

## Literature Review

**The effect of martial arts training on self-concept, self-esteem, and self efficacy**

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People have practiced martial arts for centuries. Anthropologists have discovered murals and hieroglyphics in tombs that date back to 3500B.C., which depict the ancient style of hand-to-hand combat used by the Egyptians (Lewis, 1996). One of the earliest recorded forms of martial arts is pancration. This unique style of combat combined punches and kicks with Greek wrestling and boxing movements, and it became a sport in the Olympic games in 684 B.C. (Lewis, 1996).

Martial arts were first developed and practiced for the purposes of self-discovery and combat. Kung Fu, which originated in China in 520 A.D., was developed in a Shaolin Monastery as a way to reach enlightenment by conditioning the body, mind, and spirit (Lewis, 1996). Another popular form of martial arts is Karate. Karate was developed by farmers in Okinawa as a way to protect their land and heritage against other invading nations who attempted to dominate and conquer the land and heritage of Okinawa (Lewis, 1996). The weapons used in karate, such as the tonfa and kama were originally tools of agriculture (Lewis, 1996).

Due to the historic evolution of Karate, skills were developed and styles were adapted to address the functional needs of survival and victory in combat. The invading troops wore armor composed of bamboo, so if the Okinawa islanders wanted to inflict damage and pain, they had to strike through the bamboo (Lewis, 1996). Since the farmers had to be able to break through wood and bamboo in order to be successful in combat they began conditioning their knuckles by punching bales of straw and graduated to punching live tree trunks (Lewis, 1996). The islanders became so proficient at being able to strike through the bamboo armor to injure their enemies

that the invading troops realized they must attack using other methods; accordingly, they invaded using soldiers on horseback (Lewis, 1996). Again, the Okinawa islanders had to develop another technique to attack their enemies on riding horseback. This is why the flying sidekick was developed. Through practice and determination, the islanders' use of this technique became astounding, as they would be able to not only dismount the soldier from his horse but also kill him in the process (Lewis, 1996). This is why in Karate and other striking systems of martial arts it has become a tradition for practitioners to break boards and perform flying sidekicks over obstacles to advance in rank. Martial arts have evolved over time, from a technique of necessity in combat, to a form of physical exercise and expression. As the arts have changed, so have the reasons people study them.

Today people train in the martial arts for a variety of different reasons. Some people study martial arts as a means of self-defense, but it can be argued that self-defense is not at the forefront of reasons. Many people believe that they run a risk when studying martial arts for the reason of self-defense. In America, we have the armed forces to protect us during times of war. We have police to protect us from criminals in this country who would try to harm us. A phenomenon even more compelling is that the United States has become a litigious society. This is often the reason why people who know martial arts have to use extreme caution about their use of force, even if it is for the use of self-defense. In other words, if a martial artist hurts someone, even someone who was initially trying to hurt him or her, there is a likely chance that he or she would have a law suit pending.

Others train as a form of physical exercise, which can be observed with the wave of Tae Bo and Escrima Fitness that has taken the world by storm. Others train in the martial arts for

sport. This can be observed through all the Tea Kwon Do and Jiu Jitsu tournaments found around the country. Some practice martial arts to increase their psychological well-being.

Martial arts can be a good form of physical exercise, and exercise has been proven to enhance mental and psychological feelings after a training session (Carron, Hausenblas, Estabrooks, 2003). Among people who train in the martial arts for the sport or competition aspect, the better competitors have higher self-esteem and sport confidence (Richman & Rehberg, 1986).

For some, learning and mastering a new skill, such as martial arts, has psychological benefits including raised feelings of self-esteem and self-efficacy (Finkenber, 1990).

Self-confidence can be defined as, “the belief that you can successfully perform a desired behavior” (Weinberg & Gould, 1999). Although self-confidence is mainly considered to be a global trait, a person may possess both trait and state self-confidence (Vealey, 1986). Trait self-confidence is the feeling or the belief people have that they will be successful (Vealey, 1986). State self-confidence is the feeling or the belief a person has about a certain situation in a particular place in time (Vealey, 1986).

Having the appropriate level of confidence is vital if one is to succeed in athletics. The appropriate level of confidence may allow athletes to concentrate more diligently on the task they are performing (Weinberg & Gould, 1999). When people are confident, they are also more likely to experience positive emotions, which in turn allow them to be relaxed and calm in the face of danger (Weinberg & Gould, 1999).

Confident people are willing to take chances because they believe in themselves and believe they will make the correct response (Weinberg & Gould, 1999). People with low levels of confidence will act more timidly, due to not believing in themselves and doubting that they

will make the correct choice (Weinberg & Gould, 1999). Appropriate levels of self-confidence may also lead to increased effort in the pursuit of victory. When people feel confident, they believe in themselves and do not quit or give-up during an event when they get tired; furthermore, confident people will put forth more effort because they know they will be successful (Weinberg & Gould, 1999).

Confidence levels may also affect the psychological momentum of the event. Confident people are better at over-coming adversity (Weinberg & Gould, 1999). When confident people hit walls or run into obstacles, they do not get down on themselves or lose faith in their abilities, but rather take the situation head on and double their efforts in order to succeed (Weinberg & Gould, 1999). This trait allows the confident person to shift momentum in an event, and also gives him or her the advantage of keeping the momentum when performing against a person who lacks confidence. A lack of confidence is devastating to athletes and will prevent them from performing at their best because they tend to look mainly at their weaknesses; in contrast, athletes who have appropriate levels of self-confidence will focus primarily on their strengths (Weinberg & Gould, 1999).

While improving athletes' confidence level is difficult, it can be accomplished through a variety of methods. The first, and most likely the best way to increase an athlete's self-confidence is to increase the rate at which the individual successfully accomplishes their goal (Weinberg & Gould, 1999). This method can be utilized by having the athlete perform a simpler task until proficient. As the athlete becomes more confident through the experience of succeeding, the level of difficulty may be increased until the athlete can successfully perform the task (Weinberg & Gould, 1999).

Overconfidence can also hinder athletes from reaching their goals and becoming their best. When people are overconfident, they have a false sense of security, and overestimate their abilities (Weinberg & Gould, 1999). Although under confidence is usually more prevalent, overconfidence may be equally problematic.

Another facet of confidence is sport confidence, which is a form of state self-confidence. Sport confidence is self-confidence applied to a particular sport or athletic activity (Weinberg & Gould, 1999). Athletes obtain sport confidence from nine sources: mastering the task, demonstrating one's own ability to perform the activity, preparing both physically and mentally, physical self-presentation, social support, trust, vicarious experiences, environmental contact, and situational favorableness (Weinberg & Gould, 1999). These sources contribute to the development of sport confidence, which ultimately plays a vital role in one's ability to be successful in physical activities.

Self-efficacy is another important factor in determining one's success. Self-efficacy is defined as "an individual's conviction that he or she can successfully execute the behaviors necessary to produce a desired outcome" (Van Raalte & Brewer, 2002). Although self-efficacy is directed at particular actions and behaviors, thus making it specific, it may also occur in global terms (Weinberg & Gould, 1999).

Six major sources influence a person's self-efficacy: mastery experiences, vicarious experiences, motivation, verbal persuasion, imaginable experiences, and physiological and emotional states (Van Raalte & Brewer, 2002). The sources of self-efficacy are similar to those of sport confidence. Sport confidence and self-efficacy may go hand in hand, since both are merely extensions of state self-confidence.

Self-efficacy can influence the choice of activities a person participates in and also influences the level of effort an athlete puts forth (Weinberg & Gould, 1999). If a person has a high feeling of self-efficacy in a certain area, he or she is more likely to choose to participate in that activity and will put forth more effort to reach his or her goal (Van Raalte & Brewer, 2002). High levels of self-efficacy may lead to positive expectations in terms of sport performance (Weinberg & Gould, 1999). Positive expectations may be used to overcome psychological obstacles, such as doubt and fear of failure.

Low levels of self-efficacy can hinder performance and may keep athletes from utilizing their full potential. Although several ways to increase self-efficacy exist, perhaps the single best way to increase self-efficacy is through previous performances (Frank, 2001). Previous performances refers to past experiences a person has when he or she is performing a desired activity. The past experiences could transpire from learning and or through practice or game situations. This is why it is crucial that athletes experience success. This is also why coaches will break up complex skills into easier ones when athletes first learn techniques or movement patterns (Frank, 2001).

In the martial arts, most systems have ranks, otherwise known as belt promotions. At the lower levels, students learn basic skills, and as the student progresses to higher ranks, other components are added to the basic motor skills in order to produce complex motor skills (Frank, 2001). Breaking down skills and teaching skills in a progression is also good because it prevents the athlete from becoming overwhelmed with too much new information (Frank, 2001).

The practice of martial arts can be used to increase self-confidence and self-efficacy. People who are confident have learned to deal well with stress and/or dangerous situations that they have encountered through the course of their lifetime. Since the nature of martial arts is to

deal with stressful situations, the practice of martial arts will increase the coping skills necessary to handle the amount of stress the person encounters (Howell, 2000). By encountering more stressful situations, a person learns to control his or her negative emotions such as fear, doubt, and anger (Howell, 2000). It is the learned control that a person develops over time that increases self-confidence as the control mechanisms people develop through martial arts training begin to carry over into their everyday lives (Howell, 2000).

There are several major coping mechanisms a person can develop through training in the martial arts, which may be used to increase self-confidence. The first major coping mechanism is control (Howell, 2000). Control refers to the control over one's self, and is used to control thoughts, emotions, and actions (Howell, 2000). This is important because in most situations a person may have little or no control over the actual situation itself, but he or she can always control his or her actions, thoughts, or feelings about the situation.

The second major coping mechanism is suppression (Howell, 2000), which is the ability to deal with thoughts and emotions at the appropriate time and place (Howell, 2000). The most common emotion that a martial artist deals with in the realm of training is anger. Mistakes are made while training in the martial arts. Sometimes people get punched or kicked accidentally, and on occasion a person may apply a joint lock with too much force. Although this can be dangerous, and is always an annoyance, it is a part of training that everyone experiences. The martial artist must learn to suppress the feelings of anger until a more appropriate time.

Another major coping mechanism, which coincides with control and suppression, is sublimation (Howell, 2000). Sublimation is the ability to deal with negative emotions such as worry and anxiety in positive ways (Howell, 2000). At certain times, it is common for the

student to experience some level of anxiety, doubt, fear, or all three. Good students will not let these negative thoughts consume them.

The ability to logically analyze information is crucial in order to perform martial arts (Howell, 2000). Logical analysis is the ability to carefully explore problems and information in order to plan goals, answer questions, or pass along useful information (Howell, 2000). This ability is especially important for the martial arts instructor. An instructor must be a great problem solver. When students come to their instructor with questions about the performance of certain techniques, or in depth ethical questions, the instructor must be able to analyze all of the information and logically answer the students' questions.

Objectivity is the fifth major coping mechanism that can be developed through the training of martial arts (Howell, 2000). Objectivity is used to separate thoughts, feelings, and emotions in order to promote an unbiased understanding over a given situation (Howell, 2000). Without objectivity, thoughts become intertwined with emotion, making rational decisions difficult.

Through the course of training a martial artist also develops empathy. Empathy is the ability to understand how a person is feeling, and how to act appropriately according to those feelings (Howell, 2000). In the martial arts, people have a tendency to establish close friendships with their training partners. They will often share thoughts and feelings with their training partners they would not be willing to share with anyone else.

The seventh major coping mechanism that can be developed through the martial arts is tolerance of ambiguity (Howell, 2000). This is perhaps one of the most difficult coping mechanisms to develop. Tolerance of ambiguity is, "the ability to function in situations where others cannot make clear choices, because the situation is so complicated" (Howell, 2000). In

these situations, the martial artists must show their ability to use all of the other major coping mechanisms in order to think and act in a correct rational manner.

These seven coping mechanisms contribute to the development of self-confidence within the activity of martial arts. By promoting appropriate feelings, thoughts, and behaviors in martial arts training, an increase in self-confidence should be found.

Few studies involve the use of martial arts training to assess or improve levels of self-esteem or self-concept. Madenlian (1979) used Aikido training to see if it would improve the self-concept of the students involved in the experiment. The subjects used in the study were 12-14 year old students who had all been referred by their schools to the Orange County Mental Health Department. The 66 students were split into three groups of 22 each. The first group received Aikido training once a week for two hours over the course of 16 sessions. The second group received “traditional therapeutic treatment”, which involved individual and group therapy sessions administered by mental health professionals. The second group also received two hours of therapy a week for 16 total sessions. The third group for the study was the control group and received no treatment. All three groups took the Piers-Harris Children’s Self-Concept Scale before the start of their therapy, and again upon the completion of their therapy to assess their self-concept. The Piers-Harris Children’s Self-Concept Scale has an “internal consistency of .78-.95, and a retest reliability of .71-.77” (Madenlian, 1979). At the completion of the therapy session both of the experimental groups significantly increased their scores on the Piers-Harris Children’s Self-Concept Scale. However, the group that received the Aikido training increased their scores more than the group that received the “traditional therapeutic treatment”. This study shows that Aikido can be used to increase the self-confidence of 12-14 year old students.

The following study was performed to assess the development of self-esteem through training in the martial arts. Richman & Rehberg (1986) conducted a study in which 60 martial artists were tested one day before the largest tournament in the United States, the 1985 Battle of Atlanta, in which they were going to compete against one another. The average age of the subjects was 23 years. The subjects were ranked into four groups consisting of beginner, intermediate, advanced, and expert according to their rank in Karate. Twelve subjects were classified as beginners because they held white through gold belts. There were 16 subjects classified as intermediates, who had purple, green, or blue belts. Twelve advanced subjects held either a red or brown belt, and 16 expert subjects who held black belts. Four of the subjects did not designate what their belt rank was in the demographic questions for the study.

The subject's self-esteem was measured with the Karate Tournament Survey (KTS). The KTS is a self-report questionnaire, which consisted of three parts: demographic information about the subjects, the Rosenberg Self-Esteem Scale (10 questions used to assess self-esteem), and questions in regards to the subjects' martial arts capabilities compared to other martial artists at their rank. The coefficients for the KTS are as follows: internal reliability of reproducibility of .92, scalability of .72, test-retest reliability ranging from .85-.88, and conversant reliability from .56-.83. The following day all subjects were tracked at the tournament to see if they were awarded a trophy.

The authors concluded that the subjects with higher rank in Karate also had significantly higher levels of self-esteem. It was also determined that the subjects who received trophies the next day, competition winners, also had significantly higher levels of self-esteem than subjects who did not win trophies. The KTS also demonstrated that the trophy winners placed more

importance on Karate in their everyday lives. This study found that people with higher self-esteem display greater ability in their sport.

Finkenberg (1990) performed another study using Tae Kwoon Do as a means to improve females' self-concept. The subjects involved in this study were 100 college females, whose average age was 22 years. It was determined that none of the female subjects had ever taken martial arts. The experimental group consisted of 51 subjects who were enrolled in Tae Kwoon Do classes. The control group consisted of 49 subjects who were enrolled in general health classes. Both of the groups took classes that lasted for an 18-week duration.

In order to assess the subjects' self-concept levels, each subject was given the Tennessee Self-Concept Scale the first week of class (pre-test) and the last week of class (post-test). The Tennessee Self-Concept Scale consists of 120 questions. The first 100 questions are statements the subject answers in order to create a "self-picture". The next 10 questions composed the self-criticism scale and consisted of questions taken from the Minnesota Multiphasic Personality Inventory (MMPI) that were adapted in order to be used for the study. The last 10 items on the inventory involved the perception each subject had about herself in regards to physical self, moral-ethical self, personal self, family self, social self, identity, self-satisfaction, and behavior. This MMPI is described by the authors as having "adequate" reliability and validity.

The results from this study revealed that the mean self-concept scores from the Tennessee Self-Concept Scale were higher at the post-test for the experimental group who were enrolled in the Tae Kwoon Do classes (Finkenberg, 1990). The areas of personal self, physical self, social self, self-satisfaction, and identity were significantly higher for the subjects enrolled in Tae Kwoon Do classes compared to the students who were enrolled in health classes (Finkenberg, 1990).

Winkle (2003) conducted a study at West Point Military Academy to observe the ramifications self-defense classes have on female cadets' physical self-efficacy (PSE), perceived physical ability (PPA), and physical self-presentation confidence (PSPC). The subjects used for this study were 80 first year female cadets enrolled in self-defense classes. The average age of the subjects was 18 years, and 24 subjects (30%) were corps squad athletes. Each self-defense course lasts for a duration of nine-weeks and is composed of 19 lessons, each lasting for 50 minutes.

The Physical Self-Efficacy Scale, developed by Rychman, Robbins, Thornton, and Contrell, was utilized in the study. The Physical Self-Efficacy Scale is composed of 22 statements. The first 10 statements formulate the perceived physical ability (PPA) subscale, while the second 12 statements formulate the physical self-presentation confidence (PSPC) subscale. The subjects were able to interject their self-perceptions about each statement through the use of a six-point Likert scale (1 strongly agree to 6 strongly disagree). It has been found that the Physical Self-Efficacy Scale has a coefficient alpha value of .72. The Physical Self-Efficacy scale has shown to have "satisfactory" concurrent validity when compared to the Tennessee Physical Self-Concept Scale" (Winkle, 2003). The subjects were administered surveys on the first and last day of their classes.

A two by two MANOVA exposed a significant difference between time and the perceived physical ability subscale. The scores for the subjects significantly decreased from Time 1 to Time 2 on the PPA subscale. There was no significant difference found on the PSPC subscale.

The majority of the studies reviewed have shown an increase in subjects' self-concept and self-esteem through martial arts training. The single exception in the review is the Winkle

study conducted at the United States Military Academy in which the subjects displayed a decrease in perceived physical ability at the end of the course. In contemplating the reasons as to why the Winkle study is an outlier there are two major factors that must be taken into consideration. The first is the amount time his subject spent studying martial arts. Winkle's subjects only studied self-defense for nine weeks. The other studies conducted and reviewed that demonstrated psychological improvements in their subjects at the termination of a martial arts program were conducted over a span of 16 weeks for the Madenlian study and 18 weeks for the Finkenberg study. Let us also not forget about the Richman and Rehberg study in which higher ranking martial artists displayed greater levels of self esteem. The higher level martial artists have a longer period of time spent in the martial arts in comparison to their lower ranking counterparts. We can conclude that time is a substantial factor in the practice of martial arts to improve psychological factors.

The second issue that must be discussed is the level of physical contact and resistance the subject's encountered in each of the martial arts programs. Unfortunately, this specific information is not available by reading any of the studies. However, having first-hand knowledge of the USMA females self defense course, the females in the course experience high levels of contact and resistance from their partners because they are fighting against one another for a grade. I would be extremely surprised if any of the other studies had their subjects fighting for graded events. In the realistic setting of mortal combat there is always a winner and a loser, unlike martial arts training that involves very low levels of contact where practitioners can feel good about themselves after each training session. Due to nature of the subjects being unsuccessful, the realistic training environment can produce decreased psychological feelings.

More studies need to be conducted in this area in order to further explain the relationship between martial arts training and psychological factors such as self-concept, self-esteem, and self-efficacy, but from the information collected and reviewed training time and levels of contact are key factors that must be accounted for in the relationship of these areas.

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