total physical activity was unsupported as an outcome of the tripartite efficacy model in these relationships. First, total physical activity was measured using the self-report questionnaires. Previous studies have noted that people can overestimate their physical activity levels when asked to recall them on questionnaires compared to device measured physical activity (Sallis & Saelens, 2000). However, this study maintained the temporal relationships that is crucial for testing self-efficacy—behavior relationships with self-efficacy being measured 1 week before the physical activity measurement. Second, this study examined people who were already in existing personal trainer-client relationships. We were unable to follow personal trainer-client relationships from the beginning and see how relational efficacy perceptions can shape the foundations of a relationship. Future research should examine how these relational efficacy beliefs are built by following relationships from the start. Also, these relationships were likely perceived as adaptive. Because the services of a personal trainer cost the client money, it is unlikely that a client would stay in an unhelpful relationship where the client did not feel like they were working hard or developing their own efficacy beliefs. Future research should also consider other efficacy beliefs that might be built through the relationship a client has with a personal trainer, namely barrier self-efficacy and self-regulatory efficacy. Perhaps barrier and self-regulatory efficacy would have ties to total physical activity because they are efficacy beliefs that are largely concerned with confidence beliefs in day-to-day physical activity behaviors. However,

future work is warranted to better uncover how these beliefs, with in the personal trainer-client relationship, might shape the amount of physical activity that a client participates in.

In conclusion, this study provides support for the main tenants of the tripartite efficacy model in a unique social situation, one-on-one personal trainer-client relationships. Relational efficacy beliefs have been consistently demonstrated as essential for the development of self-efficacy beliefs in multiple social physical activity settings (Jackson, Myers, et al., 2012, Jackson et al., 2014, Sparks et al., 2017). Personal trainers can engender these relational efficacy beliefs and help bolster the self-efficacy perceptions of their clients, leading to greater in-session effort. However, the tripartite efficacy constructs did not extend past the limits of the session to influence total physical activity, in this sample. Relational efficacy beliefs stemming from the interaction with a personal trainer can influence individual's self-efficacy beliefs, which influences some behavioral outcomes for their clients.

APPENDICES

APPENDIX A

Study 2 Demographic Questionnaire

What is your age? _____

What is your gender? Female Male

What is your race? (select one or more)
- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Pacific Islander
- White
- Other (please specific)____
- I prefer not to respond.

What is your ethnicity?
- Hispanic or Latino
- Not Hispanic or Latino
- I prefer not to respond

What state do you live in?

Marital status

Number of children?

What is your height? Feet: _____ Inches: _____

What is your weight? Pounds: _____

Information about your Personal Trainer

How many days per week do you participate in other instructor-led exercise sessions?

1 2 3 4 5 6 7

How many days per week do you exercise without an instructor or trainer?

1 2 3 4 5 6 7

How many months have you worked with your personal trainer?
What are the initials of the gym you currently exercise at?
What is the gender of your personal trainer?

APPENDIX B

IMI Effort Subscale

1 = not at all true, 4 = somewhat true, 7 = very true

1. I put a lot of effort into my personal training sessions.
2. I try very hard in my personal training sessions.
3. It is important for me to do well in personal training sessions.
4. I don't try very hard to do well in my personal training sessions
5. I don't put much energy into my personal training sessions.

APPENDIX C

IPAQ

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days.** Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the vigorous activities that you did in the **last 7 days. Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

- During the **last 7 days,** on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling
    - ____days per week
    - How much time did you usually spend doing vigorous physical activities on one of those days
        - ___hours per day
        - ___minutes per day
        - ___don't know/not sure

Think about all the moderate activities that you did in the **last 7 days. Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

- During **the last 7 days,** on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.
    - ____ days per week
    - How much time did you usually spend doing moderate physical activities on one of those days?
        - ____hours per day
        - ____minutes per day
        - ____don't know/not sure

Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

- During the last 7 days, on how many days did you walk for at least 10 minutes at a time?
    - ____days per week
    - How much time did you usually spend walking on one of those days?
        - ___hours per day
        - ___minutes per day
        - ___don't know/not sure

The last question is about the time you spent sitting on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

- During the last 7 days, how much time did you spend sitting on a week day?
    - ___hours per day
    - ___minutes per day
    - ___don’t know/not sure

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CHAPTER V
GENERAL DISCUSSION

Review of the Two Studies

The overarching goal of the two studies presented in this dissertation was to examine the personal trainer-client relationship, through the eyes of the client, using the socially derived tripartite (relational) efficacy model. Previously, little attention had been given to the tripartite efficacy model in one-on-one physical activity relationships, especially in adult populations. However, the findings have been quite robust in youth sport settings (Saville & Bray, 2016), athlete-athlete relationships (Jackson, Gucciardi, Lonsdale, Whipp, & Dimmock, 2014), and physical education-student relationships (Jackson, Myers, Taylor, & Beauchamp, 2012, Jackson, Whipp, Chua, Dimmock, & Hagger, 2013).

Study 1 examined the relational outcomes (specifically commitment, closeness, and complementarity) that might be associated with differing tripartite efficacy constructs. Each relational variable was modeled as an outcome from the tripartite efficacy model. Also of interest in Study 1 was an antecedent of the tripartite efficacy model, perceptions of trust in communication with the personal trainer. The core of the tripartite model was supported in this study, with RISE and other-efficacy both predicting self-efficacy beliefs. Trust was also a significant predictor of the relational efficacy beliefs of RISE and other-efficacy. RISE was a significant predictor of relational commitment, closeness, and complementarity. Other-efficacy was a significant predictor of only complementarity.

Noteworthy to this study was the important pathways that exist between the relational efficacy components and relational outcomes. It is consistent with the theoretical components of the tripartite efficacy model that if you believe your personal trainer is confident in you, and you have high confidence that your personal trainer can help you, you will likely perceive that you

are in a positive, healthy relationship. Results from Study 1 showed that a client's belief in his/her personal trainer's confidence in the client (RISE beliefs) is especially salient when examining positive or negative relational outcomes. Lent and Lopez (2002) underscore that when people have positive RISE beliefs, they are likely to feel more support in a relationship, leading to individuals who are more satisfied with the relationship. These hypotheses about the tripartite efficacy model are supported in Study 1.

Although RISE beliefs were linked to each of the relational components of the personal trainer-client relationship, as measured in this study, other-efficacy was only linked to the complementarity component of the relationship. Complementarity is conceptualized as the behavioral component of the relationship. Behaviors nested within complementarity include being responsive and at-ease when working with the personal trainer. Perhaps when a client is working with a personal trainer who they believe is very competent, the client adopts a more open, friendly stance compared to a trainer who does not appear to be competent or is new to the profession. However, it is interesting that being confident in the personal trainer's skills did not predict either relationship commitment or closeness. From a conceptual standpoint, other-efficacy and some components of a relationship might not be connected because of the origins of other-efficacy beliefs. An individual is likely to choose a personal trainer based on some level of expertise that they might project because they are trying to reach a fitness goal. Study 1 results suggest that an individual's perceptions of how committed and close s/he are in the relationship might not have anything to do with confidence in the personal trainer.

Also of note in Study 1 is that perceptions of trust were significant predictors of both RISE and other-efficacy beliefs. Although this finding is consistent with hypothesized relationships within the current tripartite efficacy literature, it has yet to be modeled using data

from existing relationships. The effect between trust and the relational efficacy components was moderate and should be investigated in future research as a potential mechanism to bolster relational efficacy perceptions. Furthermore, there are a plethora of other proposed antecedents that were outlined by Lent and Lopez (2002) in the initial model and have also been proposed in writings from Jackson, Bray, Beauchamp, and Howle (2015) specific to physical activity relationships. However, these antecedents are still largely untested and warrant future investigation.

The main purpose of Study 2 was to examine how the core components of the tripartite efficacy model might predict behavioral outcomes that are important in personal trainer-client relationships. The behavioral outcomes of interest in Study 2 included self-reported in-session effort and total physical activity as measured by questionnaire. Again, consistent with Study 1, the core of the tripartite model was supported with both other-efficacy and RISE beliefs about the personal trainer being significant predictors of self-efficacy beliefs. It was hypothesized that RISE, other-efficacy, and self-efficacy would each predict the amount of physical activity an individual engages in during a week as well as the effort they put forth during training sessions. The hypothesis that the relational efficacy constructs would predict the amount of physical activity in which a client engages was not supported in this analysis, explaining only 4% of the variance in physical activity. However, there was mixed support for the other tripartite efficacy constructs predicting the amount of effort a client puts forth during a training session. Other-efficacy and self-efficacy were both significant predictors of the amount of self-reported effort during training sessions, but RISE was not a significant direct predictor of effort in training sessions.

After examining the indirect effects of the model proposed in Study 2, there were significant ties from both RISE and other-efficacy, through self-efficacy to in-session effort. Using path analysis, these indirect pathway shed light on how the relational efficacy beliefs might function in influencing behavioral outcomes. The tripartite efficacy model posits that the links between relational efficacy beliefs and outcomes, either relational or behavioral, could be the function of direct paths, indirect paths through the development of self-efficacy, or some combination of both direct and indirect effects (Lent & Lopez, 2002). In this study, both the direct and indirect path (through self-efficacy beliefs) from other-efficacy to in-session effort was significant. This path highlights that when clients are confident that their personal trainers are competent in their skill-set as fitness professionals, they are likely to put forth more effort when they are working with the personal trainer. This effect occurs as both a direct pathway (other-efficacy to in-session effort directly) or as an indirect pathway, where an individual's other-efficacy perceptions bolsters the client's self-efficacy beliefs, leading to more effort in the session. Although RISE did not have a direct effect to in-session effort, there was a positive significant indirect pathway from RISE through self-efficacy, to in-session effort. In other words, how a client feels his/her personal trainer views them helps build self-efficacy beliefs, and through those self-efficacy perceptions he/she are likely to put forth more effort in sessions. Although these indirect pathways can be estimated using path analysis, there is still future research in this area that needs to uncover the temporal component of the indirect relationships. A large body of evidence suggests that self-efficacy beliefs have strong ties to behavioral outcomes (Beauchamp, Jackson, & Morton, 2012; Biddle, Hagger, Chatzisarantis, & Lippke, 2007), but future work needs to refine how these relational constructs emerge from interpersonal

relationships to inform self-efficacy beliefs (as well as outcomes of interest for researchers and practitioners).

A practically important finding in the second study is the lack of a relationship between any of the efficacy constructs and overall physical activity behavior in this sample. This surprising finding might be explained by examining how the measures used in this study were constructed. In Study 2, the relational efficacy constructs and self-efficacy beliefs were specific for the tasks and situations that an individual is likely to encounter during personal training sessions. Therefore, these beliefs are more in line with task relational and self-efficacy perceptions. The focal point of this investigation was to better understand how these task-relevant beliefs might shape behavior, but there was a disconnect between the behavior of interest and the measurement of efficacy beliefs. When measuring social cognitive constructs that might relate strongly to total physical activity, future research would be warranted to examine barrier or self-regulatory efficacy beliefs. Barrier or self-regulatory efficacy questionnaires will pose questions with an attempt to garner more information about the barriers or ability to regulate activity to maintain levels of physical activity in a more general sense. Consistent with this explanation, future research could examine the influence that personal trainers have in the development of barrier or self-regulatory efficacy beliefs in the clients. The measurement of relational- and self-efficacy constructs in this study pose only task relevant questions aimed at understanding in-session efficacy beliefs. Because the context is similar (in-session efficacy and in-session effort) it makes sense that these beliefs would be related and the tripartite model would provide some explanatory value. The other explanation worth exploring is that the clients working with personal trainers are working at high levels of intensity and putting forth a lot of effort. Because this effort is so laborious during a session, they are less likely to

engage in physical activity outside of the personal training sessions in a way that would relate to the tripartite efficacy constructs. In the future, it would be interesting to see if RISE and other-efficacy beliefs about a personal trainer, but focused on external activities (like eating and engaging in more daily physical activity), would be tied more to total physical activity as measured in this study.

Links Between the Studies

Both Study 1 and Study 2 tested the core component of the tripartite efficacy model as proposed by Lent and Lopez (2002) and tested by Jackson and colleagues in various physical activity settings. However, in this dissertation, the population and social setting for testing of the tripartite efficacy model were fundamentally different from previous work examining relational efficacy ties. Both of these studies used community adults as subjects. Work in the current physical activity tripartite efficacy literature relies heavily on high school and colleges students, as well as athlete populations. The salient social information that an adult attends to compared to a young athlete or high school student might be different and should be considered in future tripartite efficacy research. Also unique to this dissertation is the close interpersonal relationship between the personal trainer and client, namely that it is a one-on-one relationship with high interdependence. Previous work in the physical activity literature using variations of path analysis has not examined these close relationships but the work in these areas has focused on larger group settings with either a team or a coach (e.g. Jackson et al., 2012; Saville & Bray, 2016). However, with these fundamental differences, the core of the tripartite model was consistent with previous research. In the two studies presented in this dissertation, both RISE and other-efficacy predicted self-efficacy beliefs. These findings in new contexts have been called

for in the literature because they bolster the generalizability of the tripartite efficacy framework (Jackson et al., 2015).

In the two studies, it appears that the more salient relational efficacy construct depends largely on the outcome of interest. In Study 1, RISE was a significant predictor of all of the relational outcomes proposed in the model. However, Study 2 provided evidence that if the outcomes of interest are behavioral in nature, other-efficacy is likely to predict the behavioral outcomes. This finding is unique to the relational efficacy literature and warrants future investigation. RISE is conceived of being a product of both verbal and non-verbal communication, and that the interpersonal information exchanged between two people likely informs this belief (Jackson et al., 2015). Due to RISE being largely informed by interpersonal relationship qualities, it makes sense conceptually that it would be strongly related to relational outcomes. Clients who pick up meaningful and purposeful cues from their personal trainers that inform their self-efficacy beliefs are much more likely to feel committed to a relationship, close to their trainer, and have higher perceptions of complementarity in the relationship. However, the tie between other-efficacy and behavioral outcomes was more prominent in the second study. Clients who viewed their personal trainers as highly capable were more likely to work hard during a session. Perhaps, just a perception of expertise makes people more open to difficult, challenging, and effortful activities in the physical domain. Although it warrants noting that there was a significant pathway between other-efficacy and complementarity in Study 1. This finding lends support to the findings in Study 2 because complementarity is conceptualized as the behavioral component of interpersonal relationship. Also, there was a significant indirect effect between RISE and in-session effort through self-efficacy beliefs. I do not intend to say that RISE is only tied to relational components and other-efficacy is only tied to the behavioral components

of the relationship, but that the findings from these two studies might shine some light on how these beliefs shape behavioral and relational outcomes.

Moving the Tripartite Efficacy Framework Further

The studies presented in this dissertation provide another unique social context where the tripartite efficacy framework is largely supported. Personal trainer-client relationships are commonly one-on-one relationships, and they consist predominantly of adults who work with personal trainers. These populations were novel to the field. There have still been calls for researchers to push this framework into other health and physical activity related contexts. With differing contexts, the focal point of RISE beliefs could change, presumably having RISE perceptions from many different target individuals. For example, on a youth sport team, a single athlete could have RISE beliefs about what their coach thinks about their performance, RISE beliefs stemming from peer interaction, and RISE beliefs stemming from their parental influence and engagement. Each source could provide valuable information that could bolster or hinder the development of self-efficacy in this context. Also, the target individual who provides the most salient information could change as the athlete develops over time.

Future research is warranted at the beginning of naturally occurring relationships. Most of the tripartite efficacy literature examines already intact groups. Examining groups from the start of a relationship might shed some insight into the behaviors, thoughts, and affective experiences that shape RISE and other-efficacy at a critical time in relationship development. Presumably the relationships studied in this dissertation were largely perceived as positive experiences by the client who was being asked. If the experiences were not perceived as positive, the client would likely terminate the relationship**.** In the case of the two studies presented in this dissertation, clients might stay in a relationship if they do not get along with a trainer, as long as

they are seeing physical results from their participation in the relationship. The opposite could also be true, where clients might continue to work with a personal trainer, even if they are not getting closer to their fitness goals because they feel strong relationship ties to the personal trainer. An investigation of how these relational efficacy beliefs change over longer time frames would help to answer these questions.

Very little work to date has examined the tripartite efficacy model using experimental designs. Although it could be expensive and time-consuming, these efforts would further bolster the constructs' usefulness in the field. Some research has manipulated other-efficacy beliefs (Priebe, Flora, Ferguson, & Anderson, 2012) and noted that perceptions of other-efficacy do influence outcomes in fitness settings. Sparks and colleagues (2017) provided education to physical educators about promoting a relatedness supportive environment in their classrooms and noted an increase in RISE after working with the trained physical educator compared to a physical educator who was in the control condition. However, there is not current research that attempts to manipulate both RISE and other-efficacy in the same study. Using a 2 x 2 design (high/low RISE vs. high/low other-efficacy) would greatly benefit this line of research and provide more evidence about the relative strengths and salience of these constructs in physical activity settings.

Conclusion

This dissertation provides evidence about the utility of the tripartite efficacy model in personal trainer-client relationships. Studies 1 and 2 provided evidence that both RISE and other-efficacy are useful social efficacy beliefs that personal trainers can harness to bolster their client's self-efficacy beliefs. In Study 1, RISE beliefs were especially salient in predicting perceptions of closeness, commitment, and complementarity. Perceptions of trust were a noted

antecedent of both RISE and other-efficacy. Study 2 extended findings of the core tripartite model to examine potential behavioral outcomes of the relationship, in-session effort and total physical activity. While physical activity was not significantly associated with the tripartite efficacy constructs, in-session effort had direct links with other-efficacy and self-efficacy. Indirect effects noted that both RISE and other-efficacy do influence in-session effort through self-efficacy to impact in-session effort. Based on the findings from the studies in this dissertation, RISE might be more salient for social outcomes of a relationship, whereas other-efficacy might be more salient for behavioral outcomes. Overall, this dissertation provided additional support for the tripartite efficacy model in a unique social context and extended the theoretical antecedents and outcomes of the proposed model.

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