

AN EXPLORATORY STUDY OF THE RELATIONSHIP BETWEEN EXERCISE
LEADER SOURCE CREDIBILITY, PARTICIPANT SELF-EFFICACY, AND
EXERCISE ADHERENCE

A Thesis

by

KACY LANE GADBERRY

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

August 2009

Major Subject: Communication

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ABSTRACT

An Exploratory Study of the Relationship Between Exercise Leader Source
Credibility, Participant Self-Efficacy, and Exercise Adherence.

August (2009)

Kacy Lane Gadberry, B.A., Oklahoma State University

Chair of Advisory Committee: Dr. Michael T. Stephenson

Using Social Cognitive Theory, Social Identity Theory, and Source Credibility, this study examined the role of instructor source credibility as related to exercise adherence. A one-time survey was given to participants of an eight-week exercise program. Hierarchical multiple linear regression was used to test hypotheses. Results indicate that perceived expertise was a significant predictor of intentions to adhere to class. Additionally, this study shows how Social Identity Theory can predict lower levels of identification in an exercise context. The scales used to test source credibility were shown to be accurate measures of perceived instructor expertise, likeability, and enthusiasm. Thus, these scales can be used to examine this subject in later studies.

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CHAPTER I

INTRODUCTION

While the Food and Drug Administration's 2005 guidelines stipulate that people should engage in 30 minutes of physical activity most days, 60% of American adults are not active on a regular basis, and 25% of the adult population is not active at all (Center for Disease Control, 2007). According to the U.S. Department of Health and Human Services, *regular* cardio aerobic activity can reduce the risk of coronary heart disease, reduce blood pressure, help maintain or control weight, and foster improvements in mood and well-being (U.S. Department of Health and Human Services, 2007). The key to obtaining these benefits is adhering to an exercise regime over a sustained period of time. According to Winger (1998), "adherence is what allows a person to attain the physical benefits of exercise, because only with continued engagement are the physical and physiological benefits of exercise attained" (p. 13). Furthermore, Pryor and Kraines (1996) found that a minimum of eight to twelve weeks is required for physiological changes to occur as a result of participation in a regular physical activity program. Only with adherence and sustained effort can the benefits of exercise be actualized.

The benefits of aerobic exercise can be attained in individual exercise endeavors such as running, biking, walking, and swimming. However, according to Dishman (1996) people who exercise in groups are more likely to continue exercising.

This thesis follows the style of *Health Communication*.

Dishman's (1996) meta-analysis synthesized the results from 127 studies containing 131,156 participants. The results showed that exercising in the presence of others was associated with superior exercise adherence. Dishman defined adherence in that study as "attending at least 75% of the regularly scheduled exercise sessions" (p. 710). Burke, Carron, and Eys (2006) also concluded that exercising in the form of a "close-knit cohesive group" represented the optimal environment for physical activity (p. 27). Individuals in the cohesive group displayed higher levels of social interaction, perceived quality of life, physiological effectiveness, and adherence.

However, while exercising amongst groups is beneficial for adherence, half of individuals who initiate a supervised exercise program such as an instructional class drop out within the first six months (Robison & Rogers, 1994). Furthermore, several studies with adult fitness classes have shown dropout rates of 50% or higher (Gale, Eckhoff, Mogel, & Rodnick, 1984; Massie & Shepherd, 1971). What is causing this drop off in exercise class settings? What factors undergird this attrition? Furthermore, how can we adapt programs to raise adherence rates?

Dishman (1993) categorized the determinants of adherence in exercise classes into three categories: personal attributes (e.g. intrinsic motivation), environmental or social factors (e.g. geographic location of the exercise facility, number of acquaintances who attend similar classes), and characteristics of the physical activity itself (e.g. cardiovascular demands, difficulty). Recent investigations emphasized the exercise course instructor as a key component in keeping participants in an exercise program (Laitakari & Miilunpalo, 1998; Nupponen & Laukkanen, 1998; Remers, Widmeyer, Williams, &

Myers, 1995; Rinne & Toropainen, 1998; Vuori, Paronen, & Oja, 1998). Results of these studies show that participants' ratings of perceived competence of their exercise course instructors are determinants of program satisfaction and adherence (Duncan, Duncan, & McAuley, 1993).

Indeed, according to Oldrige (1977), fitness class instructors are the “pivot on which the success or failure of a program depends” (p. 86). Also, Bray, Millen, Eidsness, & Leuzinger (2005) state the “only significant predictor of exercise class attendance for a group of exercisers” was the quality of the instructor (p. 421). A meta-analysis by Carron, Hausenblas, & Mack (1996) examining exercise adherence revealed an average effect size of 0.31 for the leadership-adherence relationship. Furthermore, Bray, Gyurcsik, Culos-Reed, Dawson, & Martin (2001) showed a correlation between exercisers' perceptions of their fitness class instructor and exercise behavior (e.g. attendance, adherence). Perceptions about the fitness instructor were defined as participant's confidence in the instructor's communication, teaching, and motivating capabilities. Additionally, Carron, Hausenblas, and Estabrooks (2003) reported that various cognitive, affective, and behavioral factors of the leader influenced the likelihood of exercisers to continue attending a fitness class.

While Fox, Rejeski, & Gauvin (2000) showed a connection between the behavior of participants (adherence) as related to the class leader, the processes underlying this relationship have yet to be studied. What specifically about the class leader affects the cognition and affect of the participants and thus future exercise behavior?

If most attrition happens in the first few weeks of an exercise program, participants often base a decision to continue attending a class on a quick judgment about the characteristics of the leader. While he or she may verbally encourage participants to continue attending, it may not be what the leader *says* but how the leader is *perceived* which determines if a participant will be persuaded to continue with the class.

In *Blink* (2005), Malcolm Gladwell introduced the concept of *thin slicing*. Thin slicing describes the human capability to make quick judgments on very little information. Cognitive psychologist Gerd Gigerenzer likes to call this kind of processing “fast and frugal” (p. 13). As opposed to *thick slicing*, in which a person has a richer pool of information from which to base decisions, Gladwell argues that much of our cognition is quick, intravenous, and intuitive.

Ambady (1993) illustrated this point when giving university students three ten-second videotapes of a teacher with the volume turned off and found those students rated the effectiveness and credibility of the teacher remarkably similar to students who received just five seconds or even *two* seconds of the same video. Ambady then compared those snap judgments of the instructor to evaluations of those same professors after a full semester of classes. She found that they were statistically the same. A person watching a two second clip of a teacher he or she has never met will reach conclusions on the effectiveness and credibility of that teacher that are very similar to judgments made by students who had taken the teacher’s class for an entire semester.

The Ambady (1993) study is just one example of the power of a “receiver” to quickly judge a “source” based on little information (remember the participants could not actually hear what the teacher was saying). Thin slicing also occurs in the context of an exercise class. Many participants have never taken a class, show up the first day and make a quick assessment about the instructor’s credibility. This assessment usually then leads to a decision about whether to continue attending the class. While there are other factors which could affect a participant’s assessment of the course (i.e. music, time of day, type of exercise), this study will focus on the relationship between perceptions of the leader and class adherence.

McGuire (1978) identified five components of the persuasive communication contexts: source, message, channel, receiver, and destination variables. In the context of an exercise class, the instructor (source) is communicating multiple messages, which are intended for the participants (receiver). Some messages are verbal and include information (i.e. choreographic cues, correct form, etc.), encouragement (verbal reinforcement, affirmation), and commands (appeals to continue working, imperatives to discontinue incorrect actions). Some messages are nonverbal which include body language, facial expression, and physique. Yet, as stated earlier, instructors have a very short window of time in which to communicate these various “messages.” Furthermore, the overall judgment of the instructor is often made on a *thin slice* of information gathered after attending only one or two class sessions. In other words, how the recipient of the message (the class participant) perceives the source (instructor) may determine how likely the recipient will be persuaded to adhere to the class.

According to Pornpitakpan (2004), source variables comprise three main aspects: credibility, attractiveness, and power. The dimensions of source credibility have been commonly identified to consist of expertise and trustworthiness. *Expertise* refers to the extent to which a speaker is perceived to be capable of making correct assertions, and *trustworthiness* refers to the degree to which an audience perceives the assertions made by a communicator to be ones that the speaker considers valid (Hovland, 1951). Other dimensions of source credibility have been proposed by many factor-analytic studies. Yoon, Kim, and Kim (1998) added attractiveness not as just a source variable but also as a specific dimension of credibility. Perloff (2003) states that social attractiveness is composed of such elements as likability, similarity, and physical fitness. Since the context of an exercise class is unique, it is perhaps necessary to draw from different elements of the source credibility literature. For the purposes of this study, source credibility will be operationalized as a function of expertise, physical attractiveness, likeability, and enthusiasm.

While the specific dimensions of source credibility have been a point of contention for communication scholars (Berlo & Lemert, 1961; Giffin, 1996; Holdridge, 1972; Leathers, 1992; McCroskey & Jensen, 1975; Pornpitakpan, 2004), the results of studies in which a source is deemed “highly credible” are similar. In general, a highly credible source is commonly found to induce more persuasion toward the advocacy than a low-credibility one (Horai, Naccari, & Fatoullah, 1974; Hovland, 1951; Johnson, Torvicia, & Poprick, 1968; Kelman & Hovland, 1953).

In an exercise class setting, the instructor (source) is working to persuade the participants to continue attending the class (the advocacy). At times this is done directly through strategic verbal communication. For example, an instructor might encourage students to “make sure to attend next Thursday for another great class.” However, this persuasion can also be implicit. An instructor who models a healthy lifestyle, fit body, and cheerful disposition may indirectly persuade participants to continue attending class in order to receive the same results.

Thus, the current study seeks to investigate which dimension of source credibility is most important for determining the persuasive impact of the source to continue adhering to an exercise class. To date, only one study has examined the impact of source factors on the promotion of physical exercise (Rosen, 2000). Thus, the present study is meant to contribute to the body of literature concerning source credibility in a health context. Additionally, since this is largely a psychological process involving cognition, which then influences behavior, social cognitive theory will be used to analyze which variables mediate the relationship between perceptions of the source and exercise participant behavior. Specifically, this study will seek to answer these questions: what about the instructor (the source) affects how participants think about the instructor (cognitive processing) and thus receive his or her messages? How do perceptions about the instructor (source) in turn affect a participant’s (recipient) intentions to adhere to the exercise class? What factors mediate the evaluation of the source and subsequent adherence?

CHAPTER II

THEORETICAL FRAMEWORK

Social Cognitive Theory

Originally hypothesized by Skinner and Watson, two behaviorists, Social Learning Theory predicts that people learn and thus adapt behavior due to operant conditioning (Miller, 2005). If an action is rewarded (positive reinforcement), the action is repeated in the expectation that similar positive outcomes will result. A child asks politely for an ice cream cone and is rewarded with the treat. Thus, the child learns that asking politely is positively rewarded. Conversely, if an action is punished (negative reinforcement), the action is avoided. A child who gets spanked after hitting her brother learns that hitting is an unacceptable behavior and thus avoids future punishment.

However, not all learning takes place directly. Instead, Bandura (1977) advanced Social Learning Theory one step further by arguing that much social learning occurs vicariously through observing models in one's immediate environment and the resulting outcomes of the model's behavior. Such observant, vicarious learning requires more cognition than the simple operant conditioning model proposed by Skinner and Watson. For example, if an individual touches a hot stove, she pulls her hand away and learns with little cognitive effort that repeating the action results in a painful burn. However, if a student observes another student receiving verbal praise from a teacher, student one deduces that repeating the action of student two will likely result in a similar result. Such effortful, complex thinking is an example of advanced cognitive processing.

Bandura argued that such vicarious learning goes beyond the scope of social learning theory. Thus, Bandura's additions to and alterations of SLT resulted in him renaming it Social Cognitive Theory (SCT).

SCT can be used to explain exercise behavior (or lack of behavior in the case of exercise attrition). SCT has been used to account for various health behaviors from smoking cessation, weight control, and exercise to nutrition, alcohol abuse, and contraception usage (Bandura, 1992; Catania, Kegeles, & Coates, 1990; Stretcher, DeVellis, Becker, & Rosenstock, 1986).

SCT assumes continual interaction between an individual's cognitive processes, behavior, and the environment (Bandura, 1986). This continual, dynamic occurrence is called "emergent interactive agency," and flows from Bandura's (1989) assertion that people are "neither autonomous agents nor simply mechanical conveyors of animating environmental influences" (p. 1175). Instead, individuals are continually determining behavior based upon past experiences, social conditions, and environmental cues.

SCT posits that people learn by observing friends, family members, acquaintances, and media figures and receive rewards or punishments based upon their actions. If an individual observes a model being rewarded for a particular behavior, the individual expects similar results if he or she repeats a similar action. This is referred to as a disinhibitory effect. A woman watches her coworker lose twenty pounds after taking up kickboxing, thus she is motivated to attempt kickboxing on the assumption that she too will lose weight. Conversely, a student observes a friend develop lung cancer after smoking for twenty years, and thus vows never to smoke (an inhibitory effect).

Indeed, virtually all behavioral, cognitive, and affective learning from direct experience can be achieved vicariously by observing people's actions and their consequences for them (Bandura, 1986). These role models within an individual's environment then affect his or her cognitive or behavioral learning.

“Learning via observation” is a source of information that promotes both cognitive and behavioral development. By observing others in the social environment, people “can acquire a spectrum of skills and expectations” (Maibach, 1993, p. 540). For example, a participant who attends an exercise class is impacted by the other people in the class. Since most of the class requires an individual to continually observe the instructor, it would follow that the instructor's modeling has direct impact on the cognitive processes of the class participant. As mentioned earlier, this higher level of reasoning takes into account the results of the model's behavior and thus predicts how similar action(s) results in similar outcomes.

Obviously, a person can learn correct form and technique from an instructor. Yet, an individual also has the capacity to learn other less explicit information. For example, a participant can learn that exercising on a continual basis (like the instructor) results in better overall health and a pleasant disposition. A participant can learn that adhering to a program (as demonstrated by the instructor) often results in a toned physique and strong body. Thus, along with learning the proper form for a roundhouse kick or “crow” pose, a participant vicariously learns other implicit information about the ramifications of continually engaging in a particular exercise. One learns not just how to perform a series

of exercises, but also what physical and mental benefits will occur as a result of performing these exercises.

However, not all exercise instructors are competent role models. Lack of expertise, physical fitness, etc. can contribute to class participants perceiving a low level of credibility. According to Bandura, learning is *enhanced* when credible role models are observed (Bandura, 1977, 1986). Indeed, participants *thin slice* an instructor and quickly deduce his or her credibility, usually within the first one or two classes. Thus, how can a model be deemed credible in a situation in which the receiver only has a brief encounter with the model? What characteristics of the source contribute to the idea of credibility?

For answers to those questions, the persuasion literature concerning source credibility will be considered. Although Social Cognitive Theory is primarily a learning theory, the concept of persuasion is germane to the study of exercise adherence because participants are engaging in multiple cognitive processes. Specifically, participants are *learning* new information which will determine if they will be *persuaded* to continue attending class.

For one, class members are quickly assessing the credibility of the instructor (e.g. does the instructor have a fit body, an enthusiastic personality, and expert knowledge?). Additionally, members are vicariously *learning* what happens after an individual engages in the particular exercise over a long period of time (like the instructor) (e.g. Will doing kickboxing three times a week result in a low level of body fat and cheerful disposition as displayed by the instructor?). Also, members are determining if they, too, could engage in the class over a sustained period of time (e.g. is it too difficult? The

instructor can do it, so perhaps he/she can as well?). Finally, the participant might highly identify with the instructor and thus be more likely to adhere to the class (e.g. If a young black man teaches yoga, perhaps it is socially acceptable for young black men to participate in this class as well). Thus, what might appear to be a simple exchange of information between instructor and participant is actually an endeavor characterized by much effortful cognition.

While participants are engaged in a host of cognitive processes, many of them stem from thoughts about the instructor. Since a central goal of the instructor is to persuade participants to continue attending, the relationship between perceived source credibility and intentions to adhere to an exercise class will be investigated.

Source Credibility

The extant literature examining source credibility is rather inconsistent in terms of *which* variables contribute to a source being perceived as credible. McCroskey and Jensen (1975) reported the results of tests that used a 25-item scale designed to measure five dimensions of source credibility. Factor analysis of data from three student samples yielded a five-factor solution: competence, character, sociability, composure, and extroversion. Leathers (1992) created the Leathers Personal Credibility Scale in which credibility was operationalized as a function of competence, trustworthiness, and dynamism. Holdridge (1972) investigated students' perceptions of instructors using sociability, extroversion, competence, and composure as the four dimensions of source credibility. Giffin (1966) stated the five factors that compose the construct of source

credibility are: expertise, character, good will, dynamism, and personal attraction, likeability, or affiliation. Berlo and Lemert (1961) studied the perceived credibility of public figures and interpersonal sources using trustworthiness, competence, dynamism, and sociality. Pornpitakpan (2004) identified the dimensions of credibility to consist of expertise and trustworthiness (p. 253).

With these studies using different measures, it is difficult to generalize which constructs contribute to source credibility. Furthermore, there has only been one study, which has examined the perceived credibility of fitness instructors (Jones, Sinclair, & Courneya, 2003). However, the Jones et al. study didn't examine the different dimensions of source credibility. Instead, the researchers asked participants about the overall perceived credibility of the instructor.

Most of the previous source credibility studies have examined politicians, classroom teachers, media personalities, and family members. However, the context of each of these sources has great bearing on what contributes to perceptions of credibility. According to Holdridge (1972), the *type* of source studied will determine which scales and dimensions need to be examined. For instance, political leaders are deemed credible if they appear powerful, intelligent, and trustworthy. Fitness instructors, on the hand, are judged by a different standard.

In order to deduce which elements are most pertinent to an instructor's credibility, exercise literature in which class participants identify instructor preferences will be reviewed. Drawing from this literature, the factors contributing to an exercise instructor's credibility will be offered.

Source Credibility Dimension: Physical Fitness

Chaiken (1986) points out, “heightened physical attractiveness generally enhances one’s effectiveness as a social influence agent” (p. 150). Physical fitness has particular bearing to the context of exercise class participation. Frederick and Morrison (1996) conducted a qualitative study in which fitness class members were asked to self-report exercise habits. Female subjects were more likely to be involved in group fitness programs, e.g. aerobics, than individual or team sports. As a result, women were likely to exercise in settings in which there were ample opportunities to compare themselves with others. Overall, women reported that the physical appearance of other people, particularly the instructor, in the fitness program was often a motivational factor determining their desire to continue with the exercise plan. Evans, Cotter, & Roy (2005) found a similar result when surveying 171 female exercise class participants.

Participants were asked to select qualities from a list that they perceived to be important in a fitness leader. A total of 86.5% responded that physical fitness was important. In the qualitative portion of that study, participants indicated a preference for a physically fit instructor “because they view this person as a role model and someone whose general physique they can strive to attain themselves” (p. 264). Such results follow Bandura (2001) assertion that a model’s physical attractiveness can play an important role in identification between the model and the observer, and act as an indirect influence. Puckett, Petty, Cacioppo, and Fisher (1983) found that source attractiveness increased the motivation of a receiver to process a message and subsequently alter behavior.

A few disclaimers here: for one, physical attractiveness is different from physical fitness. A chain-smoking supermodel might meet the criteria for Western beauty, yet still be very physically unfit. However, the two concepts are not entirely unrelated. A source can be attractive and not particularly physically fit, yet if a source is perceived as physically fit, this would likely increase overall perceived physical attractiveness. Thus, physical fitness can be conceived as one aspect of physical attractiveness (a major factor in determining source credibility).

Also, while a person can be biologically “fit” (i.e. low blood pressure, low triglyceride count, low cholesterol) and still appear “unfit” to class participants (i.e. slightly overweight), the outward indications of physical fitness are important. According to Perloff (2008), “physical fitness can be a deciding source factor when the communicator’s physical appeal is relevant to the product or advocacy” (p. 237). Since an instructor is attempting to persuade class members to continue coming to exercise class (i.e. the advocacy), it would follow that his or her outward physical fitness would be one dimension of overall source credibility.

Source Credibility Dimension: Expertise

Additionally, the perceived physical fitness of an instructor is also tied to perceptions of expertise. Vogel (2000) surveyed exercise class participants and concluded that an “exercise instructors’ physique may be judged as a reflection on his or her professional knowledge and expertise... instructors who appeared to be fit were judged as more credible” (p. 190). Perceptions of expertise are key when studying the

overall credibility of a source. As Heesacker, Petty, and Cacioppo (1983) concluded, receivers who deemed a source to be “expert” were more motivated to process the source’s message.

While perceptions of expertise are based on physical appearance, instructors can also exhibit expertise by identifying prior certification, leading the class well, staying on task, varying the workout, demonstrating proper technique, explaining workout jargon, etc.

In the Evans et al. (2005) study, 171 students were surveyed to identify preferred characteristics of fitness instructors. 80.1% of participants reported “ability to cue well/show proper technique” as important, followed by 72.5% who indicated “ability to lead a variety of activities” and 57.3% preferring a “certified instructor” (p. 262). Each of these three factors apparently contributes to the perceived expertise of the instructor.

Indeed a leader’s occupation, training, and amount of experience play a large role in how others perceive the leader’s credibility (Hurwitz, Miron, & Johnson, 1992; Swenson, Nash, & Roos, 1984). For an exercise instructor, “expert” knowledge is attained through engaging in workshops, attending seminars, and completing certification programs. Instructors can inform class members about their “expert” knowledge by distributing written materials with the information, verbally informing participants, or demonstrating advanced knowledge and technique used in the class. From the reviewed exercise and persuasion literature, it is clear that perceptions of expertise are a key component to source credibility. Therefore, this study will include perceived expertise as a dimension of fitness instructor source credibility.

Source Credibility Dimension: Likeability

Evans and Kennedy (1993) interviewed exercise class participants concerning the reasons for continually engaging in a particular class. The researchers found that, “instructors, in their leadership role, have the power to shape the psychosocial atmosphere of their classes by their attitudes and behaviors, which in turn has an effect on exercisers” (p. 90). Participants who interpersonally *liked* an instructor were more likely to continuing attending his or her class (p. 91).

In a qualitative study by Gillett (1988), 38 overweight women participated in a 16-week exercise program. Adherence to the program (defined as missing less than two sessions) was ninety-four percent. Interviews conducted after the program revealed that the likeability of the instructor directly influenced participants’ attendance. Gillett found that if participants *liked* the exercise leader, they were more inclined to be motivated to continue attending classes from that instructor (p. 28).

Such findings from qualitative studies mirror the assertion of communication scholars. Likable communicators can change attitudes (Rhoads & Cialdini, 2002). According to Perloff (2008), “just being likable can help a communicator achieve his or her goals” (p. 233). Likable sources convey that they have the receivers’ best interests at heart, which communicates goodwill. Goodwill is a quality that can help sources achieve practical goals.

While likeability is a difficult construct to operationalize, the general idea that a person will be more persuaded by a message coming from a likeable source is somewhat

intuitive. The brilliant politician might have an excellent handle on foreign policy and economics, yet still lose an election because he or she isn't "liked" by voters.

In an exercise class context, a participant who generally *likes* the instructor will likely be more persuaded to adhere to the class. Recall again that participants often decide if they like an instructor based on scant information. Thus, while feelings and perceptions of the source may change as the class progresses, the degree to which a participant initially likes an instructor is germane to an overall assessment of the instructor's credibility.

Source Credibility Dimension: Enthusiasm

While 86.5% of the participants in the Frederick and Morrison (1996) indicated that physical fitness was important in an instructor, 90.1% reported that enthusiasm was even more critical (p. 262). In Gillett's study (1988), when asked to identify reasons for adhering to the class, one participant said, "the instructor was so enthusiastic and was always smiling, and it lifted me up" (p. 28). Another woman commented, "the teacher makes us feel good about ourselves. I think it's her belief and enthusiasm, her 'you-can-do-it' attitude that keeps us going" (p. 28). Laverie (1998) found that individuals prefer enthusiastic fitness instructors because enthusiasm helps motivate class members to work harder during class. A participant in that study stated, "in class I know I will keep going, because if I were on the Stairmaster or treadmill, you could stop whenever you wanted. If the instructor is very enthusiastic, I feel kind of inspired to continue" (p. 290).

While one could argue that enthusiasm is a dimension of likability or even expertise, the unique nature of an exercise class and the power of enthusiasm to motivate class participants make it stand alone. For example, an instructor can be an expert, physically fit, likeable person, but also apathetic. Such apathy would demonstrate a lack of instructor enthusiasm, which could in turn affect the class members' motivation.

Conversely, Noble and Cox (1983) administered a survey to 1,382 undergraduate students at Kansas State University enrolled in lifetime sport classes (e.g. yoga, spinning, aerobics). Researchers found that instructor enthusiasm was the most predictive factor affecting course participation and attendance.

While the dimensions of source credibility have been greatly debated in extant literature, for the purposes of this study, credibility will be operationalized as: expertise, physical fitness, likeability, and enthusiasm. However, it is still unclear which of these elements has the greatest bearing on the persuasive power of the source to motivate participants to adhere to the class. Therefore, the first research question for the study is:

RQ 1: Which dimension of source credibility is the best predictor of intentions to adhere to the exercise?

Social Identity Theory

Social Cognitive Theory posits that learning is enhanced when an individual perceives a source as highly credible. Additionally, another tenet of SCT is the idea of identification. Bandura (1977) argues that if an individual feels a sense of identification with a model or source, social learning is more likely to occur. According to White

(1972), identification “springs from wanting to be and trying to be like the model with respect to some broader quality” (p. 252).

Since the instructor is the center of attention in an exercise class, it would follow that participants would compare themselves with him or her. In a qualitative study by Laverie (1998), fifteen regular aerobic class participants were interviewed about their motives for continuing to exercise, how comparison and identification took place during an aerobic class, and what factors contributed to enjoyment of a class. Over half of the participants compared themselves to the instructor- both concerning his or her performance and appearance. One subject stated, “you have someone to watch, especially the instructor who’s usually in wonderful shape and you kind of envy her figure; so it’s like if you watch that and kind of push yourself, and it makes you think that’s the way you want to look, then it makes you think that’s the way you want to look, then it’s kind of an extra kick” (p. 286). Another subject stated, “I compare myself to the instructor. I don’t really care about the other girls because everyone has a different level. I care about the teacher and how I am doing compared to her” (p. 293).

Reacting to others in the social environment is similar to Bandura’s concept of reciprocal determinism. This is where a person acts based on individual factors and social/ environmental cues, receives a response from that environment, adjusts behavior, acts again, and so on (Bandura, 1986).

The social nature of participation in an exercise class is likely to bring about comparisons with others in the class, and the instructor in particular. According to

Laverie (1998), “social comparisons are likely in exercise classes, as they are a personal activity done in the presence of others” (p. 279).

To help understand how comparing oneself to another encourages (or discourages) identification with a model, social identity theory has been used in previous studies. While SCT touches upon the concept of identification, SIT offers a more in-depth explanation.

According to Laverie (1998), “Social Identity Theory offers a unique lens through which to view motivations for participation in aerobic classes.” This perspective focuses on the importance of the activity to the individual, with consideration of the personal and social forces that feed this importance...particularly the importance of social comparisons in this context” (p. 280). Individuals who participate in exercise classes are likely to compare their performance to those of others (Dimanche & Samdal, 1994), especially when activities take place in highly social environments (Frederick et al., 1994).

Kleine, Kleine, and Kernan (1993) explain that Social Identity Theory is built on the concept that life consists of *doing* (recreating, working, eating), that *doing* is largely social in nature, and when *doing*, social comparisons naturally occur (p. 224). Thus, when participants attend an exercise class, the social setting becomes a place in which comparison and identification can mutually occur. A young, college-aged woman attends a step class in which the instructor is also young, female, and college-aged. Social Identity Theory along with Social Cognitive Theory would predict that since the

participant identifies with the instructor, the participant would compare herself with the instructor. Therefore, the first hypothesis for this study is:

H1: Identification with an exercise class instructor will be positively correlated with how closely the individual engages in social comparison with the instructor.

While SIT and SCT argue that identification with a model will increase the potential for learning, individuals are selective in whom they identify with and thus model. Bandura (1989) holds that if a model is perceived as highly credible, an observer will have a heightened sense that he or she can complete a similar action. Individuals look to credible sources to facilitate behavior change. An exercise class participant who deems an instructor as *credible* is more likely to identify with the model and thus imitate his or her behavior *and* be more persuaded to accept his or her message(s) to adhere to the class. Therefore, the second hypothesis and third hypothesis for this study are:

H2: Perceptions of the instructor's credibility will be positively related to the amount of social identification.

H3: Individuals who highly identify with an exercise instructor will be more likely to intend to adhere to an exercise program.

However, identification with a source and believing his or her message will not necessarily translate into behavior change. A person might highly identify with Michael Phelps, observe the benefits he receives (physically, mentally, financially) from swimming seven hours a day, yet not be persuaded to engage in similar behavior. Instead, an individual must have the sense that he or she has the ability to perform a given behavior before the individual changes his or her behavior.

As stated earlier, the instructor is seeking to *persuade* students to adhere to the exercise class, and well as *teach* students the benefits of engaging in regular physical activity. According to SCT, the effect of identification on social learning is moderated by the extent to which the individual feels a sense of self-efficacy about performing the modeled behavior (Bandura, 1996).

H4: There will be an interaction between self-efficacy and identification on intentions to adhere to the exercise class. Specifically, for participants who highly identify with the instructor, the effect of identification on intentions to adhere should be enhanced by self-efficacy. For those with little identification with the instructor, the effect of identification on intentions to adhere will not be enhanced by self-efficacy.

Self-Efficacy

Self-efficacy is defined as people's beliefs in their capabilities to achieve different levels of performance attainment (Bandura, 1977). Self-efficacy is a "pivotal concept in social cognitive theory in that it mediates between what people know and what they actually apply" (Maibach, 1993, p. 519). Bandura (1986) holds that individual self-efficacy (i.e., one's confidence in performing a particular behavior) is the *single most powerful* personal characteristic that determines behavior change. In the exercise domain, much research has proven the impact self-efficacy has on exercise behavior, especially adherence.

Dzewaltowski (1994) found that the reciprocal interaction (referred to previously as reciprocal determinism) between the environment and individual cognitive thought

processes (i.e. self-efficacy, outcome expectations and expectancies) heavily influences participation in physical activity. Moreover, Gyurcisk, Estabrooks, and Frahm-Templar (2003) found a positive correlation between self-efficacy and aquatic exercise attendance ($r = .22$) for 216 participants. Dishman, Motl, Saunders, Felton, Ward, & Dowda (2004) showed that increased self-efficacy results in increased physical activity in a population of adolescent girls. Also, Guillot, Kilpatrick, Herbert, and Hollander (2004) concluded that self-efficacy predicted adherence to a cardiac or pulmonary exercise rehabilitation program. Additionally, McAuley, Jerome, Elavsky, Marquez, and Ramsey (2003) showed high self-efficacy to be associated with greater exercise adherence. If an individual has the confidence that he or she can successfully continue attending a class, the individual will likely adhere.

If self-efficacy is a necessary ingredient for exercise adherence and perceptions of the exercise instructor also impact adherence, does self-efficacy mediate the relationship between perceptions of the instructor (i.e. source credibility) and adherence? If so, which particular dimensions of the source have the greatest bearing on self-efficacy? In other words, what specific qualities about the instructor can raise a participant's self-efficacy, which could in turn effect adherence?

Recall that enthusiasm and likeability are both factors determining an instructor's overall credibility. It would logically follow that enthusiastic, encouraging, likeable instructors would motivate participants to both 1) think they have the power to continue attending the class (self-efficacy) and thus 2) continue attending (adherence). Therefore, it is predicted that:

H5: Self-efficacy will mediate the perceptions of the source on intentions to adhere to the class.

Lastly, as discussed earlier, the amount receivers identify with the source also impacts the persuasive power of the instructor. Yet, a receiver must have enough self-efficacy to think that he or she has the ability to perform the action as demonstrated and articulated by the instructor (adhering to a class over an extended period of time) with whom individual is identifying.

Thus, it is hypothesized that:

H6: Higher levels of identification with the source will be positively correlated with high levels of self-efficacy.

Please see Table 1 and Figure 1 for a clearer theoretical overview of the research question and six hypotheses.

TABLE 1
Theoretical Overview

Research Question and Hypotheses	Prediction	Theoretical Explanation
RQ1	Source Credibility → Intentions to Adhere	Social Cognitive Theory predicts that highly credible sources are more persuasive. Instructors are seeking to persuade participants to continue adhering
H1	Identification → Social Comparison	Social Identity Theory predicts that the more one identifies with the instructor, the more social comparison will occur
H2	Source Credibility → Identification	Social Identity Theory predicts that more identification occurs if the source is more credible
H3	Identification → Intentions to Adhere	According to Social Cognitive Theory, if a person identifies with the source she will be more likely to repeat the sources behavior (i.e. adhere to the class)
H4	Self-Efficacy*Identification → Intentions to Adhere	Social Cognitive Theory would predict that the effect of identification on intentions to adhere will be enhanced by the level of self-efficacy
H5	Self-Efficacy Mediates Source Credibility and Intentions to Adhere	Social Cognitive Theory also predicts that self-efficacy mediates the effect of source credibility on intentions to adhere to class
H6	Identification → Self-Efficacy	Social Cognitive Theory together with Social Identity Theory would predict that higher levels of identification would influence self-efficacy

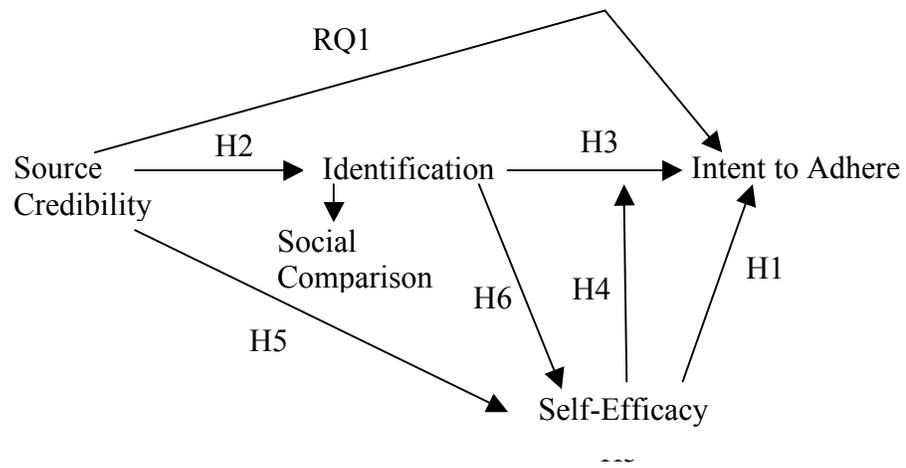


FIGURE 1 Hypothesized structural model.

CHAPTER III

METHOD

Participants

Two hundred and seventy-two participants completed the survey instrument, 55 males (20.1%) and 217 females (79.5%). The participants ages ranged from 17-51, with a mean of 22.7 years, $SD=4.98$; 10.3% of participants indicated that they had taken a course from their instructor previously; 89.7% had not had the instructor previously. The majority of respondents were Caucasian (56.0%), followed by “other” (16.1%), Asian-American (8.8%), Mexican-American (8.8%), Latin-American (4.8%), African-American (3.7%), and Native American (0.4%).

Participants enrolled in noncredit group exercise classes (i.e. yoga, pilates, belly dancing, salsa, hip hop, and ballet) were used as the survey sample. Fourteen classes were surveyed. Participants did not receive credit for the exercise classes, but did pay a one-time fee of \$60 dollars per semester of instruction to the recreation center. Each class session lasted approximately one hour and met two times per week. All class instructors were certified exercise instructors.

Procedures

The study was conducted at the campus recreation facility at Texas A&M University. Institutional Review Board approval was received prior to conducting the study.

Since this study sought to identify which attributes of the source are quickly deduced, a survey was distributed at the conclusion of the first day of the instructional class. A research assistant distributed an information sheet and informed class members of their right to decline participation at any point. Willing participants will then filled out the brief survey (approximately ten minutes). Upon completion of the survey, participants turned the forms into the research assistant and received a debriefing form about the study.

Measures

Source credibility has not been measured in an exercise context, so the measures used were adapted from Hamilton and Mineo (1998) as well as modified from other source credibility studies (McCroskey & McCain, 1974; McCroskey, 1966; Fisher, Ilgen, & Hoyer, 1979; Noble & Cox, 1983). This study focused on perceptions of the source's physical fitness, expertise, likeability, and enthusiasm.

Source Physical Fitness

Each participant's perception of the source's physical fitness was measured. Since no other studies had studied perceived physical fitness specifically, a similar scale developed by McCroskey and McCain (1974) to assess physical attractiveness was modified for this survey. A five-point, Likert-type scale was used where 1= strongly agree and 5= strongly disagree. The items included: (a) I think the instructor is physically fit, (b) The instructor looks healthy, (c) I admire the instructor's physical

appearance, (d) I don't like the way the teacher looks, (e) The instructor is somewhat out of shape, (f) The instructor is not very fit, (g) The instructor wears neat clothes, (h) The clothes the instructor wears are not flattering.

An exploratory factor analysis (principal axis, promax rotation) revealed two dimensions that were reliable. Group1 was made up of three items: *I think the instructor is quite physically fit, the instructor is healthy looking, and I find the instructor very attractive physically*. These items were coded, such that a higher score indicated higher perceived physical attractiveness. Group1 was reliable ($\alpha=0.89$). Scores were summed and averaged ($M= 4.06, SD=.89$). Group2 was made up of three measures: *I don't like the way the teacher looks, the instructor is somewhat out of shape, and the instructor is not very fit*. These items were coded such that a higher score indicated higher perceived physical attractiveness. Group2 was also reliable ($\alpha=0.87$). Scores were summed and averaged ($M=4.33, SD=.89$).

Source Expertise

Each participant's perception of the expertise of the source was measured using a five-point, semantic differential scale (McCroskey 1966). Participants were asked to respond to the prompt: "In regard to this class, I feel the instructor is..." The items included: (a) not knowledgeable/knowledgeable, (b) incompetent/competent, (c) inexpert/expert, (d) not trained/trained, (e) not experienced/experienced, (f) unintelligent/intelligent, (g) uninformed/informed, (h) stupid/bright.

Exploratory factor analysis (principal axis, promax rotation) revealed a unidimensional solution that was reliable ($\alpha=0.94$). Scores were summed and averaged ($M=4.54$, $SD=4.51$) with a higher score indicating a higher perception of instructor expertise.

Source Likeability

Each participant's liking for the source was measured using a five-point, Likert-type scale where 1= strongly agree and 5= strongly disagree (Fisher, Ilgen, & Hoyer, 1979). The items included: (a) This person seems like a very nice person, (b) I believe I would really like this person, (c) I really don't care to get to know this person any better.

Exploratory factor analysis (principal axis, promax rotation) revealed a unidimensional solution that was reliable ($\alpha= 0.85$). Scores were recoded, summed, and averaged ($M=4.12$, $SD=.99$) with a higher score indicating a higher perception of instructor enthusiasm.

Source Enthusiasm

Participant's perceptions of instructor enthusiasm was measured using a five-point, Likert-type scale where 1=strongly agree and 5=strongly disagree. The items included: (a) The instructor seemed enthusiastic about the class exercises, (b) The instructor spoke with expressiveness, (c) The instructor varied the tone of her/his voice, (d) The instructor encouraged me, (e) The instructor motivated me.

Exploratory factor analysis (principal axis, promax rotation) revealed a unidimensional solution that was reliable ($\alpha = .93$). Items were recoded. Scores were summed and averaged ($M = 4.29$, $SD = .87$), with a higher score indicating a higher perception of instructor enthusiasm.

Social Comparison

Each participant's perception of the expertise of the source was measured using a five-point, semantic differential scale (Gilbert, Allan, & Gass, 1996). Participants were asked to respond to the prompt: "In relationship to the instructor, I generally feel..." The items included: (a) inferior/superior, (b) less competent/more competent, (c) likeable/less likeable, (d) less reserved/more reserved, (e) left out/accepted.

An exploratory factor analysis (principal axis, promax rotation) revealed one dimension that was reliable. *SCGroup* was made up of two items, comparison to the instructor based on superiority and competence ($\alpha = .86$). Scores were summed and averaged ($M = 3.04$, $SD = 1.03$) with a higher score indicating a higher perception of social comparison.

Self-Efficacy to Attend Class

Self-efficacy measured participant's beliefs that they can attend class over an extended period of time. Using an aerobic self-efficacy scale developed by Fontaine and Shaw (1995), 5 items measured self-efficacy. Respondents indicated on a 100-point scale, with 0 (not confident at all) and 100 (completely confident), how confident they

were that they could attend at least one exercise class per week for (1) each of the next eight weeks, (2) seven of eight weeks, (3) six of eight weeks, (4) five of eight weeks, and (5) four of eight weeks.

Exploratory factor analysis (principal axis, promax rotation) revealed that no combination of the items resulted in a reliable scale or subscale. Therefore, these items were analyzed individually.

Identification

Using a scale developed by Slater et al. (2003), a four-item scale measured identification with the instructor. For the purpose of this study, participant's perceptions of identification were measured using a five-point, Likert-type scale where 1= strongly agree and 5=strongly disagree. The items include: (a) The instructor is like me, (b) The instructor has the same kind of worries and concerns as I do, (c) The instructor is somebody I like, and (d) The instructor is somebody I can respect.

Exploratory factor analysis (principal axis, promax rotation) revealed a unidimensional solution that was reliable ($\alpha = .78$). Items were recoded. Scores were summed and averaged ($M = 2.50$, $SD = .74$), with a higher score indicating higher perceived identification.

Intent to Exercise

Intention to exercise was measured using a three-item scale used by Courneya et al. (2001) that included: (a) "My goal during the next 8 weeks is to attend my exercise

class...” rated on a 7-point scale from 1 (once in a while) through 4 (most of the time) to 7 (all of the time), (b) “I plan to attend my exercise class twice a week over the next 8 weeks” rated on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree), and (c) “Over the next 8 weeks, my goal is to attend my exercise class ____ times,” rated on an open scale where participants will be asked to insert a number between 0 and 20.

Although the three-item scale was internally consistent in the Courneya study (2001) and produced a Cronbach’s Alpha of .95, exploratory factor analysis (principal axis, promax rotation) revealed that no combination of the items in this study resulted in a reliable scale. Therefore, these items were analyzed individually.

It should be noted that logistical considerations prevented assessing actual adherence to the exercise class. Instead, intentions to adhere were recorded. According to Ajzen’s (1991) theory of planned behavior, a person’s intention to perform a behavior is the central determinant of that behavior because it reflects the level of motivation and willingness to exert effort. Studies by Courneya et al. (1999, 2000) and Courneya and Friedenreich (1997) have shown intention to exercise to be significant determinants of exercise behavior, explaining between 14 % and 36 % of the variance.

Additionally, a typographical error on the study made the third item invalid. Classes met twice a week for eight weeks, meaning that the total number of classes was sixteen, not twenty.

Demographic Information

Demographic Information was gathered for each participant. The participants were asked to indicate their sex, gender, age, and ethnicity.

CHAPTER IV

RESULTS

Research question 1 and hypotheses 1, 2, 3, and 6 were tested using hierarchical multiple regression. Hypothesis 5 was tested using hierarchical moderated multiple regression. Hypothesis 6 tested mediation using Baron and Kenny's approach (1986). For these analyses, it was important to control for potential confounding variables. Therefore, for all analyses, the following covariates were entered into block 1: gender, reported ethnicity, age, taking a class previously from the teacher, if the respondent was taking the researcher's Pilates class, and if the respondent was in a salsa class which met once a week (instead of twice as all the other classes did). The independent variables relevant to each of the hypotheses were entered in block 2. Dependent variables were specified for each analysis.

Research Question One

Research question one sought to understand which dimensions of source credibility (physical fitness, enthusiasm, expertise, and likeability) best predicted intention to adhere to the exercise class. Two measures of intentions to attend exercise class were used as dependent variables: (a) participant's goal to attend class over the next eight weeks, and (b) participant's intentions to attend the class twice a week over the next eight weeks.

First, a hierarchical multiple regression analysis was performed on the first intention dependent variable (*participant's goal to attend class over the next eight weeks*) using the five source credibility predictor variables. The first block, containing the covariates, was statistically significant, $F(6, 260) = 2.69, p < .05, R^2 = .059$. The second block, containing the dimensions of credibility, was also statistically significant, $F(11, 255) = 2.11, p < .05, R^2 = .084$. However, the increase in R^2 from block 1 to block 2 was not statistically significant, $\Delta R^2 = .025, p > .05$, largely because only one of the five predictor variables was significant: *perceptions of the instructor's expertise*: $\beta = .161, p = .014$. Therefore, as perceptions of the instructor's expertise increased, so did participant's goal to attend class over the next eight weeks.

Second, a hierarchical multiple regression analysis was performed on the second intention dependent variable (*participant's goal to attend class twice weekly over the next eight weeks*) using the five predictor variables. The first block, containing the covariates, was statistically significant, $F(6, 253) = 4.144, p < .05, R^2 = .089$. The second block, containing the dimensions of credibility, was also statistically significant, $F(11, 248) = 2.664, p < .05, R^2 = .106$. Finally, the increase in R^2 from block 1 to block 2 was not statistically significant, $\Delta R^2 = .016, p > .05$. Of the five predictor variables, none were significant.

Hypothesis One

Hypothesis one predicted that identification with the instructor would be positively correlated with social comparisons with the instructor. A hierarchical multiple

regression analysis was performed on the social comparison dependent variable (*participant's perceived comparison to the instructor in terms of competence and superiority*) using the identification predictor variable. The first block, containing the covariates, was significant, $F(6, 262) = 2.92, p < .05, R^2 = .06$. The second block, containing the predictor variable was statistically significant, $F(7, 261) = 2.99, p < .05, R^2 = .07$. Finally, the increase in R from block 1 to block 2 was not statistically significant, $\Delta R^2 = .012, p > .05$. The identification predictor variable approached significance as a predictor of *participant's perceived comparison to the instructor*: $\beta = .111, p = .071$.

Hypothesis Two

Hypothesis two predicted that perceptions of the instructor's credibility (physical fitness, enthusiasm, expertise, and likeability) would be positively related to the amount of identification with the instructor.

A hierarchical multiple regression analysis was performed on the identification dependent variable using the five predictor variables. The first block, containing the covariates, was statistically significant, $F(6, 262) = 2.727, p < .05, R^2 = .059$. The second block, containing the dimensions of credibility was statistically significant, $F(11, 257) = 25.09, p < .05, R^2 = .518$. The increase in R^2 from block 1 to block 2 was statistically significant, $\Delta R^2 = .459, p < .05$. Of the five predictor variables, three were significant: *perceptions of the instructor's expertise*, $\beta = -.098, p = .037$, *perceptions of the instructor's enthusiasm*, $\beta = -.471, p = .000$, and *perceptions of the instructor's*

likeability, $\beta = -.277$, $p = .000$. Therefore, as perceptions of instructor's expertise, enthusiasm, and likeability increased, identification with the instructor decreased.

Hypothesis Three

Hypothesis three predicted that participants who highly identified with the exercise instructor would be more likely to attend to the exercise class. Two measures of intentions to adhere were used as dependent variables and each analysis is reported separately.

First, a hierarchical multiple regression analysis was performed on the dependent variable (*participant's goal to attend class over the next 8 weeks*) using the identification predictor variable. The first block, containing the covariates, was significant, $F(6, 261) = 2.721$, $p < .05$, $R^2 = .059$. The second block, containing the identification predictor variable was statistically significant, $F(7, 260) = 2.335$, $p < .05$, $R^2 = .059$. Finally, the increase in R from block 1 to block 2 was not statistically significant, $\Delta R \text{ squared} = .000$, $p > .05$. The identification variable did not predict *participant's goal to attend class over the next 8 weeks*: $\beta = .017$, $p = .781$.

Second, a hierarchical multiple regression analysis was performed on the dependent variable (*participant's goal to attend class twice weekly over the next 8 weeks*) using the identification predictor variable. The first block, containing the covariates, was statistically significant, $F(6, 254) = 4.17$, $p < .05$, $R^2 = .090$. The second block, containing the predictor variable was statistically significant, $F(7, 253) = 3.58$, p

$< .05$, $R^2 = .09$. Finally, the increase in R from block 1 to block 2 was not statistically significant, $\Delta R \text{ squared} = .000$, $p > .05$. Therefore, the identification variable did not predict *participant's goal to attend class twice weekly over the next 8 weeks*: $\beta = .022$, $p = .719$.

Hypothesis Four

Hypothesis four predicted that there would be an interaction between self-efficacy and identification on intentions to adhere to the exercise class. Specifically, it was predicated that an individual who highly identifies with the source would have the greatest amount of self-efficacy to adhere to the class. The five measures of self-efficacy were individually multiplied by the identification variable to create the ten interaction terms. Then, each interaction term was analyzed separately.

The first hierarchical multiple regression analysis was performed on the dependent variable, *participant's goal during the next eight weeks to attend exercise class*. The two main effect variables were entered in block 2, and the interaction term was entered in block 3.

The first block, containing the covariates, was significant, $F(6, 254) = 2.442$, $p < .05$, $R^2 = .055$. The second block, containing the two main effect predictor variables (identification and self-efficacy), was statistically significant, $F(8, 252) = 5.518$, $p < .05$, $R^2 = .149$. The increase in R from block 1 to block 2 was also significant, $\Delta R \text{ squared} = .095$, $p < .05$. The third block, containing the interaction term, was significant, $F(9, 251)$

$=4.885, p < .05, R^2 = .149$. The increase in R from block 2 to block 3 was not significant, $\Delta R \text{ squared} = .000, p > .05$.

Of the predictor variables, self-efficacy (*participant's confidence to attend at least one exercise class per week for each of the next eight weeks*) was a significant predictor of intentions to adhere to the class (*participant's goal during the next eight weeks to attend exercise class*): $\beta = .309, p = .000$. Therefore, as participant's confidence to attend at least one exercise class per week for each of the next eight weeks increased, so did participant's goal during the next eight weeks to attend exercise class. However, the interaction variable in block 3 was not statistically significant.

Second, a hierarchical multiple regression analysis was performed on the dependent variable, *participant's intention to attend exercise class twice a week over the next eight weeks*. The two main effect variables were entered in block 2, and the interaction term was entered in block 3.

The first block, containing the covariates, was significant, $F(6, 247) = 4.316, p < .05, R^2 = .095$. The second block, containing the two main effect predictor variables (identification and self-efficacy), was statistically significant, $F(8, 245) = 6.335, p < .05, R^2 = .171$. The increase in R from block 1 to block 2 was also significant, $\Delta R \text{ squared} = .077, p < .05$. The third block, containing the interaction term, was significant, $F(9, 244) = 5.820, p < .05, R^2 = .177$. The increase in R from block 2 to block 3 was not significant, $\Delta R \text{ squared} = .005, p > .05$.

Of the predictor variables, self-efficacy (*participant's confidence to attend at least one exercise class per week for each of the next eight weeks*) was a significant

predictor of intentions to adhere to the class (*participant's intention to attend the exercise class twice a week over the next eight weeks*): $\beta = .276, p = .000$. Therefore, as participant's confidence to attend at least one exercise class per week for each of the next eight weeks increased, so did participant's intention to attend the exercise class twice a week over the next eight weeks. However, the interaction variable in block 3 was not statistically significant.

Third, a hierarchical multiple regression analysis was performed on the dependent variable, *participant's goal during the next eight weeks to attend exercise class*. The two main effect variables were entered in block 2, and the interaction term was entered in block 3.

The first block, containing the covariates, was significant, $F(6, 239) = 2.523, p < .05, R^2 = .060$. The second block, containing the two main effect predictor variables (identification and self-efficacy (7 of 8 weeks)), was statistically significant, $F(8, 237) = 5.429, p < .05, R^2 = .155$. The increase in R from block 1 to block 2 was also significant, $\Delta R \text{ squared} = .095, p < .05$. The third block, containing the interaction term, was significant, $F(9, 236) = 4.840, p < .05, R^2 = .156$. The increase in R from block 2 to block 3 was not significant, $\Delta R \text{ squared} = .001, p > .05$.

Of the predictor variables, self-efficacy (*participant's confidence to attend at least one exercise class per week for seven of eight week*) was a significant predictor of intentions to adhere to the class (*participant's goal during the next eight weeks to attend exercise class*): $\beta = .309, p = .000$. Therefore, participant's confidence to attend at least one exercise class per week for seven of the next eight weeks increased, so did

participant's goal during the next eight weeks to attend exercise class. However, the interaction variable in block 3 was not statistically significant.

Fourth, a hierarchical multiple regression analysis was performed on the dependent variable, *participant's intention to attend exercise class twice a week over the next eight weeks*. The two main effect variables were entered in block 2, and the interaction term was entered in block 3.

The first block, containing the covariates, was significant, $F(6, 232) = 4.192$, $p < .05$, $R^2 = .098$. The second block, containing the two main effect predictor variables (identification and self-efficacy (7 of 8 weeks)), was statistically significant, $F(8, 230) = 5.388$, $p < .05$, $R^2 = .158$. The increase in R from block 1 to block 2 was also significant, $\Delta R^2 = .060$, $p < .05$. The third block, containing the interaction term, was significant, $F(9, 229) = 4.774$, $p < .05$, $R^2 = .158$. The increase in R from block 2 to block 3 was not significant, $\Delta R^2 = .000$, $p > .05$.

Of the predictor variables, self-efficacy (*participant's confidence to attend at least one exercise class per week for seven of the next eight weeks*) was a significant predictor of intentions to adhere to the class (*participant's intention to attend the exercise class twice a week over the next eight weeks*): $\beta = .246$, $p = .000$. Therefore, as participant's confidence to attend at least one exercise class per week for seven of the next eight weeks increased, so did participant's intention to attend the exercise class twice a week over the next eight weeks. However, the interaction variable in block 3 was not statistically significant.

Fifth, a hierarchical multiple regression analysis was performed on the dependent variable, *participant's goal during the next eight weeks to attend exercise class*. The two main effect variables were entered in block 2, and the interaction term was entered in block 3.

The first block, containing the covariates, was significant, $F(6, 233) = 2.338$, $p < .05$, $R^2 = .057$. The second block, containing the two main effect predictor variables (identification and self-efficacy (6 of 8 weeks)), was statistically significant, $F(8, 231) = 5.669$, $p < .05$, $R^2 = .164$. The increase in R from block 1 to block 2 was also significant, $\Delta R \text{ squared} = .107$, $p < .05$. The third block, containing the interaction term, was significant, $F(9, 230) = 5.093$, $p < .05$, $R^2 = .166$. The increase in R from block 2 to block 3 was not significant, $\Delta R \text{ squared} = .002$, $p > .05$.

Of the predictor variables, self-efficacy (*participant's confidence to attend at least one exercise class per week for six of eight week*) was a significant predictor of intentions to adhere to the class (*participant's goal during the next eight weeks to attend exercise class*): $\beta = .330$, $p = .000$. Therefore, participant's confidence to attend at least one exercise class per week for six of the next eight weeks increased, so did participant's goal during the next eight weeks to attend exercise class. However, the interaction variable in block 3 was not statistically significant.

Sixth, a hierarchical multiple regression analysis was performed on the dependent variable, *participant's intention to attend exercise class twice a week over the next eight weeks*. The two main effect variables were entered in block 2, and the interaction term was entered in block 3.

The first block, containing the covariates, was significant, $F(6, 226) = 4.247$, $p < .05$, $R^2 = .101$. The second block, containing the two main effect predictor variables (identification and self-efficacy (6 of 8 weeks)), was statistically significant, $F(8, 224) = 5.466$, $p < .05$, $R^2 = .163$. The increase in R from block 1 to block 2 was also significant, $\Delta R \text{ squared} = .062$, $p < .05$. The third block, containing the interaction term, was significant, $F(9, 223) = 4.910$, $p < .05$, $R^2 = .165$. The increase in R from block 2 to block 3 was not significant, $\Delta R \text{ squared} = .002$, $p > .05$.

Of the predictor variables, self-efficacy (*participant's confidence to attend at least one exercise class per week for six of the next eight weeks*) was a significant predictor of intentions to adhere to the class (*participant's intention to attend the exercise class twice a week over the next eight weeks*): $\beta = .250$, $p = .000$. Therefore, as participant's confidence to attend at least one exercise class per week for six of the next eight weeks increased, so did participant's intention to attend the exercise class twice a week over the next eight weeks. However, the interaction variable in block 3 was not statistically significant.

Seventh, a hierarchical multiple regression analysis was performed on the dependent variable, *participant's goal during the next eight weeks to attend exercise class*. The two main effect variables were entered in block 2, and the interaction term was entered in block 3.

The first block, containing the covariates, was significant, $F(6, 233) = 2.338$, $p < .05$, $R^2 = .057$. The second block, containing the two main effect predictor variables (identification and self-efficacy (5 of 8 weeks)), was statistically significant, $F(8, 231) =$

4.667, $p < .05$, $R^2 = .139$. The increase in R from block 1 to block 2 was also significant, $\Delta R \text{ squared} = .082$, $p < .05$. The third block, containing the interaction term, was significant, $F(9, 230) = 4.168$, $p < .05$, $R^2 = .140$. The increase in R from block 2 to block 3 was not significant, $\Delta R \text{ squared} = .001$, $p > .05$.

Of the predictor variables, self-efficacy (*participant's confidence to attend at least one exercise class per week for five of eight weeks*) was a significant predictor of intentions to adhere to the class (*participant's goal during the next eight weeks to attend exercise class*): $\beta = .288$, $p = .000$. Therefore, participant's confidence to attend at least one exercise class per week for five of the next eight weeks increased, so did participant's goal during the next eight weeks to attend exercise class. However, the interaction variable in block 3 was not statistically significant.

Eighth, a hierarchical multiple regression analysis was performed on the dependent variable, *participant's intent to attend exercise class twice a week over the next eight weeks*. The two main effect variables were entered in block 2, and the interaction term was entered in block 3.

The first block, containing the covariates, was significant, $F(6, 226) = 4.247$, $p < .05$, $R^2 = .101$. The second block, containing the two main effect predictor variables (identification and self-efficacy (5 of 8 weeks)), was statistically significant, $F(8, 224) = 4.131$, $p < .05$, $R^2 = .129$. The increase in R from block 1 to block 2 was also significant, $\Delta R \text{ squared} = .027$, $p < .05$. The third block, containing the interaction term, was significant, $F(9, 223) = 3.691$, $p < .05$, $R^2 = .130$. The increase in R from block 2 to block 3 was not significant, $\Delta R \text{ squared} = .001$, $p > .05$.

Of the predictor variables, self-efficacy (*participant's confidence to attend at least one exercise class per week for six of the next eight weeks*) was a significant predictor of intentions to adhere to the class (*participant's intention to attend the exercise class twice a week over the next eight weeks*): $\beta = .162, p = .012$. Therefore, as participant's confidence to attend at least one exercise class per week for five of the next eight weeks increased, so did participant's intention to attend the exercise class twice a week over the next eight weeks. However, the interaction variable in block 3 was not statistically significant.

Ninth, a hierarchical multiple regression analysis was performed on the dependent variable, *participant's goal during the next eight weeks to attend exercise class*. The two main effect variables were entered in block 2, and the interaction term was entered in block 3.

The first block, containing the covariates, was significant, $F(6, 232) = 2.377, p < .05, R^2 = .058$. The second block, containing the two main effect predictor variables (identification and self-efficacy (4 of 8 weeks)), was statistically significant, $F(8, 230) = 2.773, p < .05, R^2 = .088$. The increase in R from block 1 to block 2 was also significant, $\Delta R \text{ squared} = .030, p < .05$. The third block, containing the interaction term, was significant, $F(9, 229) = 2.458, p < .05, R^2 = .088$. The increase in R from block 2 to block 3 was not significant, $\Delta R \text{ squared} = .000, p > .05$.

Of the predictor variables, self-efficacy (*participant's confidence to attend at least one exercise class per week for four of eight week*) was a significant predictor of intentions to adhere to the class (*participant's goal during the next eight weeks to attend*

exercise class): $\beta = .167, p = .011$. Therefore, as participant's confidence to attend at least one exercise class per week for four of the next eight weeks increased, so did participant's goal during the next eight weeks to attend exercise class. However, the interaction variable in block 3 was not statistically significant.

Tenth, a hierarchical multiple regression analysis was performed on the dependent variable, *participant's intent to attend exercise class twice a week over the next eight weeks*. The two main effect variables were entered in block 2, and the interaction term was entered in block 3.

The first block, containing the covariates, was significant, $F(6, 225) = 4.239, p < .05, R^2 = .102$. The second block, containing the two main effect predictor variables (identification and self-efficacy (4 of 8 weeks)), was statistically significant, $F(8, 223) = 3.724, p < .05, R^2 = .118$. The increase in R from block 1 to block 2 was also not significant, $\Delta R \text{ squared} = .016, p < .05$. The third block, containing the interaction term, was significant, $F(9, 222) = 3.329, p < .05, R^2 = .119$. The increase in R from block 2 to block 3 was not significant, $\Delta R \text{ squared} = .001, p > .05$.

Of the predictor variables, self-efficacy (*participant's confidence to attend at least one exercise class per week for four of the next eight weeks*) was a significant predictor of intentions to adhere to the class (*participant's intention to attend the exercise class twice a week over the next eight weeks*): $\beta = .127, p = .050$. However, the interaction variable in block 3 was not statistically significant.

Hypothesis Five

Hypothesis five predicted that self-efficacy would mediate the relationship between source credibility and intentions to adhere. Using Baron and Kenny's (1986) four steps to establish mediation, results did not support self-efficacy as a mediating variable between perceptions of source credibility and intentions to adhere to the class. Neither partial (meeting the first three steps) nor full (meeting all four steps) mediation was found. Each of the five self-efficacy variables was tested separately.

Hypothesis Six

Hypothesis six predicted that participants who highly identified with the instructor would have higher levels of self-efficacy. Five measures of self-efficacy were used as dependent variables and each analysis is reported separately.

A hierarchical multiple regression analysis was performed on the first self-efficacy dependent variable (*participant's confidence to attend each of the next 8 weeks of class*) using the identification predictor variable. The first block, containing the covariates, was not significant, $F(6, 255) = 1.09, p > .05, R^2 = .025$. The second block, containing the predictor variables was not statistically significant, $F(7, 254) = .968, p > .05, R^2 = .026$. Finally, the increase in R from block 1 to block 2 was not statistically significant, $\Delta R \text{ squared} = .001, p > .05$. Identification was not a significant predictor of *participant's confidence to attend each of the next 8 weeks of class*.

Second, a hierarchical multiple regression analysis was performed on the second self-efficacy dependent variable (*participant's confidence to attend 7 of the next 8 weeks*

of class) using the identification predictor variable. The first block, containing the covariates, was not significant, $F(6, 240) = 1.321, p > .05, R^2 = .032$. The second block, containing the predictor variables was not statistically significant, $F(7, 239) = 1.153, p > .05, R^2 = .033$. Finally, the increase in R from block 1 to block 2 was not statistically significant, $\Delta R \text{ squared} = .001, p > .05$. Therefore, identification was not a significant predictor of *participant's confidence to attend 7 of the next 8 weeks of class*.

Third, a hierarchical multiple regression analysis was performed on the third self-efficacy dependent variable (*participant's confidence to attend 6 of the next 8 weeks of class*). The first block, containing the covariates, was not significant, $F(6, 233) = 1.690, p > .05, R^2 = .042$. The second block, containing the predictor variables was not statistically significant, $F(7, 232) = 1.572, p > .05, R^2 = .045$. Finally, the increase in R from block 1 to block 2 was not statistically significant, $\Delta R \text{ squared} = .004, p > .05$. Identification was not a significant predictor of *participant's confidence to attend 6 of the next 8 weeks of class*.

Fourth, a hierarchical multiple regression analysis was performed on the fourth self-efficacy dependent variable (*participant's confidence to attend 5 of the next 8 weeks of class*). The first block, containing the covariates, was not significant, $F(6, 233) = 1.925, p > .05, R^2 = .047$. The second block, containing the predictor variable was not statistically significant, $F(7, 232) = 1.660, p > .05, R^2 = .048$. Finally, the increase in R from block 1 to block 2 was not statistically significant, $\Delta R \text{ squared} = .000, p > .05$. Therefore, identification was not a significant predictor of *participant's confidence to attend 5 of the next 8 weeks of class*.

Fifth, a hierarchical multiple regression analysis was performed on the fifth self-efficacy dependent variable (*participant's confidence to attend 4 of the next 8 weeks of class*). The first block, containing the covariates, was statistically significant, $F(6, 232) = 2.147, p < .05, R^2 = .053$. The second block, containing the predictor variables was not statistically significant, $F(7, 231) = 1.853, p > .05, R^2 = .053$. Finally, the increase in R from block 1 to block 2 was not statistically significant, $\Delta R \text{ squared} = .137, p > .05$. Therefore, identification was not a significant predictor of *participant's confidence to attend 4 of the next 8 weeks of class*.

CHAPTER V

CONCLUSION

With the obesity epidemic becoming an increasingly problematic issue in modern society, it is useful to understand how and why individuals adhere to an exercise regime. For those who choose to participate in an organized exercise class, the quality of the exercise instructor is a critical factor in determining if the participant will adhere to the class over a sustained period of time. As stated earlier, “fitness class instructors are the pivot on which the success or failure of a program depends” (Oldridge, 1977, p. 85).

However, while the role of the instructor is important, little research has been conducted into determining how the participant perceives the instructor and what attributes of the instructor are most critical for determining future exercise adherence. This study sought to understand the relationship between participant’s perceptions of the source and intent to adhere, as well as what cognitive processes undergird the decision to continue attending class. Social Cognitive Theory, Social Identity Theory, and source credibility factors were used to explore this topic.

Discussion of Results

Dimensions of Source Credibility and Intentions to Adhere (RQ 1)

Four dimensions of source credibility were examined in this study: physical fitness, expertise, enthusiasm, and likeability. Of the dimensions, only instructor’s perceived expertise influenced participant’s intention to adhere to the class over the next

eight weeks. In a related study conducted by Heesacker, Petty, and Cacioppo (1983), researchers used differing messages to better understand how source credibility related to students' perceptions of teachers in an academic context. While the present study examined exercise instructors in a fitness class, it supports Heesacker, Petty, and Cacioppo's findings that receivers who deem a source to be an "expert" are more motivated to process the source's message. Since one of the primary messages delivered by an instructor involves class attendance, it is significant that instructors who are perceived as more of an "expert" influenced participant's intentions to continue coming to class.

However, while source expertise was a predictor of intentions to adhering to the class "over the next eight weeks," it was not a significant predictor of adhering to the class "twice weekly over the next eight weeks." One reason for this may be due to participant's unwillingness to commit to attending twice per week over the next eight weeks so early in the semester. "Over the next eight weeks" is more of a general statement, thus it could be that people were more comfortable indicating this on the survey.

While expertise was shown to be a predictor of intentions to adhere, none of the other dimensions of source credibility were significant. This is most likely due to the difficulty in self assessment of intentions to attend class. While studies by Courneya et al. (1999, 2000) and Courneya and Friedenreich (1997) have shown intention to exercise to be a significant determinant of exercise behavior, measuring *actual* adherence is a preferred method. It is likely that participants indicated a higher level of intentions to

adhere than the actual number of classes they attended. While logistical considerations prevented assessment of actual adherence in this study, future research should attempt to record the actual number of classes attended.

While only one dimension of source credibility was a significant predictor of intentions to adhere to the class, it is important that future studies seek to fill the gap in literature concerning source credibility in an exercise context. Only one study has examined the perceived overall credibility of fitness instructors (Jones, Sinclair, & Courneya, 2003), and no other studies have researched the different dimensions of source credibility.

Dimensions of Source Credibility and Social Identification (Hyp 1)

The social nature of participation in an exercise class is likely to bring about comparisons with others in the class, and especially the class instructor (Laverie, 1998). Additionally, Social Identity Theory states that the more one identifies with another person, the more likely the person is to compare herself to the source (Frederick et al., 1994). Therefore, hypothesis one predicted that identification with the class instructor would be positively correlated with social comparisons with the instructor.

Exploratory factor analysis showed that the six measures of social comparison did not hold together as a unidimensional and reliable scale. Therefore, social comparison examined perceptions of participants comparing themselves to the instructor in terms of competence and superiority. One reason for this could be that participants viewed competence as the “ability to complete” something. Perhaps those who viewed

themselves as superior also viewed themselves as better than the instructor at completing the exercise class. Similarly, those who felt they were inferior as compared to the instructor may have felt an inability to complete the exercises in the class.

Identification approached significance as a predictor of social comparison. Thus, participants who highly identified with the source felt that they were similar to the instructor in terms of competence and superiority. These findings support a study conducted by Dimanche and Samdal (1994) in which individuals participating in an exercise class were more likely to identify and thus compare themselves with the instructor.

Perhaps what is most interesting about these findings is that competence and superiority were the only items that held together as a scale. The social comparison scale used here was taken from Gilbert, Allan, and Goss (1996). In that study, researchers were assessing parent's social comparison with a psychiatrist treating their children. In the context of this study, social comparison with the instructor in regards to likeability, extroversion, and acceptance were items that did not cluster together in a reliable scale. One reason for this could be that individuals in an exercise setting view comparison with the instructor's likeability, extroversion, and acceptance as inconsequential. Exercise class instructors are generally *expected* to possess each of those characteristics. In terms of identification, participants may recognize that an instructor is likeable but may not feel the need to compare themselves to that instructor. However, participants who highly identify with the instructor may also engage in social comparison in regards to competence and superiority. Recall that this survey was conducted on the first day of

class. It is possible that participants who identify with the source are then asking themselves if they are more competent than the instructor. For instance, if Jill has taken four years of Pilates, she may come into an exercise class and identify with the instructor. Identification could then produce thoughts of comparison with the instructor because Jill is trying to determine if the class will be beneficial for her or if she already possesses the skills and competencies demonstrated by the instructor.

Dimensions of Source Credibility and Social Identification (Hyp 2)

Hypothesis two predicted that perceptions of the instructor's credibility would be positively related to the amount of social identification. Instead of testing source credibility in general, this study investigated which dimension was the best predictor of identification with the instructor. Results indicate that as perceptions of instructor's expertise, enthusiasm, and likeability increased, perceptions of the instructor being like the participant decreased. This was opposite what was hypothesized.

As with social comparison, it is possible that participants believe that exercise instructor's are *typically* enthusiastic, likeable experts. In this study, the perception of the instructor in all three of these categories was quite high: perceived expertise $M=4.54$, $SD=4.51$, perceived enthusiasm $M=4.29$, $SD=.87$, and perceived likeability $M=4.12$, $SD=.998$. However, instead of participants feeling greater amounts of identification with the source, the opposite occurred. Perhaps individuals taking classes from an instructor *want* to be exposed to someone who is likeable, enthusiastic, and knowledgeable. After all, individuals are choosing to attend class rather than engage in an individual workout

program. Relying on the motivation and expertise supplied by an instructor is one reason that an individual decides to take an exercise class in the first place.

According to Kleine, Kleine, and Kernan (1993), Social Identity Theory predicts when individuals engage in group activities, social comparison and identification is likely to occur. While Social Cognitive Theory would predict that the more credible role model would facilitate greater amounts of identification, the opposite occurred in this study (Bandura, 1977). Social identification *did* take place; it was just in a direction that was unexpected. Perhaps the context of an exercise class as well as the motivation for individuals signing up for the class are two explanations for this opposite effect.

Identification and Intentions to Adhere (Hyp 3)

Hypothesis three predicted that participants who highly identified with the exercise instructor would have greater intentions to attend class. Results indicated that there was no significant relationship between identification and intentions to attend to the exercise class.

One likely cause of this could be a “ceiling effect” in the data as individuals reported that they *intended* to adhere to nearly every class. When asked to indicate “*my goal during the next eight weeks to attend my exercise class,*” 81% of participants indicated “all of the time”: $M=4.77$ and $SD=.55$. When asked to indicate “*intentions to attend my exercise class twice a week over the next 8 weeks,*” 59.4% of participants indicated “all of the time” and 17.2% of participants indicated “most of the time”: $M=4.16$ and $SD=1.25$.

Since participants pay a fee of \$60 to attend the class, it would follow that they would expect to get the most out of their money and continue attending. Furthermore, individuals often have a new resolve when starting an exercise program. They may optimistically anticipate going to every class, yet quickly fall back into old patterns of inactivity as life pressures increase.

Interaction between Self-Efficacy and Intentions to Adhere(Hyp 4)

Hypothesis four predicted that there would be an interaction between self-efficacy and identification on intentions to adhere to the exercise class. Specifically, it was predicted that an individual who highly identifies with a source (i.e. instructor) would have the greatest self-efficacy to adhere to the class. Conversely, participants who reported low levels of identification would have lowest self-efficacy to adhere to the class. None of the interaction terms were significant. This hypothesis was not supported.

However, using all five self-efficacy predictor variables, results indicated a positive relationship between each self-efficacy variable and intentions to adhere to the exercise class. The more a participant felt confident in his or her ability to attend class, the more likely the participant was to intend to adhere to the class. These findings support Guillot, Kilpatrick, Herbert, and Hollander (2004) and McAuley, Jerome, Elavsky, Marquez, and Ramsey (2003); both of those studies showed high self-efficacy to be associated with greater exercise adherence. While this study examined *intentions* to adhere to an exercise class not actual behavior, the findings of this study did support the results of the earlier studies.

Self-Efficacy Mediation (Hyp 5)

Hypothesis five predicted that self-efficacy would mediate the relationship between source credibility and intentions to attend class. While the direct effect of source credibility on intentions to attend was examined in research question one, hypothesis five tested self-efficacy as a mediating mechanism.

Using Baron and Kenny's (1986) four steps to testing mediation, results did not support self-efficacy as a mediating variable between perceptions of source credibility and intentions to adhere to the class. Neither partial (meeting the first three steps) nor full (meeting all four steps) mediation was found. All five self-efficacy variables were tested. Although the source credibility variables predicted intentions, source credibility variables did not predict self-efficacy. Thus, no mediation could occur.

One reason for this is most likely the ceiling effect on intentions to adhere as discussed earlier. When asked to indicate on a five point scale with 1 indicating the least amount of attention and 5 indicating the most amount of attention, participants were asked to report "*my goal during the next eight weeks to attend my exercise class,*": $M=4.77$ and $SD=.547$. When asked to indicate "*intentions to attend my exercise class twice a week over the next 8 weeks,*" the $M=4.16$ and $SD=1.25$.

Although not supported in this study, self-efficacy does influence source credibility and exercise behavior. In fact, McAuley, Jerome, Elavsky, Marquez, and Ramsey (2003) showed high self-efficacy to be associated with greater exercise adherence. Further research is needed to better understand this relationship.

Identification and Self-Efficacy (Hyp 6)

Social Identity Theory suggests that the persuasive power of the instructor is tied closely to the participant's amount of identification with the instructor. However, a person must also believe he or she can complete the activity advocated by the instructor before he or she can actually carry out the action. Thus, an instructor's persuasive message to continue coming to the class is contingent upon the amount of self-efficacy held by participants. Therefore, hypothesis six predicted that higher levels of identification with the source would be positively correlated with high levels of self-efficacy.

Results did not statistically support hypothesis six. Perhaps the largest reason for this would be the ceiling effect of participants when asked to report self-efficacy. The limitations section will further clarify the problems with the intentions to adhere and self-efficacy measures used in this study.

Theoretical Implications

This study invoked Social Cognitive Theory to examine perceptions of exercise instructors as related to intentions to continue attending an exercise class. Social Cognitive Theory assumes continual interaction between an individual's thoughts, behavior, and the environment (Bandura, 1986). Although SCT has been used in multiple contexts examining exercise behavior (Bandura, 1992; Catania, Kegeles, & Coates, 1990; Stretcher, DeVellis, Becker, & Rosenstock, 1986), this study goes one step further in investigating how an individual's thoughts about a source of information

can then affect future behavior. The specific aspects of Social Cognitive Theory examined in this study included social learning, identification, social comparison, and self-efficacy. According to Bandura, Social Cognitive Theory is built on the idea that social learning is *enhanced* when credible role models are observed (Bandura, 1977, 1986). As stated in the literature review, participants in an exercise class are not only *learning* techniques and fitness skills, but also *learning* the benefits of a sustained commitment to exercise (i.e. exercise adherence).

This study lends some support to the theory that perceived credibility does impact behavior. Specifically, perceived source expertise was an influential element in determining intentions to adhere to the exercise. Those who felt that the instructor was more of an expert were more likely to intend to continue attending class. Further research must be conducted in an exercise setting to determine how exercise instructor credibility impacts exercise adherence.

Additionally, Social Identity Theory (SIT) was used to understand *how* this social learning happens. Social Identity Theory states that life consists of *doing*, that *doing* is largely social in nature, and when *doing*, social comparisons naturally occur (Kleine et al., 1998). SIT posits that the more one identifies with a person, the more likely social comparison will take place. In this study, identification approached significance as a significant predictor of both measures of social comparison.

Taken together, Social Cognitive Theory and Social Identity Theory assume that identification with a model will increase the potential for learning (and subsequent behavior change). This study found a negative relationship between perceived instructor

enthusiasm, expertise, and likeability and the levels of identification. Since participants use exercise classes to help motivate themselves, it is likely that individuals are seeking models (i.e. instructors) who are *more* enthusiastic, likeable, and knowledgeable. After all, part of the reason for attending an exercise class is to receive motivation and guidance from an expert, enthusiastic instructor. For instance, if an individual already felt that she were an expert belly dancer, she would most likely not attend class because she already had expert knowledge. More research is needed to see how Social Identity Theory functions in an exercise class setting.

Not surprisingly, heightened identification was not a predictor of intentions to adhere to the class. This could possibly be due to the difficulty in assessing intentions to exercise, but it could be related to the negative relationship found between perceptions of source credibility and identification. Furthermore, one might identify with LeBron James but not practice basketball 40 hours a week in hopes of becoming an NBA star. Participants in this study may have identified with an instructor, but they were not necessarily inclined to attend class each week in order to be or look like the instructor.

Additionally, the study examined the idea that self efficacy moderates the effect of identification on intentions to adhere to the class. Bandura holds that the effect of identification on social learning is moderated by the extent to which the individual feels a sense of self-efficacy about performing the modeled behavior (Bandura, 1996). Findings suggest that self-efficacy is an accurate predictor of intentions to adhere to the class, yet the interaction of self-efficacy and identification did not impact intentions to adhere to the class. In other words, this study did not support the idea that self-efficacy is

a moderating factor. However, this is most likely due to the limitations in assessing intentions to adhere to an exercise rather than any theoretical implications.

Limitations

This study used a convenience sample, therefore the results cannot be generalized beyond those who participated in the study. However, the study was an accurate representation of a real world scenario. Furthermore, the high number of surveys collected ($N=272$) is significant.

The largest limitation of this study was the inability to record actual class attendance. Asking participants to self-report intentions to attend to the class did not provide an accurate picture of actual exercise behavior. Thus, future studies should report participant attendance. For instance, this study would have been more valid if actual participant behavior was recorded every second week of the class. By measuring intentions to adhere as well as actual adherence, the research findings might have been able to avoid the ceiling effect found in the present study.

Additionally, the study was seeking to capture participant's initial, quick assessments of the instructor. It is important to note, however, that having only one, one-hour class to judge a person's characteristics is a relatively short amount of time. Physical characteristics of the source (i.e. physical attractiveness) and outward personality characteristics (i.e. enthusiasm) are easily assessed quickly. Yet likeability, competence, and acceptance are admittedly difficult to deduce quickly. Participants penciled in comments such as "hard to know" and "I can't tell" on surveys. Additionally,

asking about the physical characteristics of a source (i.e. attractiveness, clothing, fitness level) was also difficult. Participants verbally expressed confusion and resentment to the research assistant at having to assess the source's physical characteristics. One participant said "I don't know why this is important, what he looks like doesn't make any difference." While one could agree with this statement, research into source credibility would posit that while what one looks like *shouldn't* matter, it often does. As Chaiken (1986) points out, "heightened physical attractiveness generally enhances one's effectiveness as a social influence agent" (p. 150).

Another limitation of the study was the ceiling effect seen in relation to the self-efficacy measures. Participants were asked to report on a scale of 0-100 how confident they were that they could attend class each of eight weeks, 7 out of 8 weeks, 6 out of 8 weeks, 5 out of 8 weeks, and 4 out of 8 weeks. This scale did not hold together in this study as it did in Fontaine and Shaw (1995); participants in the present study often reported "100" for each item. A different measure of self-efficacy may give a clearer picture of participants' belief that they can adhere to the exercise class.

Finally, the final question on the survey determining intentions to adhere to the class was not used due to a typographical error. Participants were asked to indicate between 0 and 20 their goal over the next 10 weeks to attend class. Since the class was only 8 weeks, this measure was inaccurate.

Future Directions

This study sought to examine the role of perceptions of source credibility as related to intentions to adhere to an exercise class. Of the dimensions of source credibility, only one was a significant predictor of intentions to adhere: perceived expertise. Such a finding has important implications for helping to motivate people to continue attending a class. Instructors should inform class participants of credentials and certifications prior to teaching the class. In doing so, participants may feel that the instructor is more of an expert, and this may encourage continued attendance.

Since this is the first study examining source credibility variables as related to adherence in an exercise setting, additional research is needed to help understand the cognitive processes that determine if and how a person adheres to an exercise program. While only four dimensions of source credibility were tested in this study, it may be worth studying the perceptions of the instructor's competence, character, trustworthiness, or physical attractiveness. The scope of this study limited the number of variables tested, but source credibility has been operationalized in multiple ways. A study designed to test ten or more dimensions instead of just four may offer a better picture of overall credibility.

Also, there are many factors beyond characteristics of an instructor that influence participants' likelihood of returning. For instance, perhaps the important thing for participants is finding a class that meets at a convenient time? College students have varying schedules, so understanding when is the optimal time to exercise could be advantageous for promoting adherence.

Another idea could be to look at the communication and interpersonal relationship amongst class members. The present examined social comparison between instructor and student, yet understanding the social comparison dynamic between participants could give insight into how social comparison and identification play roles in class adherence. If an individual feels similar to the other class participant's and the environment of the class is pleasing, he may be more likely to continue attending.

Also, to prevent a ceiling effect from occurring in future studies, studies which measure actual exercise adherence at intervals within the course of the class should be conducted. Recording actual adherence at the second, fourth, and final week would help clarify which participants are actually adhering. Taking interval self-efficacy measures would also be helpful in understanding the connection between instructors and participant's self-efficacy.

In conclusion, future studies should investigate different elements of source credibility, the role of social comparisons, as well as actual exercise adherence rates.

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APPENDIX A

EXERCISE INSTRUCTOR SOURCE CREDIBILITY AND PARTICIPANT ADHERENCE

- 1) What is your age? _____
- 2) Gender:
- Male
 - Female
- 3) Ethnicity:
- Caucasian
 - African-American
 - Latin-American
 - Asian-American
 - Mexican-American
 - Native American or Alaskan Native
 - Other
 - Refused/Don't Know
- 4) Have you taken a class from this instructor before? ____Yes ____No
- 5) Please circle a number for the following questions:

In relationship to the instructor of this class, I generally feel...

Inferior	1	2	3	4	5	Superior
Less Competent	1	2	3	4	5	More Competent
Likeable	1	2	3	4	5	Less Likeable
Less Reserved	1	2	3	4	5	More Reserved
Left Out	1	2	3	4	5	Accepted

- 6) Please use this five-point scale to answer the questions on **physical attractiveness**:

1= Strongly Agree 2=Agree 3=No Opinion 4=Disagree 5=Strongly Disagree

- (a) I think the instructor is quite physically fit 1 2 3 4 5
- (b) The instructor is healthy looking..... 1 2 3 4 5
- (c) I find the instructor very attractive physically..... 1 2 3 4 5
- (d) I don't like the way the teacher looks 1 2 3 4 5

- (e) The instructor is somewhat out of shape..... 1 2 3 4 5
 (f) The instructor is not very fit 1 2 3 4 5
 (g) The instructor wears stylish clothes 1 2 3 4 5
 (h) The clothes the instructor wears are not flattering 1 2 3 4 5

7) Please use the same five-point scale above to answer these questions on **likeability**:

- (a) The instructor seems like a very nice person 1 2 3 4 5
 (b) I believe I would really like the instructor 1 2 3 4 5
 (c) I really don't care to get to know the instructor any better..... 1 2 3 4 5

8) Please use this five-point scale to answer these questions on **enthusiasm**:

1= Strongly Agree 2=Agree 3=No Opinion 4=Disagree 5=Strongly Disagree

- (a) The instructor seems enthusiastic about the class 1 2 3 4 5
 (b) The instructor spoke with expressiveness..... 1 2 3 4 5
 (c) The instructor varied the tone of her/his voice 1 2 3 4 5
 (d) The instructor encourages me 1 2 3 4 5
 (e) The instructor motivates me 1 2 3 4 5

9) Please use the same five-point scale above to answer these questions on **identification**:

- (a) The instructor is like me 1 2 3 4 5
 (b) The instructor has the same kind of
 worries and concerns as I do..... 1 2 3 4 5
 (c) The instructor is somebody I like 1 2 3 4 5
 (d) The instructor is somebody I can respect..... 1 2 3 4 5

10) Please rank the instructor on his or her **expertise**.

In regard to this class, I feel the instructor is....

- | | | | | | | |
|-----------------------|---|---|---|---|---|---------------|
| (a) not knowledgeable | 1 | 2 | 3 | 4 | 5 | knowledgeable |
| (b) incompetent | 1 | 2 | 3 | 4 | 5 | competent |
| (c) inexpert | 1 | 2 | 3 | 4 | 5 | expert |
| (d) not trained | 1 | 2 | 3 | 4 | 5 | trained |
| (e) not experienced | 1 | 2 | 3 | 4 | 5 | experienced |
| (f) unintelligent | 1 | 2 | 3 | 4 | 5 | intelligent |
| (g) uninformed | 1 | 2 | 3 | 4 | 5 | informed |
| (h) stupid | 1 | 2 | 3 | 4 | 5 | bright |

11) Using a scale between 0 (not confident at all) and 100 (completely confident), how confident are you that you can attend at least one exercise class per week for:

- (a) each of the next eight weeks _____
- (b) seven of eight weeks _____
- (c) six of eight weeks _____
- (d) five of eight weeks _____
- (e) four of eight weeks _____

12) Please circle the answer below each of the next two questions.

(a) My goal during the next 8 weeks is to attend my exercise class....
once in a while sometimes often most of the time all of
the time

(b) I intend to attend my exercise class twice a week over the next 8 weeks
once in a while sometimes often most of the time all of the time

13) Please write a number between 0 and 20:

Over the next 10 weeks, my goal is to attend my exercise class _____ times.

VITA

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