

Research Brief

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Preliminary Research on Martial Arts & Education

Sheryl L. Bacon, MPA

Introduction

Martial arts have grown in popularity in the United States over the last several decades, stemming from both an increased exposure to Asian cultures and an increased understanding of the physical and mental benefits they provide (Harwood, Lavidor, and Rassovsky, 2017). As of 2016, the number of American youth participating in some form of martial arts exceeded 6.5 million (Demorest and Koutures, 2016). Within the last twenty years, however, the problems of school violence and bullying have also grown and gained more attention in the scope of the public, leading school administrators to seek out creative new means to address these problems. Given that the tenets of self-awareness and self-control are inherent to the philosophies of most traditional martial arts practices (Harwood, et al, 2017), incorporating martial arts training into school environments has become one possible recourse in improving the school environment, particularly for those students who are seen as being “at-risk.” This paper is intended to serve as a summarization of existing data on martial arts training and its impact on school-age youth, as well as the implications on practical research and intervention applications for Jackson schools.

Following an intensive search of online databases for peer-reviewed publications (including use of keywords such as “martial arts,” “martial arts training,” “educational benefits,” “performance” and “school outcomes”), no data specific to overall school outcomes (such as general academic performance or attendance rates) presented itself. There is, however, an abundance of research and case studies, which are specific to behavioral outcomes, to particular subject areas (such as mathematics or language arts), or to self-reported satisfaction and “well-being” among targeted populations. As such, the focus of this analysis centered on data findings relative to interventions among school-age youth and young adults using traditional martial arts training styles, as opposed to modern martial arts. This distinction is important because

traditional martial arts are considered to be those rooted in concepts such as psychological and spiritual awareness and non-aggression, while **modern martial arts** practices focus on competitiveness and aggressiveness (for example, the arena sport known as mixed martial arts or MMA is a modern style which is notorious for its aggression and levels of violence) (Hernandez and Anderson, 2015). Because of the dearth of available data relating martial arts training directly to general school performance outcomes, the selection of this particular focus should lend itself towards the ultimate research question of “how are school outcomes affected by the inclusion of martial arts training?” Possible variants to this question exist based on whether the training is included as a crisis intervention, or as part of the general curriculum.

Findings

Analysis of existing data found the following with regard to the advantages of martial arts training:

- 1. Physical health benefits.** Countless studies report the overall physical benefits (within the general population) of martial arts practice, dating back as far as the 1960s (Tadesse, 2015). Martial arts have been shown to positively affect the development of muscle strength, motor skills, flexibility, and balance (Demorest and Koutures, 2016). These benefits are largely realized through the practice of proper stance, movements and combat techniques (Journal of Physical Education, Recreation, and Dance, 2000). Additionally, martial arts training can improve fitness, coordination, and dietary habits in youth, according to kickboxing champion Kash “The Flash” Gill, who regularly advocates for inclusion of martial arts in general physical education curriculum (Education Journal, 2015).
- 2. Mental health benefits.** Similarly, there are many existing studies which report the mental health benefits of martial arts training – these mental health benefits should be considered from dual aspects. The first are the benefits which result directly from the physical health benefits; these include the increased confidence, self-esteem, and sense of autonomy that come from an increase in physical strength (Lakes and Hoyt, 2004), and the increased motivation (towards self-actualization) which, according to Abraham Maslow’s Motivation Theory, results from the improved ability to protect one’s self from external threats and harm, thus satisfying the basic need for safety (Vockell and Kwak, 1990).

The second aspect of these mental health benefits are those which result directly from the philosophies and practices set forth in traditional martial arts. Traditional martial arts training styles originate from ancient Buddhist and Tao doctrines (Zivin, et al, 2001) and operate with “Codes of Conduct” that make character traits such as altruism, self-awareness, respect, and deference to authority central to the training. Additionally, martial arts teach a focus on self-control, specifically through the process of keeping the body and mind connected, and keeping all actions deliberate. This is done through such practices as meditation, deep breathing exercises, and in-class role playing, which helps students recognize boundaries and better prepare to respond appropriately to conflict (Hernandez and Anderson, 2015; JOPERD, 2000). As a result, data show that martial arts students experience secondary mental health benefits such as lessened anxiety and feelings of aggression, and improved concentration, self-discipline, goal orientation, response to stress, and sense of well-being (Vockell and Kwak, 1990; King and Williams, 1997; Zivin, et al, 2001; Tadesse, 2015; Harwood, et al, 2017).

3. Communal/environmental benefits.

Available data also suggest that while not necessarily related to performance outcomes, martial arts training can have communal benefits which improve the school environment itself. These benefits manifest as greater demonstrations of respect and empathy for others, including active participation in defense against bullying, as exhibited in the 2008 case study by Twemlow et al. examining the effects of a martial arts program known as the Gentle Warrior Program. The program itself focused on “offering each student instruction in peace-promoting philosophy, self-protective techniques, and problem-solving skills...” – students were taught “blocking, escapes, defensive positioning, and balance” but no striking or otherwise aggressive moves (Twemlow, et al., 2008). The study found that the male participants showed a decrease (negative association) in attitudes towards aggression, and increases in empathy towards bullying victims and in “helpful bystander” behaviors (Twemlow, et al., 2008). While there was no significant change for female participants of the Gentle Warrior Program with regard to empathy and bullying, it is suggested that martial arts can also contribute positively to equalizing and empowering girls within the school environment, since girls are seen as equal to their counterparts in terms of both respect and combat in martial arts, and this outlook can be used to reduce negative gender stereotypes (and the associated behaviors) in the classroom (Vockell and Kwak, 1990).

Also important are the following disadvantages associated with implementation of martial arts training:

- 1. Cost.** While martial arts training may be a low-cost endeavor relative to other forms of physical education and/or intervention, there is still a cost factor that must be considered. In addition to costs for uniforms, training equipment, and insurance (if required by school policy), the cost of hiring a professional martial arts instructor or instructors is a vital component. A professional instructor is of absolute necessity for several reasons: to ensure student safety as the highest priority; to properly develop a teaching curriculum that is inclusive of the entire class and correctly incorporates the philosophies and practices of traditional martial arts; and to ensure their commitment to the class as instructor, in order to properly develop a student/teacher relationship that is based in trust and respect (JOPERD, 2000). Unfortunately, these requirements cannot be expected from an amateur or even a volunteer with the same certitude as with a paid professional.
- 2. Injury risk.** With the physical practice of martial arts comes the risk of injury. While serious injuries such as fractures, concussions, or neck injuries are rare, they do occur and must be considered. More prominent are injuries like sprains, bruises, muscle strains and skin abrasions, and more injuries are attributed to karate than any other training style (Demorest and Koutures, 2016). Though injury should rightly be considered a disadvantage of martial arts training, it should also be noted that advancing age is a definite factor in sustaining injury – within the specific disciplines of Shotokan karate, Aikido, taekwondo, kung fu, and tai chi, persons over the age of 18 were found to be four times as likely to sustain injury as persons younger than 18 (Demorest and Koutures, 2016), meaning risk is reduced for school-age children and youth.
- 3. Possible inefficacy.** Many studies can be found which affirm the positive impact of martial arts. Fewer, yet still present, are studies which suggest little to no efficacy of martial arts training in improving aggressive behavior among juveniles (in particular), which may be due to a phenomenon known as *publication bias* – in which studies that yield negative or insignificant findings are less likely to be published than their counterparts (Gubbels, et al., 2016). Available data overwhelmingly support the positive findings regarding martial arts, but careful review of the data (and of available meta-analyses of these studies) shows that the inefficacy of martial arts training as an intervention tool is a very real possibility, and should be kept in consideration.

Implications & Research Opportunities

No studies were located which provided a direct reporting on overall school outcomes as affected by martial arts training – this represents a major opportunity for future research within Jackson Public Schools. Conducting a formal case study of how school outcomes are affected by the inclusion of martial arts training could not only contribute to the field of available data evidence, but could also inform policy at the local level while providing its recognized benefits (most notably, improved physical fitness) to young Mississippians. Pre-requisite to such a study would be: a survey or collection of demographic information to establish what, if any, specific population groups can be effectively sampled or targeted; a review of selected martial arts training styles and their respective recognized benefits; and additional research into evidence-based links between the benefits of martial arts training and desired school outcomes (such as attendance, grade average or testing performance, completion rates, etc.).

Once pre-requisite steps have been satisfied, a cost-benefit analysis is necessary to determine the feasibility of the case study in light of available resources. To illustrate, consider the following scenario – *investigators determine that within the selected geographic school district, the population is sufficient to allow for a target population of youth at high risk for delinquency and/or violence. Further research shows that kenpo karate and taekwondo are two particular training styles which have the benefit of reducing aggression and decreasing risk factors for violence, and taekwondo has lower rates of injury than karate. Investigators next determine that there is adequate funding available to provide for an instructor, training gear, and insurance for the program.* If the subsequent cost-benefit analysis could justify the study, next steps would be:

- a) Program design (*What are the objectives? What kind of training will be used? When and where? What is the duration of the program, and of the class sessions? What size classes? Who will be the instructor(s)?*)
- b) Program implementation
- c) Program evaluation (*Were objectives met? Were there significant changes to outcomes based on program participation?*).

Conclusion

Based on the findings of this preliminary investigation, there is ample data available to support the benefits of martial arts training. Widely available data specific to martial arts training and school outcomes remain elusive or non-existent at this time, but at a minimum, school-aged children and youth can benefit from improved physical fitness and from added philosophical and cognitive skills training. As it relates to the introduction of such programs to Jackson schools, there should be a careful examination and alignment of objectives (improved school outcomes) and demonstrated effects of traditional martial arts training styles, along with careful consideration of resources. However, the proper research and development of such a program to be implemented locally, combined with an objective evaluation process and publication of findings would also have the larger social benefits of both contributing new information to the field, and affirming the City of Jackson as having a sincere and pragmatic approach to evidence-based policymaking.

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