

Martial Arts as a coping strategy for aggressive behaviour in young adolescents

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"The ultimate aim of karate lies neither in victory nor defeat, but in the perfection of the character of its participants."

Master Gichin Funakoshi

"Any technique, however worthy and desirable, becomes a disease when the mind is obsessed with it."

Bruce Lee

"Aggression unopposed becomes a contagious disease."

Jimmy Carter

"Martial Arts help develop patience, responsibility and self-discipline."

Oleg Volk

"You don't have to suffer to be a poet. Adolescence is enough suffering for anyone."

John Ciardi

"A boy becomes an adult three years before his parents think he does, and about two years after he thinks he does."

Lewis B. Hershey

"Aggression is part of the basic equipment of man, but it is also culturally formed, exacerbated, and can be, at least in part, redirected. Our culture is not simply a given, but is also us."

Rollo May, Power and Innocence

Declaration

I, the undersigned, declare that the work in this dissertation is my own original work.

Signature:

Date: 30 January 2009

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Summary

Aggression has many faces in sport. For this reason, it is a complex but fascinating field for studying the nature of aggression.

All athletes have to control and channel aggression constructively into skill in their sport in order to sustain optimal performance. The purpose of this research was to study aggression in sport and determine whether aggressive energies can constructively be expressed in the rules of the game and channelled into a powerful and inspiring performance by the athlete. In sport, any type of aggression can transmute into a destructive force that can debilitate and nullify performance.

Through this study, the researcher wanted to determine if the participation in Martial Arts can reduce aggression and whether progression in belt rank (beginner, intermediate and advanced) in Martial Arts could cause a gradual decrease in the aggressive behaviour of young adolescents. The researcher also wanted to determine if participation in Martial Arts, other than other types of sports activities (for example, hockey) and those

participants absent from any sporting activity, may serve as a deterrent to aggressiveness.

A secondary aim was to determine if Martial Arts could be used as a coping strategy for young adolescents to improve their overall mental wellbeing.

The core focus of this study is to determine if the participation in Martial Arts (specifically Tae Kwon Do) can reduce aggressive tendencies in young adolescents. The researcher chose Tae Kwon Do from the various Martial Arts styles, because Tae Kwon Do has a very broad combination of traditional components or elements of what any Martial Arts program consist of. It also consists of elements that are incorporated within the program that may have the desired outcome on a participant taking part in such a training program. In Martial Arts, the emphasis is on physical fitness, self-confidence and training in mental control. Most combat activities are usually thought of as providing opportunities for the display of competence and masculinity, the development of self-confidence and a release of tension with the sublimation of aggressive impulses. The term “Martial Arts” will be used throughout this study.

The researcher decided on a survey method to carry out this study. Standardised questionnaires were used to determine whether progression in belt rank (beginner, intermediate and advanced) in Martial Arts (group1) could cause a gradual decrease in aggressive behaviour among young adolescents. The results of the analysis of differences between the different levels of Martial Arts showed no statistically significant differences between the levels on all the aggression sub-scales. The personal growth scores, obtained from the responses to the psychological wellbeing questionnaire, were significantly lower for the beginner group than for the other two groups (intermediate and advanced). The results on the psychological wellbeing sub-scales indicated that the personal growth

and self-acceptance scores of the Martial Arts group were significantly higher than those of the other two groups (hockey and non-participation). The group that did not participated in any sporting activity, had the lowest scores. Also to be determined was whether Martial Arts could be used as a coping strategy to improve the overall mental health of these adolescents.

Keywords: Martial Arts, Aggression, Adolescence, Coping Strategies, Psychological Wellbeing, Belt Rank, Psychological Benefits, Tae Kwon Do, Zen, Sport Psychology.

Opsomming

Aggressie het baie fasette in sport en is om hierdie rede 'n komplekse maar interessante veld vir bestudering van die aard van aggressie.

Alle atlete moet aggressie konstruktief beheer en binne die vaardigheid van elke sport kanaliseer om sodoende optimale prestasie te verseker. Die doel van hierdie navorsing was om aggressie in sport te bestudeer en om sodoende te bepaal dat, wanneer uiting aan aggressiewe energie binne die reëls van die spel gegee word asook binne die vaardigheid van die atleet gekanaliseer word, kragtige en inspirerende spel waargeneem kan word. Enige tipe aggressie in sport kan vernietigend word wanneer dit onbeheersd raak en met opset gebruik word om die reëls van die spel te verontagsaam.

Deur middel van hierdie studie, wou die navorser bepaal of deelname aan vegkuns (Martial Arts) aggressie kan verminder en of vordering in belvlak (beginner, intermediêr en gevorderd) in vegkuns (Martial Arts) 'n geleidelike afname in aggressiewe gedrag van die jong adolessent sou meebring. Die navorser wou ook bepaal of deelname aan vegkuns (Martial Arts), in teenstelling met ander tipes sport aktiwiteite, (byvoorbeeld hokkie) en daardie adolessent wat aan geen sport deelneem nie, as 'n voorkoming van aggressie kan dien. 'n Sekondêre doelwit was om te bepaal of die vegkuns as 'n hanteringstrategie vir jong adolessente gebruik kon word om hul algehele geestesgesondheid te verbeter.

Die kern fokus van die studie is om te bepaal of deelname aan vegkuns (spesifiek Tae Kwon Do) aggressiewe geneigdhede in die jong adolessent kan verminder. Onder die verskeie tipes vegkuns is Tae Kwon Do deur die navorser gekies, want Tae Kwon Do

bevat 'n breë kombinasie van tradisionele komponente/elemente waaruit enige vegkunsprogram bestaan. Tae Kwon Do bestaan ook uit elemente wat geïnkorporeer is binne so 'n program wat die verlangde uitwerking op 'n deelnemer kan hê. In hierdie tipe vegkuns word fisieke fiksheid, selfvertroue en verstandelike beheer beklemtoon. Gevegsaktiwiteite (combat activities) word gewoonlik beskou as die aanbied van geleenthede om bekwaamheid, manlikheid en sterkte (krag) ten toon te stel en om spanning deur middel van die sublimasie van aggressiewe impulse te verlig. Die term “Martial Arts” sal regdeur die studie gebruik word.

Die navorser het besluit om 'n opnamemetode te gebruik om die studie uit te voer. Gestandaardiseerde vraelyste is gebruik om te bepaal of vordering in beltvlak (beginner, intermediêr en gevorderd) in vegkuns (groep 1) 'n geleidelike afname in die aggressiewe gedrag onder jong adolessente kan veroorsaak. Resultate van die analise van die verskille in die beltvlakke van vegkuns (beginner, intermediêr en gevorderd) het geen statistiese noemenswaardige verskille getoon tussen die vlakke van al die aggressie subskale nie.

Die “personal growth” tellings, wat verkry is van die terugvoer op die “psychological wellbeing questionnaire”, was noemenswaardig laer vir die beginner groep as vir die ander twee groepe (intermediêr en gevorderd). Resultate op die “psychological wellbeing” subskale wys aan dat die “personal growth” en “self-acceptance” tellings van die vegkungroep noemenswaardig hoër is as die van die ander twee groepe (hokkie en die adolessent wat aan geen sportaktiwiteit deelgeneem het nie). Die groep wat aan geen sport deelgeneem het nie, het die laagste tellings getoon.

Wat die navorser ook wou bepaal, was of vegkuns gebruik kan word as 'n hanteringstrategie om die algehele geestesgesondheid van hierdie adolessente te verbeter.

Sleutelwoorde: Martial Arts (vegkuns), Aggressie, Adolessensie, Hanteringstrategieë, Sielkundige Welstand, Belt Vlak, Sielkundige Voordele, Tae Kwon Do, Zen, Sport Sielkunde.

Chapter 1

Problem statement and research goal

1.1 Introduction

When looking at the overwhelmingly large body of research information and literature on aggression, it is clear that aggression has a complex, controversial and evasive nature (Potgieter & Steyn, 1986).

Aggression is difficult to define and to research because it is one of the deepest dimensions of human emotion. Aggression is essentially part of being human and is an inseparable part of human nature, moral values, subjectivity and responsibility (Potgieter & Steyn, 1986).

Behaviour intended to harm another living being (either physically or emotionally) could be labelled as aggression, but a reasonable expectation that the attempt to inflict bodily harm will be successful, must be present (Zillmann, 1979).

To place the incidence of violence in sport in a more sport-psychological context, the researcher decided on using Martial Arts as a sports type which provides a socially acceptable outlet for aggression as a means of trying to help young adolescents decrease their aggressiveness.

A survey method was selected for conducting this study to determine whether progression in belt rank (beginner, intermediate and advanced) in Martial Arts can lead to a gradual decrease in the aggressive behaviour of young adolescents.

The researcher also wanted to determine whether Martial Arts could be used as a coping strategy for young adolescents to improve their overall mental wellbeing. Participants in any Martial Arts programme have a high level of self-control over the real aggressive behaviour that they display, in spite of the aggressive nature of each technique (Potgieter & Steyn, 1986).

The purpose of the study was to investigate the impact that a Martial Arts programme has on aggression and to determine whether such a programme could serve as a “release” or outlet for pent-up aggressive feelings. When aggression is unopposed, it tends to become a contagious disease. For this reason, the researcher decided on a study which could be beneficial to society, using a sports type such as Martial Arts which could serve as a deterrent to aggressive behaviour (Potgieter & Steyn, 1986).

Finkenburg (1990) suggests that Martial Arts training has many psychological benefits, such as enhanced self-esteem, self-concept (enhanced through the acquisition or mastery of a new skill), reduced aggressiveness, decreased anxiety and an increase in personal independence. All this psychological benefits can contribute to an individual’s overall life satisfaction and it will most definitely complement happiness about functioning more positively (Andrews & Witley, 1976; Campbell, Converse & Rodgers, 1976; Andrews & McKennell, 1980; Byrant & Veroff, 1982).

According to Prof. JR Lee-Barron of the Faculty of Martial Arts at the Knightsbridge University Sport Science Department, adolescence is the period in everyone's lives when we search for clarification of our own individual identity, in other words we seek to "find ourselves". Finding ourselves is a prerequisite for moving forward in our lives. To help them in this task, a Martial Arts training program equip the adolescent with the confidence, purpose and direction they will need (<http://www.institute-of-martialarts-and-sciences.com>).

According to Campbell *et al.*, (1976), life satisfaction reflects an individual's perceived distance from his or her aspirations. Therefore, life satisfaction can be defined as a judgmental, long-term assessment of one's life. There is a possibility that people who control their aggression may think more clearly and enjoy the company of other people more fully.

The term adolescence is derived from the Latin word "adolescere" which means "to grow up" or "to grow to adulthood". In South Africa, adolescence ends in terms of law when the adolescent reaches voting age (18 years) and becomes an independent adult and therefore no longer needing parental consent.

Gouws and Kruger (1994) state that on a psychological basis, adolescence ends when there is certainty about identity, when adolescents become emotionally independent from their parents, when they develop their own morals and when their relationships are based on love and friendship.

Danish, Petipas and Hale (in Van Raatle & Brewer, 1996) assert that adolescents can avoid harmful behaviour when they can acquire alternative options. Sport may therefore serve as a metaphor to teach adolescents health-strengthening behaviour. According to Séguin, Arseneault, Boulerice, Harden and Tremblay (2002), children in mid-to-late childhood who are aggressive are likely to be aggressive in adolescence. Too many of today's children have straight teeth and crooked morals.

The famous Okinawan karate master, Funakoshi (1915) (in Haines, 1995), claims there is nothing more important than one's behaviour and one's humanity as observed in daily life; no matter how one may excel in the art of karate and scholastic endeavours. It is important for one to become part of the change one would like to see in this world.

For this reason, the purpose of this research was to study the progression in belt rank in Martial Arts to see whether this progression would lead to a gradual decrease in the aggressiveness of youngsters participating in this type of sport. The research was aimed at determining whether Martial Arts could serve as a coping strategy to improve the overall mental health/psychological wellbeing of these adolescents.

1.2 Motivation for the study

Van Raatle and Brewer (1996) believe that participation in sport may prepare individuals for more mature roles later in their lives. Sport can be used to teach young people to live by the rules and work hard to achieve their goals. Individuals can apply the life skills learned in sports to other domains in their lives. The mission or aim of sport is to change children's lives for the better. Sport can be regarded as a relatively safe environment

where individuals may experience awareness, learn coping skills, escape from and understand the effective development phase that increases aggression, anxiety, pain, pleasure and happiness (Danish, Nellen & Owens, 1996).

The media often creates the impression that participation in sport keeps children out of trouble and that sport can be used to build character. In the same media, whether they be radio, television or newspaper media, we also hear, see or read about athletes who do get into trouble and demonstrate that years of playing sport have not prevented them from being aggressive. Making sense of this conflicting and contradictory information was the researcher's motivation for undertaking this study.

Adolescence can be regarded as a highly contentious time in an individual's life, as it is characterised by many changes in different areas of personal development (Heaven & Callan, 1990). Taking part in sport may give adolescents a safe haven where they can have an opportunity to "find" themselves and become more aware of themselves. This may also lead to a better understanding, comprehension, revision and even solutions for problematic aspects of situations and life as a whole.

Drug-related and gang-related peer pressure seems to be increasing in some schools in townships as well as in other areas. This may be due to the high percentage of adolescents who have no family structure, leading to little or no guidance and direction for youngsters living in these situations. Most of the time there are no positive role models, not even in schools. These youngsters have often lost all sense of hope because they feel they have no future. The value of life itself is often non-existent for these adolescents (Brooks-Gunn & Duncan, 1997).

These realities have been the most important motivator for the study, as the results of research may in all likelihood indicate that today's adolescents need coping strategies which could be learned in a sport context. Participation in any sport activity could improve relaxation and therefore, counteract the symptoms of anxiety and aggression (Lariviere & Sydney, as cited in Morris & Summers, 1995).

The researcher is familiar with and competent in several sports, especially Tae Kwon Do, and has also been involved for about four months in coaching participants in Tae Kwon Do. This could be regarded as a positive factor within this research, because it increases an understanding of the participants' experience.

Finally, the aim of this study was to contribute to previous research by providing knowledge about the impact that sport in general but specifically the impact that Martial Arts can have on the aggressiveness of young adolescents. Not only may there be a change in the behaviour of the athlete, but there may also be a better understanding of this behaviour as well as an improvement in sport performance. Furthermore, this study identifies possible areas for future research because most references used for carrying out this study were published quite a long time ago for this specific age group (15-18 years).

1.3 Problem statement

“A culture can produce highly aggressive people by valuing aggressive accomplishment, furnishing successful models and ensuring that aggressive actions secure rewarding effects” (Bandura, 1973: 59). This cultural attitude may be one of the reasons that aggressiveness is such a problem in today's society.

Literature on the commencement of aggression has been largely overlooked by sport psychology. Research on aggression is more complex than most of the simplified models that sports scientists have commonly used. *“In the area of aggression, there is great need for high-quality research which will help find better ways for its control”* (Singer, Murphey & Tennant, 1993: 375).

There are few articles dealing with Martial Arts in psychological journals. Fuller (1988) asserts that this limitation is to some extent due to a misrepresentation of the Martial Arts in the popular media. The “Kung Fu” and Ninja movies, such as *Power Rangers* and *Teenage Mutant Ninja Turtles*, contain images not associated with concepts of reduced aggression, enhanced self-concept or inner peace. These movies in particular present a problem when trying to assist youngsters to cope with aggressive feelings. How can it be possible for a contact sport that looks like the most aggressive of all kinds of sport, when judged from the outside, to reduce aggressive behaviour?

The reason for asking this question in the present study is the information contained in Potgieter and Steyn (1986), who give the example of karate to indicate that men’s view of life and the world is connected not only to the aggression of the world, but also to the control of aggression in sport. This gives rise to the relevant question the researcher asks, namely, what influence does learning to fight have on aggression? Does participation in Martial Arts reduce aggressive behaviour in young adolescents? Can we conclude that Martial Arts serve as a coping strategy to improve mental health? Do aggressive acts have a facilitating force on performance or a debilitating effect on young adolescents?

1.4 Aim

The aim of the study is:

- To determine whether Martial Arts will reduce the tendency to endorse aggressive acts
- To see if participants of Martial Arts (Tae Kwon Do) at different levels of performance (beginner, intermediate and advanced), would respond differently to aggressive encounters
- To determine the difference in aggression levels between practitioners of Martial Arts (Tae Kwon Do), sport participation (hockey) and those not participating in any sporting activity
- To distinguish whether Martial Arts participants could improve their overall wellbeing
- To make people aware of the numerous benefits that a Martial Arts (Tae Kwon Do) training can offer to the children of today
- To critically review existing research and suggests future researchable matters within this field.

1.5 Hypothesis

The following hypothesis was formulated based on the literature study and the researcher's personal experience:

1.5.1 Hypothesis 1

Participation in Martial Arts can reduce the tendency to endorse aggressive acts.

Rationale

According to Nathan and Gatlin (2004), many people would resist having a Martial Arts programme in their children's schools for fear that teaching already troubled children how to fight with their bare hands and feet would aggravate this problem.

Advantages of the Martial Arts disciplines include working out any bottled-up aggression. Aggressive behaviour is discouraged outside of the Martial Arts class. Martial Arts help strengthen self-confidence since children who "bully" others often have self-esteem issues (Nathan & Gatlin, 2004).

1.5.2 Hypothesis 2

Progression in different levels (beginner, intermediate and advanced) in Martial Arts produces a different response to aggressive encounters.

Rationale

According to Kurian, Verdi, Caterino and Kulhavy (1994), the longer the Martial Artist participated in Martial Arts and moved up in belt rank, the higher the Artist's levels of self-reliance and optimism would be. Also to be found through their study was that higher belt ranking in Martial Arts, (especially Tae Kwon Do), was associated with more positive attitudes towards life.

1.5.3 Hypothesis 3

Martial Arts will reduce aggressiveness in young adolescents as opposed to other sports such as hockey and non- participation in sporting activities.

Rationale

It has been found by Daniels and Thornton (1992) that athletes whom participated in a Martial Arts program, displayed a larger decrease in hostility over time than athletes participating in other sporting activities such as hockey or rugby.

These authors asserted that athletes participating in a Martial Arts program demonstrated high levels of respect towards their sensei, the dojo and each other and showed relative importance toward the kata.

1.5.4 Hypothesis 4

A Martial Arts programme can serve as a coping strategy to improve overall mental wellbeing.

Rationale

In the West, Martial Arts have a long history of training and discipline. According to Nosanchuk (1981), early sociological studies on Martial Arts training focused on the fact that participation in Martial Arts actually worked to reduce participants' aggression.

Konzak and Klavora's (1980), subsequent research into personalities and lives of Martial Arts participants focused on their self-esteem and self-image levels, and suggested that Martial Arts participants tended to be more psychologically healthy and well adjusted individuals.

Research done by Becker (1992) suggests that Martial Arts have a direct bearing on morality, disciplined ritual and knowledge of man in the universe.

According to Boudreau (1995), the parents of Martial Artists reported improved physical wellbeing and improved self-confidence as well as many other psychological benefits attributable to the training.

1.5.5 Hypothesis 5

Basic elements in Martial Arts (Tae Kwon Do) training produces decreases in aggression.

Rationale

Training in Tae Kwon Do not only incorporates fighting strategies such as sparring and self-defense, but also elements such as meditation/relaxation, sparring, step exercises, forms (kata) and basic skills training (blocks, strikes and kicks).

Interestingly, when the emphasis of training is on the fighting elements (such as self-defense) only, increases in aggression are actually exhibited.

1.6 Definition of concepts

1.6.1 Explanation of sports

Sports are institutionalised, competitive activities that involve vigorous physical exertion or the use of relatively complex physical skill by participants motivated by internal and external rewards (Coakley, 2003).

Sports are played at sites where young people often have powerful and exciting physical and social experiences. Good outcomes are likely when sports are organised in order to provide young people with thoughtful guidance from adults. These adults should be sensitive to young people's needs, including the development of self-respect and becoming part of the rest of the community. Good outcomes are unlikely when playing sports separates athletes from the rest of the community and fosters hyper-conformity to the norms of the sports culture (Snyder, 1994 in Coakley, 2003).

1.6.2 Sport participation as a therapy

Mental health and peace of mind can be promoted through participation in sport. Sport may be used to cope with natural hostilities and aggressiveness. Sports activities may also play a role in reducing delinquency, crime and violence (Campbell *et al.*, 1976).

Millions of children across the world take part in some form of organised sport. This widespread involvement of youth in organised sports has created wide speculation and controversy about the psychological consequences of participation in sports (Brustad, 1993). Fuller (1988) advocates the view that Martial Arts can be seen as some type of psychotherapy and thus serves as a coping strategy for delinquency.

1.6.3 Aggression

Aggression is a form of behaviour directed at the goal of harming or injuring another living being who is motivated to avoid such treatment (Zillman, 1979 in Potgieter & Steyn, 1986).

Learned experience is an important determinant of aggressive behaviour in humans (Bandura, 1973). Elicitors of aggression such as personal insults, threats to status and the presence of weapons are all learned forms of aggressive behaviour.

Furthermore, aggressive actions are often followed by rewards and are therefore likely to be repeated. Children learn that aggression can enable them to control resources, such as toys and parental attention.

Children also learn aggression by observing others behaving aggressively (Smith, Smoll & Hunt, 1977; Hanin, 1980, 1992; Isberg, 1985; Spielberger, Reheiser & Sydeman, 1995). The violent behaviour of some teenage gangs provides an aggressive role model to their younger members. Children whose parents use physical force as discipline tend to use more physical aggression when interacting with others, and parents who abuse their children were generally abused children themselves.

The influence of the mass media, especially television, on promoting aggressive behaviour is not yet well understood, but some research evidence indicates that, in children, watching violent entertainment is linked to subsequent aggression (Grossman & DeGaetano, 1999).

There are various types of aggression. *Instrumental aggression*: in this type of aggression, the person is goal orientated (seeks harm as a means to another end, for example money, control or status). This type of aggression occurs during theft or war (also called felonious aggression) (Anshel, 1990). *Hostile or teasing/emotional aggression*: directed toward another and harm is intended (Cox, 2002). *Defensive*

aggression: this occurs when a person is attacked or provoked. *Games aggression*: this aggression occurs when one deliberately tries to injure another person during a sporting venture. *Dissocial aggression*: this type of aggression is associated with gang behaviour. *Bizarre aggression*: this is due to psychopathic behaviour (Potgieter & Steyn, 1986). *Assertive Aggression (intimidation)*: Assertiveness considers the rights and needs of everybody. It assumes that everyone is equal. Assertiveness can be thought of as a method of increasing choices for everyone (Back & Back, 1982).

1.6.4 Martial Arts

Martial Arts are inclined or predisposed to war, pertaining to or connected with the army. Martial Arts refer to or are “related to” the military. As such, the connotations of the term “Martial Arts” would be “the arts/skills related to military” (Frommer, 1978).

Martial Arts are seen as a system of combat and self-defence, for example judo, or karate, which was developed especially in Japan and Korea and is now usually practised as a sport. Martial Arts are various methods of unarmed combat, originally used in warfare in East Asia and shaped by Eastern Asian philosophical concepts. The highest skill is not winning one hundred victories in one hundred battles. The highest skill is to subdue the enemy without fighting (Frommer, 1978).

Tae Kwon Do is the type of Martial Arts used throughout the study because Tae Kwon Do consists of all the components of Martial Arts styles being practiced today. In Korean language, Tae means “kick or destroy with the foot”. Kwon means “smash with the hand/fist” and Do means “way/art”. Tae Kwon Do thus means “way of the foot and fist”.

Tae Kwon Do is the scientific use of the body in the method of self defence; a body that has gained the ultimate use of its facilities through intensive physical and mental training (<http://koreantaekwondo.tripod.com/>).

1.6.5 Psychological wellbeing

Mental wellbeing can be defined as the capacity to think rationally and logically, and to cope with the transitions, stresses, traumas, and losses that occur in everyday lives, in ways that allow emotional stability and growth. In general, mentally healthy individuals value themselves, perceive reality as it is, accept its limitations and possibilities, respond to its challenges, carry out their responsibilities, establish and maintain close relationships, deal reasonably with others, pursue work that suits their talent and training, and feel a sense of fulfilment that makes the efforts of daily living worthwhile (Hales & Hales, 1995: 34).

Research has demonstrated that regular exercise and sport promote psychological wellbeing, where such activities occur for at least 20 minutes a day, three or more times a week (Scully, Kremer, Meade, Graham & Dudgeon, 1998; Biddle, Fox & Boutcher, 2000).

Improved psychological wellbeing has been found with swimming, yoga and fencing (Berger & Owen, 1998), rugby (Maynard & Howe, 1987), karate and weight training (McGowan, Pierce & Jordan, 1991).

1.6.6 Coping strategies

Coping strategies refer to the use of physiological, cognitive, behavioural and emotional efforts in an attempt to improve an athlete's performance (Park, 2000).

It is not only desirable but also possible to learn how to cope with aggressive behaviour and in doing so, increases one's potential for success.

Several strategies are mentioned in a newspaper article (written by Dr. Len Miller (1982) in *The Daily Pennsylvanian*) that adolescents in particular can use to help them cope with daily stressors. These coping strategies include the following:

- *Relaxation*

The adolescent should be able to alternate a feeling of relaxation and wellbeing for feelings of tenseness. This would increase the effectiveness of the tasks at hand.

- *Breathing*

Proper breathing can reduce feelings of aggression and depression because of the rise in oxygen levels.

- *Refuting illogical, irrational ideas*

Martial Arts teach participants to refuse to believe in any false ideas.

- *Assertiveness*

When adolescents learn how to be bold during interaction with others, it will help them to diminish feelings of aggression or tension.

- *Exercise*

Exercise is an excellent foundation for eliminating the tension that may be the trigger or cause of feelings of aggression.

The coping strategies mentioned above are contained in any Martial Arts training programme (<http://www.thedailypennsylvanian/archives.com>).

1.7 Outline of chapters

In the previous section, the reasons and motivation for conducting this study are discussed. The main reason for this study was that the results of research would be likely to demonstrate that today's adolescents need coping strategies that could be learned in the sports context.

The researcher decided on this particular study in order to contribute to previous research by providing knowledge about the impact that progression through the different levels in Martial Arts (beginner, intermediate and advanced) has on the aggressiveness of young adolescents in particular and other participants in sport in general.

Chapter 2 covers the literature review, and tends to support the core argument of this study, that progression through the different levels in Martial Arts could serve as a

deterrent for aggressive behaviour in young adolescents. The researcher found that if this were indeed true, Martial Arts could be used as a coping strategy for aggressive behaviour and in this way could improve the overall mental health and wellbeing of these young participants.

Chapter 3 explains the research methodology used in this study. The use of the different measuring instruments is discussed and applied throughout the study. The statistical procedures are discussed, along with the results.

Chapter 4 discusses the findings regarding what the research tested by means of the various questionnaires.

In Chapter 5 the researcher considers the finding that when all the components are included in the Martial Arts programme, it can be used as a “treatment” to help decrease aggressive behaviour in young adolescents. Recommendations for future research are made.

Chapter 2

Literature review

2.1 Introduction

Aggression is more easily associated with sports in which athletes are in physical contact with each other, and where achieving physical dominance can contribute significantly to the likelihood of success, for example boxing and rugby (Kirker, Tenenbaum & Mattson, 2000). Aggressive acts can often be observed in a competitive sport environment (Lavalley, Williams & Jones, 2008).

Aggression is a particularly interesting area of study because of its moral issues. There are many psychologists whom would agree with the sentiments expressed by Tenenbaum, Sacks, Miller, Golden and Doolin (2000: 318) who suggest that *“...behaviours intended to harm another are unacceptable in any contact or non-contact sport.”*

In Martial Arts one learns: to know one's self when placed in a very realistic situation and be taught how to deal with these situations as they arise, how to defuse situations, how to protect others and deal with an attack in the most expedient way.

In this chapter, the arts of Tae Kwon Do and specialist forms (kata) created by the master, are explored. Martial Arts training is mental as well as physical. It emphasizes the participants' ability to relax the mind and body even under the stress of dangerous situations. This will be discussed later in this chapter.

Tae Kwon Do, as a Martial Art, is concerned not only with the fighting ability of the participant, but also with the betterment of their daily lives. This mental aspect is of key importance to Martial Arts practitioners (Hyams, 1979).

2.2 Aggression in sport

Aggression is a term extensively used in sport. Aggressive acts can be defined as those in which the athlete is highly motivated, demonstrates a great release of physical energy and is not inhibited by a fear of potential failure or injury. Proximate intent to harm another person is what aggression entails (Berkowitz, 1993; Baron & Richardson, 1994; Geen, 1998; Anderson & Bushman, 2002). Therefore, it can be safely notified that aggression without the behaviour, are not aggression and behaviour that harms another person, without the intent, is not aggression.

Aggression is an expression of inner tension – where the external situation is irrelevant (Lorenz, 1969). Dollard, Miller, Doob, Mourer and Sears (1939: 9) suggest in their *frustration-aggression hypothesis* that all aggression, which results from frustration produced by the environment, is “*a sequence of behaviour, the goal response to which is the injury of the person toward whom it is diverted*”. A readiness for aggressive behaviour can be created by frustration (Berkowitz, 1964). According to Bandura (1973),

every increase in the level of physiological activations under these circumstances, whether or not frustration is present, can lead to higher levels of aggression.

Lorenz (1966) considers aggression to be a normal and fundamental instinct with clear functions that lead to survival possibilities for the species. Lorenz (1966) asserts that aggression is healthy, necessary and inborn. Aggression is therefore a manifestation of instincts in terms of Freud's (1925) *instinct theory*. This strengthens the idea that sporting competitions are necessary to allow aggressive tendencies to be expressed in a socially acceptable way. However, Lorenz (1966) views sport as having more value than simply providing an outlet for aggression. He states: "*It educates man to a conscious and responsible control of his own fighting behaviour*" (Lorenz, 1966: 271).

Many people believe that one should participate in various sporting activities so that one can discharge one's aggressive behaviour in controlled situations. Sport participation should therefore lead to a reduction in the need to be aggressive. This argument is part of the *catharsis hypothesis*. Catharsis comes from the Greek word "kathairein" which means "to cleanse". The release of aggressive behaviour is led by catharsis. The catharsis hypothesis predicts that through the expression of aggression, bottled-up emotions can be discharged or purged (Berkowitz, 1970). March (1975) states that even if behaviour such as aggression is condemned by the rest of the society, it will be copied because aggressive behaviour demands respect.

Bearing in mind the *social learning theory*, coaches often describe desirable athletes as those who are hungry and aggressive competitors (Bandura, 1986). The coach's role in the behaviour of the athlete is crucial because the athlete could model the coach's

behaviour and act in precisely the same way (Cox, 2002). The coach should help an athlete so that the athlete can understand and deal with frustration and aggression (Potgieter, 2003). The athlete must feel a connectedness to a respected instructor. This type of attachment creates a positive affiliation and a growing sense of goodness and control. The “bad” ethics of stress or a pathological family are slowly replaced by the “good” ethics of the teacher. Regets (1990) states that the sensei or coach acts as a role model and "leads by example".

Athletes are put under such great pressure (not only from the coach, but also from their parents) that they are willing to sacrifice their bodies and take risks in the pursuit of affirmation and approval. When coaches encourages this recklessness (either naively or intentionally), they promote dangerous forms of deviance. Coaches should be the primary role model for the athlete and act as a sport psychologist and specialist in their field to help athletes create their own boundaries and limits. *“I feel like I’ve been coached that way my whole life – to play dirty and to play mean”* (Jeremy Shockey, NFL player, cited in Lieber, 2003: 1C).

The coach or sensei can therefore help to develop and apply sport psychology and make coping strategies available to young athletes so that they can control or curb their aggressive feelings.

Several studies have demonstrated that there is a tangible correlation between violent entertainment and violent behaviour. From exposure to screen violence, three basic negative effects were found, namely an increase in aggression, fear and insensitivity to real life and screen violence, with increased aggression being the most direct effect (Paik & Comstock, 1994).

Children's long-term exposure to violent television and movies makes them easy bait for the conditioning effects of violent video games (Grossman & DeGaetano, 1999). Continuous violent imagery breaks down the "violence immune system" and a fixation with violent on-screen images can alter the brain's alert system, causing greater hyperactivity and impulsive behaviours.

But the obvious problem is that children in general lack the necessary self-control and wisdom to handle their own violent impulses. When given a powerful tool of destruction, many children would use it (Anderson & Bushman, 2002). An example could be taken from the popular TV program *Carte Blanche* where it was programmed on the 8th of June 2008 that children are taking so much information from technology (TV, computers, etc), and therefore do not necessarily have the right or correct way of using/applying it constructively. Even brief exposure to violent TV or movie scenes causes a significant increase in aggression. Repeatedly exposing children to media violence increases their aggressiveness as young adults, as media violence is a significant risk factor in youth violence (Anderson & Bushman, 2002).

Our culture's fascination with media violence is an explosive mix which is visible everywhere today, from children's toys to Martial Arts blockbusters such as *Karate Kid* and *Kung Fu*.

Over the past couple of decades, Martial Arts have gained increasing popularity. According to Greenberg (2000) and Warren (1993), Martial Arts organizations reported increases ranging from 15% a year to 400% in three years. According to Grady (2002), Martial Arts have gained increasing popularity in movies and as sporting events. Portrayals of Martial Arts in movies range from sociopathic (Martial Arts villains who kill and maim without reluctance), to the violently heroic (Bruce Lee and Jackie Chan).

This study attempts to start answering the question of the effects Martial Arts participation has on adolescent development (Sim, 2002).

Rothperi (1980), Nosanchuk (1981) and Nosanchuk and Macneil (1989) assert that Martial Arts can be correlated with a decrease in levels of aggression for participation of all ages. Media specialists decry the lack of respect in our nation's youth (Kwon, 1998; Griffen, 2001).

Therefore, we can safely say that the media give the public the impression that Martial Arts are in fact "causing" aggressiveness in children nowadays (Zillmann & Weaver, 1999). Young children are particularly vulnerable, as they are open to new experiences. It is entirely natural for a child learning karate to try to copy the behaviour of Ninja Turtles or some Eastern leader who happens to practise Martial Arts.

2.3 The essential nature of Martial Arts

This study endeavoured to address aggressive behaviour as a function of Tae Kwon Do ranking and investigate the relationship between aggressive behaviour and advancement through the belt ranks among athletes in the ATA (American Tae Kwon Do Association). Kurian, Verdi, Caterino and Kulhavy (1994) claim that the longer a Martial Arts student participated in Martial Arts and moved up in belt rank, the higher the student's levels of self-reliance and optimism. They also found in their study that higher belt rank in Martial Arts, especially Tae Kwon Do, was associated with more positive attitudes towards life. A row of belts on the studio wall displays the hierarchy. Between the universal white (for beginners) and desirable black (for experts), each style has its own sequence of colours, some with intermediate stripes within a rank. A basic assumption made by Tae Kwon Do participants is that a black belt is nothing more than a belt that goes around your waist, but being a black belt is a state of mind and attitude.

A period of one and a half years of Martial Arts training is long enough for even the less-dedicated participants to have adopted a good portion of the cognitions and mind sets encouraged by the Martial Arts club. After the one and a half years, the perfecting and refining of skills (both mental and physical) follow. Martial Artists have a certain code of conduct that is chanted after every Martial Arts class and consists of the following: the black belt is not a mark or a symbol of the end of the journey to one's mastery of the arts; but the mark that one has finished packing for the journey and may now take the first step in one's true journey. This is a journey that cannot ever be completed, only travelled (<http://koreantaekwondo.tripod.com/>).

The core philosophy of Martial Arts stresses the vital importance of a healthy mind and healthy body, necessary to lead a productive life. Training in Martial Arts replaces many missing elements of the participants' lives including the following (Haines, 1995):

- A chance to set and reach goals. Martial Arts are considered a learning curve for setting and reaching realistic goals
- Physical and mental conditioning. Every sport has a mental component. Martial Arts not only train participants in physical activity, but also train the mind to better overall physical performance
- Encouragement for participants to resolve conflict productively
- Avoidance of participating in gang related activities and choose a drug-free lifestyle are also learned from any Martial Arts programme
- A feeling of hope for the future. When most of the adolescents have vulnerability for feelings of hopelessness, Martial Arts generate feelings of hope for the future and will therefore help adolescents to believe in themselves.

Factors that are taught by any Martial Arts training programme are essentially discussed by Grossman and DeGaetano (1999):

- *Discipline* – although they will never ask for it, all children long for discipline. Martial Arts teach children how to discipline themselves and show them how critical a tool discipline is for achieving their desired goals.
- *Instilling a sense of belonging* – because many of inner-city children feel they do not fit in anywhere else, they turn to gang-related groups. A sense of belonging is therefore an integral part of everyone's life. When these children choose a Martial Arts programme, they earn the right to belong to the TEAM – "T" for truth, "E" for esteem, "A" for attitude and "M" for motivation.
- *Setting reachable goals* – the instructor sets small goals for each student to strive for which will help the participants realise they can in fact succeed.
- *Create reflective individuals* – an environment where children can recognise their insecurities and develop a sense of responsibility towards themselves and others.

One of the goals of Tae Kwon Do and also of other types of Martial Arts is to enter a zazen meditational state so that the everyday experience of the dualism of subject and object vanishes. World-champion Martial Arts master, Chuck Norris, (famous for his role as Walker on the CBS TV show, *Walker, Texas Ranger*), confirms this statement in his book, *the Secret Power Within*, where he states that the ancient system of Zen (the present) is the core philosophy behind the Martial Arts (Norris, 1997). In his book he shows readers how Zen can be applicable to everyday situations.

The core philosophy behind the Martial Arts can help each of us achieve spiritual harmony and real self-confidence (Richman & Rehberg, 1986). Trulson (1986) reports that traditional Martial Arts training are far more beneficial than modern Martial Arts training. The findings of Nosanchuk and Macneil (1989) confirm this belief by pointing out that non-traditional Martial Arts training tends to increase aggression.

According to Brown, Wang, Ward, Ebbeling, Fortlage, Puleo, Benson and Rippe (1995), training in any Martial Arts programme also uses visualisation techniques, meditation, breathing exercises, stretching and movement to teach how mind and body are connected and interact.

Any Martial Arts programme addresses the need for training and developing skill in self-control and self-discipline, close interaction with adult role models of positive behaviour, positive development and involvement in activities for which he/she receives positive recognition (Brown *et al.*, 1995).

The 20 principles of Master Gichin Funakoshi (1915) (in Haines, 1995) are listed below:

- Never forget that Martial Arts begin and end with respect
- There is no first attack in Martial Arts
- Martial Arts foster righteousness
- First know yourself and then know others
- Focus on improving your mental technique, rather than your physical technique
- Let your mind roam freely
- Inattention and neglect causes misfortune

- Never think that Martial Arts is practised only in the dojo
- Martial Arts are a life-long pursuit
- Everything you encounter is an aspect of Martial Arts: find the wonderful truth there
- Martial Arts are like boiling water. If you do not keep the flame high, it turns tepid
- Do not think about winning, but think about not losing
- Respond in accordance to your opponent
- Wage the battle with natural strategy
- Regard your hands and feet as sharp swords
- Step out the door and you face 10 000 foes
- Learn various stances as a beginner but then rely on a natural posture
- The kata must always be practised correctly. Real combat is another matter
- Never forget your own strengths and weakness, the limitations of your body, and the relative quality of your techniques
- Continuously polish your mind.

2.4 Martial Arts

2.4.1 Early research findings on Martial Arts and aggression

According to Kurian *et al.*, (1994), there is an abundance of opportunities to replicate previous studies using Tae Kwon Do participants. Psychological research literature is very minimal with regards to Tae Kwon Do. Numerous studies have investigated other aspects of mental health derived from training in other Martial Arts styles such as karate, judo and kung fu.

Lack of research may be due to the difficulties that arise in understanding what may often seem to be very foreign concepts. Social scientists have looked into the Martial Artists long standing claims of improving both physical and psychological wellbeing along several dimensions.

The number of articles found dealing with Martial Arts in psychological journals, remains limited even though research supports many of these claims.

However, there is a rapidly growing interest in Tae Kwon Do since its inception as an official Olympic medal-contending sport (Kurian *et al.*, 1994).

2.4.2 Recent research findings on Martial Arts and aggression

Over the last 50 years, our society has become increasingly interested in Martial Arts. Finally, we are starting to realize all the wonderful benefits that Martial Arts have to offer.

The length of training for traditionally trained students varied inversely with aggressiveness whereas the students whom were trained in a “modern” style, length of training and aggressiveness are related directly (Nosanchuk & MacNeil 1989).

According to Nosanchuk and Macneil (1989), elements such as philosophy of the art, meditation and emphasis on the kata (forms of combat etc.), that are present in traditional approaches to Martial Arts but absent in modern approaches, act to reduce aggression levels of participants.

Coaches and parents came to the realisation that children (aged 4-10 years) are still busy understanding their feelings (both their own and those around them), which is of vital importance, and which will aid them in eventually becoming well-balanced adults (http://www.louisvillemartialarts.net/shaolin_kempo_karate-KIDS.php).

Instructors in Martial Arts programmes should show constant support and offer plenty of reassurance to toddlers so that they can learn a sense of self and also develop confidence.

2.4.3 Martial Arts and aggression

No Martial Arts programme should be taught unless it contains various essential factors. These factors are all part of the Martial Arts philosophy and include the following: bowing (the opening ritual of respect), specific methods of concentration, meditation and breath control, emptying the mind, visualising yourself doing the kata or prescribed forms, calling your teacher "master" centring in the ki, and trying to "flow" with the "oneness" of nature and your inner self.

Practising the Martial Arts without absorbing at least some of these influences is like trying to swim in a river without getting wet. In Martial Arts the participants are taught without the aim to "win". Therefore, mindfulness is emphasised instead of mindlessness, where mindfulness is available only to the philosophy (to govern the behaviour of those who embrace its empowering practice that accepts no limitations in behaviour). A terrible imbalance, which is usually reflected in attitude, character and behaviour, is created when Martial Arts are learned without their corresponding philosophy (Weiser, Kutz, Kutz & Weiser, 1995). For this reason, the aim of this study is to determine

whether participation in Martial Arts, combined with all the factors mentioned above, can decrease aggressiveness in young adolescents.

The problem is that if aggression is an innate, fixed, biological fate, then learning a fighting art would have no effect on aggressive behaviour at all. The relevant question that has to be asked becomes: “What effect does learning to fight have on aggression?” The answer to this question is far from simple. The effects that training in the Martial Arts has on the way the trained person views the actions received, with regard to both the judgement of aggression and the likelihood of revenge for a perceived attack, are being examined. The judgement of a third-party observer may also be affected by training in the fighting arts. Martial Arts, especially Russian Martial Arts, remind us that we are capable of a spontaneous, innovative, original response to every conflict situation and that the learning environment is based on simplicity, fairness and pure enjoyment (Delva-Tauilili, 1995).

Brown *et al.*, (1995) comment that practice in the Martial Arts can cultivate decreases in anger. Madden (1995) states that participation in Martial Arts lessens the feeling of being vulnerable to attack.

Two other elements of a Martial Arts programme incorporated to treat aggressiveness successfully are based on an organising framework (helping the participants to understand the world they live in) and a sense of history (which causes a shift from a narrow, narcissistic perspective to one that is broader and more companionable among aggressive children) (Skelton, Glynn & Berta, 1991).

To conclude from the above, any Martial Arts programme could provide the athlete with an appealing and positive activity, which is particularly suitable for adolescents who may take part in this activity after school hours when the risk of delinquent behaviour (including aggressiveness, antisocial and even criminal behaviour) is exceptionally high. Many of these athletes are at great risk of delinquency (misbehaviour, including aggressiveness) owing to poverty and inharmonious family situations.

2.5 Sport psychological interventions and aggression

“The mind is the athlete, the body is simply the means it uses to run faster or longer, jump higher, shoot straighter, kick better, swim harder, hit further or box better”
(Courtney, 1992 in Murphy, 2005: IX).

Currently, the practice of sport psychology focuses on enhancing the performance of an athlete. It helps the athlete to attain more consistently strong performances through the partnership between the coach, athlete and the sport psychologist. Sport psychology has become more recognized as a profession and imitates the common goals of mental skills training (Murphy, 2005).

“Although this mental preparation seemed like a very logical area for us to tackle, it was not treated with quite the same urgency, or even seriousness, by our senior management. Who needs a sport psychologist? We all know what we need to know. I’ve played plenty of sport. Sure, we need a physical fitness person for the crew, but why should we have anyone screwing around with our minds? We’re all tough enough ourselves. We can handle it. I could sense their attitude very clearly: maybe we have chosen the wrong

person. Maybe if he needs a headshrinker, there's something wrong with him. Perhaps he's just not tough enough" (Bertrand, 1983 in Murphy, 2005: 277). There are many coaches and athletes who believe that they can handle mental preparation entirely alone (Murphy, 2005).

The use of psychological interventions in competitive sports to enhance performance has gained some increasing popularity. Sport psychologists however, have questioned the effectiveness of these interventions (Weinberg & Comar, 1994).

Sport psychological interventions show professionals how to facilitate their athletes to get the most out of their sport experience and to sustain a healthy lifestyle (Butt, 1987).

Problems in the past were due to the narrowness of sport psychology, especially where the emphasis fell on the elite athletes. Today, sport psychologists are educated in many interventions that have applications far beyond sport. With this expansion of services in sport psychology, the field can continue to be feasible as one of the allied helping professions (Murphy, 2005).

Sport psychological research shows that aggression does not enhance performance and neither is sport participation a convenient outlet for it (pent-up aggressive feelings). The majority of applied Sport psychologists today teach athletes and coaches to control their emotions responsibly.

“Researchers need to examine the causes of anger and aggression among athletes and test the usefulness of various types of interventions in anger control” (Murphy, 2005: 112).

Sport-specific state and trait measures of anger need to be developed. Qualitative research needs to be embarked to better understand how anger benefits/detracts from performance.

The problem of aggressiveness will only improve when athletes learn to identify the signs of anger and redirect the arousal that accompanies it into effective strategies for performance.

The use of sport psychological programs is just the beginning.

2.6 Adolescence, violence and related problems

“For almost every child, adolescence means one thing above all else: he must prove he is no longer a child... Very many of the expressions of adolescence are the outcome of the desire to show independence, equality with adults, and manhood or womanhood. The direction of these expressions will depend on the meaning which the child has attributed to being 'grown-up'” (Ansbacher & Ansbacher in Manaster, 1989: 168).

Adolescence is the most aggressive stage throughout a person’s life. The South African Human Rights Commission (SAHRC) was told in September 2007 that in today’s school setting, teachers are struggling with unruly adolescents, some of whom are armed with

weapons. Data revealed in the paper “Adolescents and Youth: Challenges in post-conflict South Africa”, that the leading cause of non-natural death amongst 15-19 year olds are shooting and stabbing (<http://www.hsrc.ac.za>).

According to a report written for the need of the school safety project by Professor Prinsloo from the Department at Unisa, today, schools are increasingly confronted with far more serious problems such as drug abuse, gangs and weapons within their communities as opposed to a few decades ago where the most pressing classroom problems were tardiness, talkative learners and gum chewing (Prinsloo, 1997, 2000).

The Child Accident Prevention Foundation of Southern Africa describes schools as dangerous places where school violence varied from blunt assault to human bite wounds and fire-arm related injuries. Therefore these adolescents are more likely to be violated at school than at other places, making schools the most dangerous places for the peer group. Any school setting should play a central role in the socialization of a child and it is critical that schools offer a safe haven in which learning and growth can take place. *“The school provides a much more complex socialization setting than the family unit does, since more varied forces interact and pull against each other. Although schools are established and administered by adults, and their organizational goals are set by adults, they are also the focal point of interaction for the peer culture, which in many instances has goals different from of at least in total accord with the goals set by school administrators and pursued by the faculty”* (Kratcoski & Kratcoski, 1995: 160).

Many people would resist having a Martial Arts programme in their children’s schools for fear that teaching already troubled children how to fight with their bare hands and

feet would only aggravate the problem. Chuck Norris (Martial Arts expert) disagrees with this statement. Being a black belt himself, he states that he has first-hand experience of the positive effects Martial Arts often have on one's self-esteem and self-confidence. After a certain point in training, it becomes apparent that anything is possible and there is nothing to prove to anybody but oneself (Nathan & Gatlin, 2004).

Another major influence on adolescents, which may lead to a decrease in self-control and an escalation in aggressiveness, is substance abuse. Substance abuse has a very strong influence on youthful self-control and this makes the youth of today especially vulnerable to the desensitising and brutalising effects of violence (Johnson, Cohen, Smailes, Kasen & Brook, 2002).

2.7 Psychological wellbeing

According to Edwards (2005), psychological wellbeing refers to positive mental health. Psychological wellbeing develops through a combination of emotional regulations, personality characteristics, identity and life experience (Helson & Srivastava, 2001).

2.7.1 Psychological wellbeing components

The objective understanding of psychological wellbeing was extensively researched by Ryff. With the following components, autonomy, personal growth, environmental mastery, purpose in life, positive relations with others and self acceptance, Ryff's research has resulted in a new objective psychological wellbeing measurement (Ryff,

1989; Ryff & Keyes, 1995; Conway & Macleod, 2002; Keyes, Shmotkin & Ryff, 2002; Ruini, Ottolini, Rafanelli, Tossani & Fava, 2003).

2.7.1.1 Autonomy

Through an internal locus of control, one can regulate one's own behaviour (Ryff, 1989; Ryff & Keyes, 1995). A high level of internal evaluation can be found in a fully functioning person, assessing themselves on personal standards and achievements while not relying on the standards of others.

These people can focus on their own beliefs and are less influenced by other's ideas (Ryff, 1989). High levels on the autonomy scale suggest independence and are also linked to self determined motivation in sport participation (Huang & Jeng, 2005).

The high scorer on the autonomy scale is self-determining and independent, is able to resist social pressures to think and act in certain ways, regulates behaviour from within and evaluates self by personal standards.

The low scorer is concerned about the expectations and evaluations of others, relies on judgments of others to make important decisions and conforms social pressures to think and act in certain ways (Ryff & Keyes, 1995).

2.7.1.2 Personal growth

Ryff and Keyes (1995) and Ryff (1989) describe personal growth as the ability to develop and expand the self and to accomplish goals. A growth mindset amongst athletes yields continuous development of the self in various facets of life. Athletes who are humble but confident generally use positive and negative performances as well as goals achieved in their lives to assure personal growth (Weinberg & Gould, 2007).

Participants with a high score has a feeling of sustained development, sees self as growing and expanding, is open to new experiences, has sense of realizing his or her potential, sees improvement in self and behavior over time and is changing in ways that reflect more self-knowledge and effectiveness.

The low scorer has a sense of personal stagnation, lacks sense of improvement or expansion over time and feels bored and uninterested with life. These people usually feel unable to develop new attitudes or behaviors (Ryff & Keyes, 1995).

2.7.1.3 Environmental mastery

Through mental and physical actions, surroundings and imagined environments can be chosen and controlled by the athlete (Ryff, 1989; Ryff & Keyes, 1995). Environmental mastery is the ability to control complex environmental and life satisfactions (Ryff, 1989) and seize opportunities which represent themselves.

Participants scoring high on this scale, has a sense of mastery and skill in managing the environment, controls complex display of external activities, makes effective use of surrounding opportunities and is able to choose or create contexts suitable to personal needs and values.

The low scorer has difficulty managing everyday affairs, feels unable to change or improve surrounding context and is unaware of surrounding opportunities. He/she lacks sense of control over the external world (Ryff & Keyes, 1995).

2.7.1.4 Purpose in life

Purpose in life involves the setting and reaching of goals, which contribute to the appreciation of life (Ryff, 1989; Ryff & Keyes, 1995). To have a purpose in life, creates direction and exterminate despondency (feelings of hopelessness).

The participant scoring high on the purpose in life scale has goals in life and a sense of directedness. He/she feels there is meaning to present and past life, holds beliefs that give life purpose and has aims and objectives for living.

The low scorer on this scale lacks a sense of meaning in life and has few goals or aims. He/she lacks sense of direction, does not see purpose of past life and has no outlook or beliefs that give life meaning (Ryff & Keyes, 1995).

2.7.1.5 Positive relations with others

According to Ryff (1989), good relations result in an understanding of others, whereas poor relations can cause frustration. The American Psychiatric Association (2000) points out the fact that the ability to have good human relations is one key feature of mental health with pathology often characterized by impairment in social functioning.

Participants with a high score on the positive relations scale has warm, trusting and satisfying relationships with others, is concerned about the welfare of others, are capable of strong empathy, affection and intimacy and understands the give and take of human relationships.

Participants with a low score has few close and trusting relationships with others and finds it difficult to be warm, open and concerned with others. They are isolated and frustrated in interpersonal relationships and not willing to make compromises (Ryff & Keyes, 1995).

2.7.1.6 Self-acceptance

The most recurring aspect of psychological wellbeing is self-acceptance and is an element of optimal functioning, self-actualization, enhanced psychological functioning and development. Self-acceptance entails accepting past and present events as well as maintaining direction for the future (Ryff, 1989).

Participants with a high score on the self-acceptance scale possesses a positive attitude toward the self, recognizes and accepts several aspects of self (including good and bad qualities) and feels positive about past life.

Participants with a low score feels dissatisfied with self, is disappointed with what has occurred with past life, is troubled about certain personal qualities and wishes to be different than what he or she is (Ryff & Keyes, 1995).

2.7.2 Psychological wellbeing in Martial Arts

There is often controversy about whether or not the practice of Martial Arts leads to positive or negative psychological changes in the participants. Martial Arts and weight training have both led to improvements in general mental health (Egan, 1993). There are many who claim that practising the Martial Arts develops beneficial psychological changes (especially changes in aggressiveness) and encourages good moral and ethical development. Some Martial Arts (such as judo) were developed with this goal in mind. In contrast to this, other people claim that participating in socially approved, combative activities facilitates violence and aggression. Unfortunately, most of the images of Martial Arts in popular movies tend to support this claim. A continuous development of the mind is essential to success in the Martial Arts (Frommer, 1978).

Many of the Martial Arts have changed so as to address more diverse goals, such as personal growth and self-discipline. The findings of certain studies indicate that the practice of Martial Arts leads to positive psychosocial changes in the participants.

Studies on this subject are mainly cross-sectional in design (they examine the participants at one point in time) and examine Martial Artists with different belt ranks or time of participation (Kurian *et al.*, 1994).

Authors such as Miller (1989) and Finkenbug (1990) analysed the effects of Tae Kwon Do training on personality and found that, in addition to the physical training, Tae Kwon Do emphasises concentration, self-control and self-discipline. They suggest that Tae Kwon Do training has many psychological benefits (including enhanced self-esteem, self-concept, reduced aggressiveness, decreased anxiety and greater personal independence and ability to play a leadership role). They also state that the participant's self-concept may be enhanced by the acquisition or mastery of a new skill. This finding suggests that all the psychological benefits that one derived from Martial Arts may be intimately related to the components of psychological wellbeing as explained by Ryff (1989).

Since exercise in many forms can promote psychological wellbeing, researchers such as Leith and Taylor (1990), Simono (1991) and Weiser *et al.* (1995) have found it likely that some of the psychological benefits from Martial Arts practice arise from the physical activity itself. According to research done, it was demonstrated that psychological wellbeing was promoted through regular (at least twenty minutes a day, 3-4 times a week) sport and exercise (Scully *et al.*, 1998).

2.8 Participation in Martial Arts compared with participation in other sporting activities

Daniels and Thornton (1992) found that participants in the Martial Arts displayed a larger decrease in hostility over time than participants in tennis or rugby. These authors mention that various factors, such as the degree of respect the participants showed to the sensei, the dojo and one another, the level of contact allowed to vital areas of the body, and the relative importance of the kata, were demonstrated by athletes who participated in only one semester of Tae Kwon Do. These factors were not observed in athletes participating in other sport activities such as rugby or hockey.

2.9 Conclusion

Martial Arts in a therapeutic setting with properly trained and supervised instructors can be an extraordinarily helpful and ego-building form of psychotherapy. Carefully supervised therapeutic interventions using Martial Arts as the change agent can enhance mind-body co-ordination, which can be helpful to adolescents with aggressive behaviour. Martial Arts taught in a traditional way offer an organising framework for understanding the world and a sense of historical connectedness and can be a useful tool in helping violent adolescents to overcome their dysfunctional circumstances.

Adults are often sceptical about the use of Martial Arts as a therapeutic tool. They usually fear that teaching “fighting” will increase violence. Obviously, simply signing up for karate classes will not suffice. The therapeutic use of Martial Arts begins with a properly trained teacher. The therapeutic effect stems from participants who are committed to a complete mental and physical training programme.

Even though the hands, feet and body are the tools of Martial Arts and must be sharpened and improved daily to be efficient, it is equally true that the mental aspect of Martial Arts is the desired outcome. Technical skill must, however, come first to achieve this end.

All movements must be practised slow and fast, soft and hard. The effectiveness of the Martial Arts depends on split-second timing and reflexive action, which can only be achieved through repetitious practice. The Martial Arts student must always use his/her imagination when performing the movements. The participant must picture his/her challenger attacking and use the Martial Arts techniques in response to this imagined attack. The more innate these techniques become, the greater the new meaning and the better the techniques.

The aim of this study is to determine whether progression through the different levels in Martial Arts could serve as a deterrent for aggressive behaviour in young adolescents. If Martial Arts could indeed decrease adolescents’ susceptibility to acting in aggressive ways, then Martial Arts could be used as a coping strategy for aggressive acts and in this way improve the overall mental health and wellbeing of these young participants.

Chapter 3

Methodology

3.1 Method

3.1.1 Introduction

This chapter on methodology is concerned with the design, sampling method, measuring instruments, data analysis techniques and ethics of the study.

3.1.2 Research design

To generate data within this study, a quantitative research methodology was used. A triangulated design, involving Martial Arts participation, (beginner, intermediate and advanced) compared to participants in hockey and those not participating in any sporting activity were utilized.

A research design is the basic plan that guides the data collection and analysis phases of a research project. *"It is the framework that specifies the type of information to be collected, the sources of data, and the data collection procedure"* (Kinnear & Taylor, 1996: 129). The current study was done in the form of a survey in which questionnaires were administered to three groups of participants.

3.1.3 Sample

The study was conducted among three groups of young adolescents aged 15 to 18 years, male as well as female.

3.1.3.1 Group 1 (*Martial Arts group*)

The researcher selected Tae Kwon Do from the various Martial Arts styles, because Tae Kwon Do is the type of Martial Art that has a very broad combination of traditional components of what any Martial Arts program consist of. It also consists of elements that are incorporated within the program that will have the desired outcome on a participant taking part in such a training program.

This group consists of 24 young male and female adolescent Tae Kwon Do athletes from suitable Martial Arts Combat Tae Kwon Do clubs situated in the Pretoria suburbs of Annlin, Silver Lakes and Villieria respectively. These particular clubs were chosen because they are conveniently situated and accessible to the researcher, who is familiar with them and knows the coaching staff. These clubs have one of the best 6th dann black belt coaches in the country in Martial Arts Combat Tae Kwon Do, with years of experience in the field of Tae Kwon Do. The coach (sensei) of these clubs is also registered with the MATA (Martial Arts Teachers Association).

The adolescents can be categorized into one of three groups, A, B or C. Group A consisted of beginner participants (n=6), Group B of intermediate participants (n=9) and Group C of advanced participants (n=9) in Martial Arts. The groups consisted of

participants in a Martial Arts programme (in this case Tae Kwon Do involving meditation, warm-up exercises, a brief lecture about Tae Kwon Do and the physical techniques of Tae Kwon Do), emphasising respect for oneself and others, self-control, patience, perseverance, responsibility and honour.

In this study, the researcher attempted to determine whether progression through these three levels in Martial Arts could serve as a deterrent to aggressiveness and therefore, to determine whether there would be a gradual decrease in the aggressiveness of the participants. The researcher also wanted to determine whether Martial Arts could in this way serve as a coping strategy for aggressiveness to improve the young adolescents' overall mental health.

3.1.3.1.1 Inclusion criteria: All the male and female adolescents already participating in a Martial Arts programme were included in this study. Adolescents between the ages of 15 to 18 years were included in this study. Only adolescents (male and female) who had obtained their parents' consent were included in this study.

3.1.3.1.2 Exclusion criteria: Those adolescents under the ages of 15 years and older than 18 years were excluded from this study.

3.1.3.2 Group 2 (hockey players)

This group consisted of 24 first and second team hockey players, male and female, from a standard High School in the Pretoria region. Hockey was chosen as the comparing sports type, because both male and female participated in this group and hockey is being considered a contact sport.

3.1.3.2.1 Inclusion criteria: All the male and female adolescents already participating in hockey were included in this study. Adolescents between the ages of 15 to 18 years were included in this study. Only adolescents (male and female) who had obtained their parents' consent were included in this study.

3.1.3.2.2 Exclusion criteria: Those adolescents under the ages of 15 years and older than 18 years were excluded from this study.

3.1.3.3 Group 3 (non- participation in sport)

This group consisted of 24 High School learners (male and female) in the Pretoria region who did not participate in any sporting activity.

3.1.3.3.1 Inclusion criteria: All the male and female adolescents not participating in any sporting activity were included in this study. Adolescents between the ages of 15 to 18 years were included in this study. Only adolescents (male and female) who had obtained their parents' consent were included in this study.

3.1.3.3.2 Exclusion criteria: Those adolescents under the ages of 15 years and older than 18 years were excluded from this study.

These three groups were compared with one another in order to reach the most scientific conclusion to be drawn from Group 1. It is important to note that the use of a baseline was not necessary in this study because Martial Arts were not used as an intervention.

All the participants in this study had already been participating in Martial Arts and hockey.

A sample can be defined as a subset of the population. A sampling plan can be described as a design, scheme of action or procedure that specifies how the participants are to be selected for a survey or study (Rosnow & Rosenthal, 1996).

A distinction is made between probability and non-probability sampling. This study used a non-probability sampling method. This sampling method can be described as the selection of a population element to be part of the sample, based to some extent on the judgement of the researcher (Kinnear & Taylor, 1996).

A number of sampling procedures fall in this category, but a sample of convenience was used in this study. The sample in this study consisted of 24 participants in the three groups specified above. The total sum of 72 participants was used.

3.1.4 Measuring instruments

3.1.4.1 *Buss and Perry's aggression questionnaire (Appendix B)*

This aggression questionnaire is a full revision of the Buss-Durkee Hostility Inventory, a widely used measure for assessing hostility and aggression. It has shown adequate psychometric standards in English-speaking samples. Scoring: The aggression scale consists of four factors: physical aggression (PA), verbal aggression (VA), anger (A) and hostility (H). The total score for aggression is the sum of the factor scores. Validity: Criterion validity was assessed and found to be acceptable. The internal consistency (coefficient alpha) ranged between **0.55** and **0.94** (Buss & Perry, 1992; Buss & Warren, 2000).

3.1.4.2 *Psychological wellbeing questionnaire (Appendix C)*

Scales of psychological wellbeing were constructed to measure the dimensions of autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance. This questionnaire measures cognitive distortions (aggressive behaviour) in antisocial youth. This questionnaire is currently being used in various large-scale national and international surveys. Research has shown high levels of internal consistency and alpha coefficients on the six subscales as follows: autonomy **0.83**, personal growth **0.85**, environmental mastery **0.86**, purpose in life **0.88**, positive relations with others **0.88**, and self-acceptance **0.91** (Ryff, 1989; Ryff & Keyes, 1995; Barriga & Gibbs, 1996).

3.1.4.3 Questionnaire pertaining to participation in Martial Arts (Appendix D)

This questionnaire attempts to differentiate a particular Martial Arts style from others along three dimensions: tradition (A), internal and external rewards (B) and technique (C). These three dimensions are often used for discussing Martial Arts. The questions posed in this questionnaire deal with the elements/key features identified in Martial Arts and the participants' perceptions of these features. The questionnaire was used to determine whether Martial Arts was being taught with tradition in mind, the language of origin, the philosophy and importance of techniques. This particular questionnaire was developed by the researcher herself.

3.1.5 Data collection

The survey method of data collection was used in this study. This type of method gives a detailed explanation of the way in which the data was collected. The researcher furthermore stresses the important fact that all the participants of Group 1 (the Martial Arts Group) were already participating in a Martial Arts training program. Questionnaires were the main source of data collection. A questionnaire was used as an assessment tool, because questionnaires are a quick way of collecting information, are fairly inexpensive and easy to analyse. Data can be organised by the researcher so that the information becomes a representation or a map of the true situation.

The data obtained were aimed at developing a mental picture, although this could never be completely accurate owing to a certain degree of subjectivity. For this reason, the context or surrounding environment is a vital determinant of the represented information.

Permission to carry out this study was obtained through consultation with all the relevant authorities. The researcher explained the purpose of the study and permission was granted. Informed consent from the participants themselves as well as the consent of their parents (because all of the participants were minors) was obtained. To facilitate participation, each questionnaire was administered in the mother tongue of the respondents and any misunderstandings were clarified.

All three groups had to complete the aggression and psychological wellbeing questionnaires. The Martial Arts group also completed a questionnaire relating to Martial Arts.

3.1.5.1 Data analysis

The information obtained from the sample was captured onto computer and the data was analysed by means of the Statistical Product and Service Solutions package. The analysis was done by a statistical specialist.

The following statistical procedures were used to analyse the data:

3.1.5.1.1 Descriptive statistics

Descriptive statistics are primarily aimed at describing the data. Descriptive statistics are used to describe the sample as well as to give insight into the participants' responses to the Martial Arts questionnaire. The mean, range and standard deviations were used to describe the results of the aggression; psychological wellbeing and Martial Arts subscales (see Appendix E).

The following descriptive statistics were used: frequencies, means, ranges and standard deviations. A brief definition of the latter three is as follows:

- Mean: This is generally what is meant by the word average. The mean is the total of the scores divided by the number of scores (Howell, 1992). Certain disadvantages are associated with the mean. *"It is influenced by extreme scores, its value may not actually exist in the data, and its interpretation in terms of the underlying variable being measured requires at least some faith in the interval properties of the data"* (Howell, 1992: 33).

- Range: The range is a measure of distance, namely the distance from the lowest to the highest score. It has the undesired property of being dependent on the sample size because the more values there are, the further apart the largest and the smallest of those values are likely to be (Howell, 1992).

- Standard deviation: The standard deviation is the positive square root of the variance which can be defined as follows: Variance can best be described as the sums of the

squared differences between scores and their means (Tabachnick & Fidell, 1996). The more variability there is in a group of responses, the higher the value of the variance and, subsequently the standard deviation, the more homogeneous the group responses are, the lower the value (Kranzler & Moursund, 1995).

3.1.5.1.2 Inferential statistics

These statistics test hypotheses about differences in populations on the basis of the measurements made on samples of subjects (Tabachnick & Fidell, 1996: 9).

The Kruskal-Wallis one-way analysis of variance: *“The Kruskal-Wallis one-way analysis of variance is a direct generalisation of the Wilcoxon rand-sum test to the case in which we have three or more independent groups. As such, it is the distribution-free analogue of the one-way analysis of variance. It tests the hypothesis that all samples were drawn from identical populations”* (Howell, 1992: 622).

This test was used in the study to determine whether there were statistically significant differences between the aggression, psychological wellbeing and Martial Arts sub-scale scores of the three levels of the Martial Arts groups. It was also used to determine whether there were statistically significant differences between the groups whose members did not participate in any sport, those who played hockey and those who took part in Martial Arts, on all the sub-scales tested. Participants in Martial Arts, hockey and those who did not take part in any sport activity were compared to one another in terms of their aggressiveness and psychological wellbeing.

3.1.6 Ethics

Ethical clearance was required from the University of Pretoria. Participant information was provided to each participant (Appendix F). Informed consent was required from each participant's parent (Appendix G) as well as from Master Richard West, sensei at the Combat Tae kwon Do club (Appendix H). Participants were informed that they were free to withdraw from the study at any time. Codes were assigned to the participants in this study to ensure confidentiality. The questionnaires and data were kept under lock and key. No names would be divulged and the results would only be presented in group form. The participants were free to withdraw or to choose whether or not to participate in any session.

Chapter 4

Results

4.1 Results

The results are presented in the sections below, namely:

4.1.1 Description of the sample.

4.1.2 Results of non-parametric tests to test whether statistically significant differences existed between the three levels of Martial Arts on the aggression scales.

4.1.3 Results of non-parametric tests to test whether statistically significant differences existed between the three levels of Martial Arts on the psychological wellbeing scales.

4.1.4 Results of non-parametric tests to test whether statistically significant differences existed between the two sport groups (Martial Arts and hockey) and the non-sporting group on the aggression scales.

4.1.5 Results of non-parametric tests to test whether statistically significant differences existed between the two sport groups (Martial Arts and hockey) and the non-sporting group on the psychological wellbeing scales.

4.1.6 Results of non-parametric tests to test whether statistically significant differences existed between the three levels of Martial Arts on the Martial Arts scales.

4.1.7 Results of the participants' responses to the Martial Arts questionnaire:

4.1.7.1 Results of Martial Arts participants' responses to the *tradition* questions in the Martial Arts questionnaire.

4.1.7.2 Results of Martial Arts participants' responses to the *internal and external style* questions of the Martial Arts questionnaire.

4.1.7.3 Results of Martial Arts participants' responses to the *techniques* questions of the Martial Arts questionnaire.

4.1.1 Description of the sample

Table 1: Age of participant

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 15	13	18.1	18.1	18.1
16	15	20.8	20.8	38.9
17	26	36.1	36.1	75.0
18	18	25.0	25.0	100.0
Total	72	100.0	100.0	

The results in Table 1 indicate that the ages of the respondents included in this survey ranged between 15 and 18 years. More than half (61.1%) of the participants were 17-18 years old.

Table 2: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	31	43.1	43.1	43.1
	Female	41	56.9	56.9	100.0
	Total	72	100.0	100.0	

The results in Table 2 indicate that just over half (56.9%) of the participants were females and 43.1% were males.

Results of the analysis of the comparison of the different sport groups on all tests

The following section describes the results of the analysis of the differences in scores on the subscales of the aggression, psychological wellbeing and Martial Arts questionnaires.

All statistically significant differences are marked in **red** on the analysis tables.

4.1.2 Results of non-parametric tests to test whether statistically significant differences existed between the three levels of Martial Arts on aggression scales

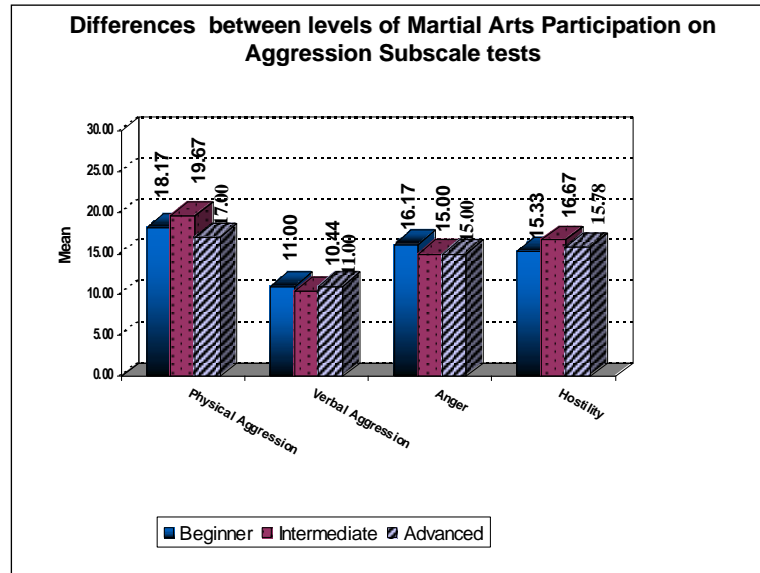


Figure 1: Aggression scales for the three levels of progression in Martial Arts

Figure 1 shows the mean scores of the groups on the three levels of participation in Martial Arts for all the sub-scales of the aggression test. The results of the statistical analysis are presented in Tables 3 and 4. The results indicate that there were no statistically significant differences between the participants at the three levels of participation, for any of the aggression sub-scales.

Table 3: Kruskal-Wallis Test

Ranks			
	Level	N	Mean Rank
Physical Aggression	Beginner	6	12.50
	Intermediate	9	15.22
	Advanced	9	9.78
	Total	24	
Verbal Aggression	Beginner	6	13.08
	Intermediate	9	11.50
	Advanced	9	13.11
	Total	24	
Anger	Beginner	6	15.17
	Intermediate	9	11.89
	Advanced	9	11.33
	Total	24	
Hostility	Beginner	6	11.08
	Intermediate	9	13.83
	Advanced	9	12.11
	Total	24	

Table 4: Test Statistics (a, b)

	Physical Aggression	Verbal Aggression	Anger	Hostility
Chi-square	2.703	.294	1.193	.597
df	2	2	2	2
Asymp. Sig.	.259	.863	.551	.742

a. Kruskal-Wallis Test

b. Grouping Variable: Level

4.1.3 Results of non-parametric tests to test whether statistically significant differences existed between the three levels of Martial Arts for psychological wellbeing scales

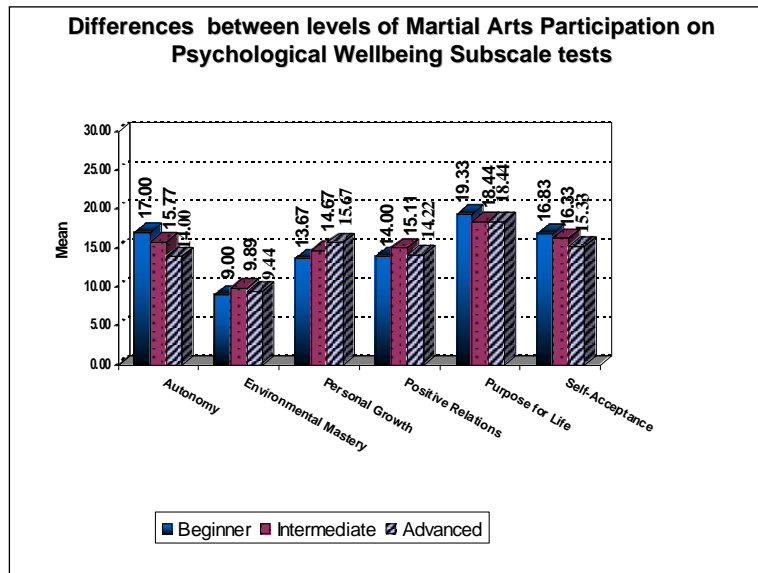


Figure 2: Psychological wellbeing scales for three levels of progression in Martial Arts

Figure 2 reflects the psychological wellbeing sub-scale scores of the three groups at the different levels of Martial Arts. The results of the statistical analysis are presented in Tables 5 and 6. The results indicate that one statistically significant difference could be found between the groups at the different levels of participation at the 10% level of significance. The personal growth scores of the beginners group were significantly lower than those of the intermediate and advanced groups.



Table 5: Kruskal-Wallis Test

Ranks			
	Level	N	Mean Rank
Autonomy	Beginner	6	14.67
	Intermediate	9	14.11
	Advanced	9	9.44
	Total	24	
Environmental Mastery	Beginner	6	11.08
	Intermediate	9	13.83
	Advanced	9	12.11
	Total	24	
Personal Growth	Beginner	6	8.42
	Intermediate	9	11.50
	Advanced	9	16.22
	Total	24	
Positive Relations	Beginner	6	11.92
	Intermediate	9	13.67
	Advanced	9	11.72
	Total	24	
Purpose in Life	Beginner	6	15.25
	Intermediate	9	11.89
	Advanced	9	11.28
	Total	24	
Self-acceptance	Beginner	6	15.08
	Intermediate	9	13.11
	Advanced	9	10.17
	Total	24	

Table 6: Test Statistics (a, b)

	Autonomy	Environmental Mastery	Personal Growth	Positive Relations	Purpose in Life	Self-Acceptance
Chi-square	2.811	.638	5.189	.401	1.297	1.902
df	2	2	2	2	2	2
Asymp. Sig.	.245	.727	.075	.818	.523	.386

a. Kruskal-Wallis Test

b. Grouping Variable: Level

Results of the analysis of the comparison of the group which did not participate in any sport, the group which played hockey and the Martial Arts group for all tests measured. The following section describes the results of the comparison of the group which did not participate in sport, those who played hockey and those who participated in Martial Arts, for the aggression and psychological wellbeing questionnaires.

4.1.4 Results of non-parametric tests to test whether statistically significant differences existed between the three groups (Martial Arts, hockey and non-sporting participants) on the aggression scales

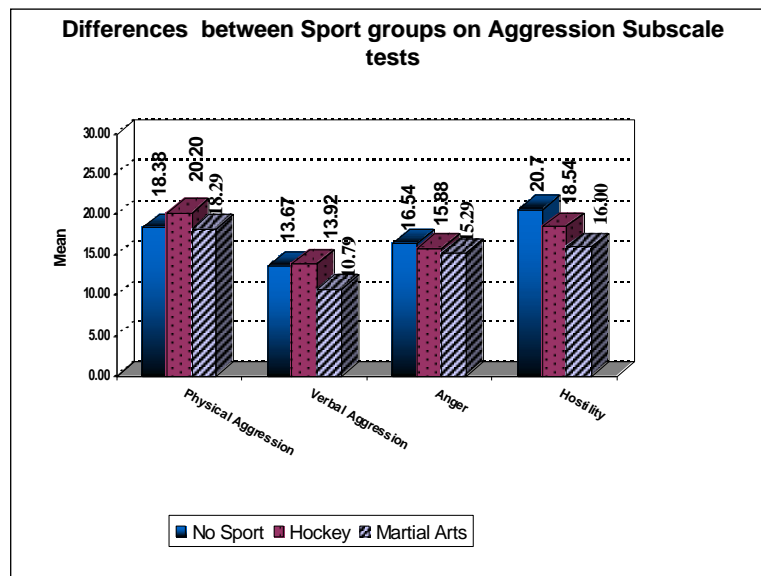


Figure 3: Aggression scales for the three sport groups

Figure 3 represents the mean scores of the three groups (Martial Arts, hockey and no sport) on the aggression sub-scales. The results of the analysis are presented in Tables 7 and 8. Two statistically significant differences were detected at the 5% level of significance. The verbal aggression and hostility scores of the group which participated in Martial Arts were significantly lower than those of the other two groups.



Table 7: Kruskal-Wallis Test

Ranks			
	Group	N	Mean Rank
Physical Aggression	No Sport	24	33.21
	Hockey	24	41.56
	Martial Arts	24	34.73
	Total	72	
Verbal Aggression	No Sport	24	43.48
	Hockey	24	44.48
	Martial Arts	24	21.54
	Total	72	
Anger	No Sport	24	40.54
	Hockey	24	36.52
	Martial Arts	24	32.44
	Total	72	
Hostility	No Sport	24	48.77
	Hockey	24	35.83
	Martial Arts	24	24.90
	Total	72	

Table 8: Test Statistics (a, b)

	Physical Aggression	Verbal Aggression	Anger	Hostility
Chi-square	2.184	18.771	1.823	15.774
df	2	2	2	2
Asymp. Sig.	.336	.000	.402	.000

a. Kruskal-Wallis Test

b. Grouping Variable: Group

4.1.5 Results of non-parametric tests to test whether statistically significant differences existed between the three groups (Martial Arts, hockey and non-sporting participants) on the psychological wellbeing scales

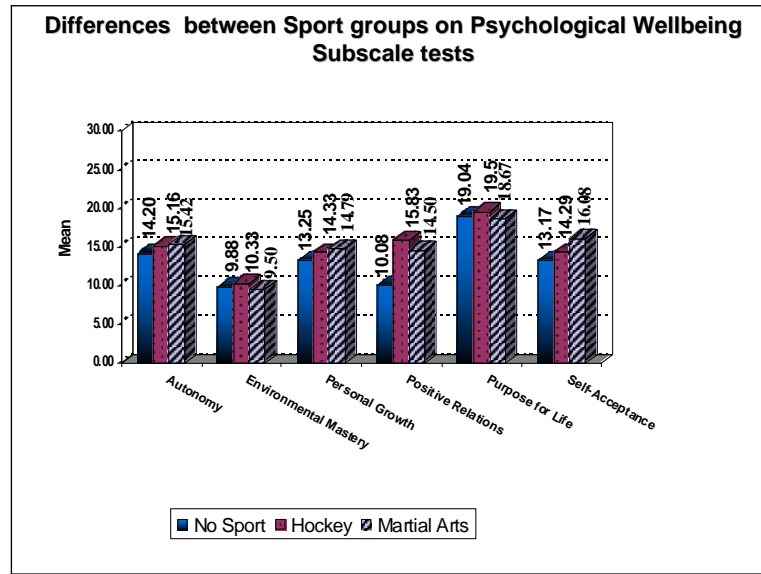


Figure 4: Psychological wellbeing scales for the three sport groups

The results of the comparison of the three groups on the psychological wellbeing tests are presented in Figure 4 with the mean scores of each group per subscale. The results of the statistical analyses are presented in Tables 9 and 10. Two statistically significant differences were detected between the three groups at the 5% level of significance. The personal growth scores of the Martial Arts group were significantly higher than those of the other two groups; and the group which did not participate in any sport had the lowest score. The self-acceptance scores of the Martial Arts group were also significantly higher on the 5% level of significance than those of the other two groups; the group which did not participate in any sport once again had the lowest score.

Table 9: Kruskal-Wallis Test

Ranks			
	Group	N	Mean Rank
Autonomy	No Sport	24	34.63
	Hockey	24	37.52
	Martial Arts	24	37.35
	Total	72	
Environmental Mastery	No Sport	24	37.10
	Hockey	24	41.15
	Martial Arts	24	31.25
	Total	72	
Personal Growth	No Sport	24	27.48
	Hockey	24	38.27
	Martial Arts	24	43.75
	Total	72	
Positive Relations	No Sport	24	32.04
	Hockey	24	43.83
	Martial Arts	24	33.63
	Total	72	
Purpose in Life	No Sport	24	38.81
	Hockey	24	39.08
	Martial Arts	24	31.60
	Total	72	
Self-acceptance	No Sport	24	24.88
	Hockey	24	35.04
	Martial Arts	24	49.58
	Total	72	

Table 10: Test Statistics (a, b)

	Autonomy	Environmental Mastery	Personal Growth	Positive Relations	Purpose in Life	Self-Acceptance
Chi-square	.298	2.796	7.759	4.560	2.016	17.184
df	2	2	2	2	2	2
Asymp. Sig.	.862	.247	.021	.102	.365	.000

a. Kruskal-Wallis Test

b. Grouping Variable: Group

4.1.6 Results of non-parametric tests to test whether statistically significant differences existed between the three levels of Martial Arts participation for Martial Arts scales

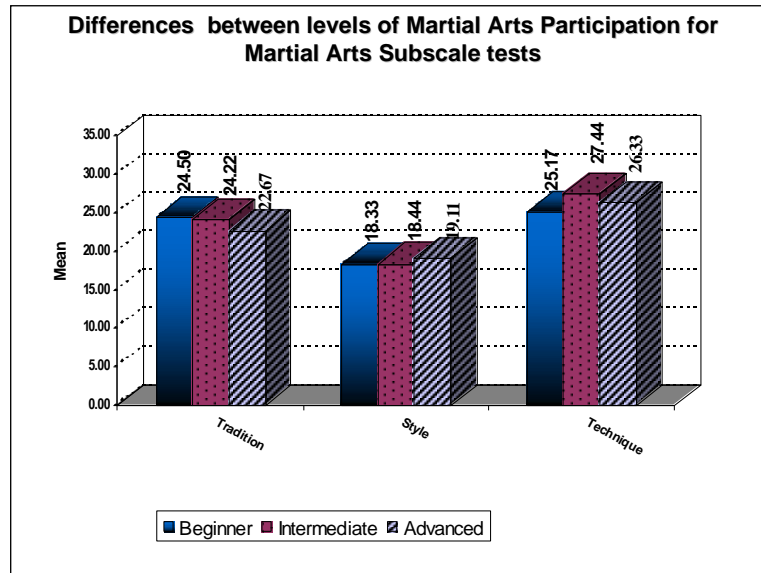


Figure 5: Martial Arts scales for three levels of progression in Martial Arts

The results in Figure 5 represent the scores of the three groups on the sub-scales of the Martial Arts questionnaire. The results of the analysis are presented in Tables 11 and 12. No statistically significant differences were found between the three groups with regard to the sub-scale scores for tradition, internal and external style and techniques.

Table 11: Kruskal-Wallis Test

Ranks			
	Level	N	Mean Rank
Martial Arts Tradition	Beginner	6	14.58
	Intermediate	9	13.50
	Advanced	9	10.11
	Total	24	
Martial Arts Internal/External style	Beginner	6	11.33
	Intermediate	9	11.78
	Advanced	9	14.00
	Total	24	
Martial Arts Techniques	Beginner	6	11.33
	Intermediate	9	14.00
	Advanced	9	11.78
	Total	24	

Table 12: Test Statistics (a, b)

	Martial Arts Tradition	Martial Arts Internal/External Style	Martial Arts Techniques
Chi-square	1.748	.670	.681
df	2	2	2
Asymp. Sig.	.417	.715	.712

a. Kruskal-Wallis Test

b. Grouping Variable: Level

The mean scores per group for each of the tests are presented in Appendix E.

4.1.7 Results of the participants' responses to the Martial Arts questionnaire:

Table 13: Type of Martial Art

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tae Kwon Do	48	66.7	66.7	66.7
	Do	24	33.3	33.3	100.0
	Total	72	100.0	100.0	

A third of all participants took part in Martial Arts and all did Tae Kwon Do (see Table 13).

Table 14: Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Beginner	6	8.3	25.0	25.0
	Intermediate	9	12.5	37.5	62.5
	Advanced	9	12.5	37.5	100.0
	Total	24	33.3	100.0	
Missing	System	48	66.7		
Total		72	100.0		

A quarter of the participants were at beginner level (25%) followed by 37.5% at the intermediate and advanced Martial Arts levels respectively (see Table 14).

The following sections focus only on the responses of the group participating in Martial Arts and their responses to the Martial Arts questionnaire.

4.1.7.1 Results of the Martial Arts participants' responses to the *tradition* questions in the Martial Arts questionnaire

Table 15: Use of language of origin of Martial Arts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	7	29.2	29.2	29.2
	Slightly unimportant	3	12.5	12.5	41.7
	Slightly important	3	12.5	12.5	54.2
	Very important	11	45.8	45.8	100.0
	Total	24	100.0	100.0	

The use of language of origin is words from the language spoken where the Art was developed (i.e. to describe moves, give directions, as a sign of respect, to count out drills, etc.). Almost half of the participants (45.8%) felt that the use of the language of origin was very important (see Table 15). An additional 12.5% indicated that it was slightly important to them. A third (29.2%) of the participants indicated that it was unimportant.

Table 16: Rituals of respect (bowing, ritual phrase, seating arrangement, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	1	4.2	4.2	4.2
	Slightly unimportant	6	25.0	25.0	29.2
	Slightly important	6	25.0	25.0	54.2
	Very important	11	45.8	45.8	100.0
	Total	24	100.0	100.0	

The results in Table 16 indicate that the majority of the participants felt that rituals of respect were slightly or very important (70.8%).

Table 17: Historical context explained (i.e. whether instructors take time to explain where exercise comes from, how it was developed, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	8	33.3	33.3	33.3
	Slightly unimportant	6	25.0	25.0	58.3
	Slightly important	8	33.3	33.3	91.7
	Very important	2	8.3	8.3	100.0
	Total	24	100.0	100.0	

Just over half (58.3%) of the participants felt that it was unimportant or slightly unimportant to have the historical context of the exercise explained to them.

Table 18: Knowledge of history of the Art as a requirement for progression

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	2	8.3	8.3	8.3
	Slightly unimportant	7	29.2	29.2	37.5
	Slightly important	10	41.7	41.7	79.2
	Very important	5	20.8	20.8	100.0
	Total	24	100.0	100.0	

Most of the participants (62.5%) felt that knowledge of the history of the Art should be a requirement for progression in the sport.

Table 19: Uniform (i.e. How important is it? Does it signify anything?)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	5	20.8	20.8	20.8
	Slightly unimportant	4	16.7	16.7	37.5
	Slightly important	7	29.2	29.2	66.7
	Very important	8	33.3	33.3	100.0
	Total	24	100.0	100.0	

Just over half (62.5%) of the participants stated that the uniform was slightly or very important. A fifth (20.8%) stated that it was unimportant to them.

Table 20: Forms ("kata" in Japanese Martial Arts): Importance of forms to any Martial Arts style

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly important	2	8.3	8.3	8.3
	Very important	22	91.7	91.7	100.0
	Total	24	100.0	100.0	

All respondents felt that the forms were slightly or very important to their Martial Arts style (see Table 20).

Table 21: Importance of the performance of the forms aspect of competitions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly important	2	8.3	8.3	8.3
	Very important	22	91.7	91.7	100.0
	Total	24	100.0	100.0	

Similar to the results in Table 20, all the participants also felt that forms were slightly to very important as part of competitions.

Table 22: Importance of meditation to the practice of Martial Arts style

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	7	29.2	29.2	29.2
	Slightly unimportant	6	25.0	25.0	54.2
	Slightly important	7	29.2	29.2	83.3
	Very important	4	16.7	16.7	100.0
	Total	24	100.0	100.0	

The participants were divided in their responses to the practice of meditation (see Table 22). Just over half (54.2%) of the participants stated that meditation was unimportant or slightly unimportant to the practice of their style. The other half felt that meditation was slightly or very important.

4.1.7.2 Results of Martial Arts participants' responses to *internal and external style* questions in the Martial Arts questionnaire

Table 23: Speed (ext)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly unimportant	4	16.7	16.7	16.7
	Slightly important	5	20.8	20.8	37.5
	Very important	15	62.5	62.5	100.0
	Total	24	100.0	100.0	

The majority of the participants (83.3%) indicated that speed was slightly or very important to their style.

Table 24: Strength (ext)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly unimportant	4	16.7	16.7	16.7
	Slightly important	9	37.5	37.5	54.2
	Very important	11	45.8	45.8	100.0
	Total	24	100.0	100.0	

Once again the majority (83.3%) of the participants indicated that strength was important to their style.

Table 25: Timing (internal)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	1	4.2	4.2	4.2
	Slightly unimportant	8	33.3	33.3	37.5
	Slightly important	7	29.2	29.2	66.7
	Very important	8	33.3	33.3	100.0
	Total	24	100.0	100.0	

Just over half (62.5%) of the participants felt that timing was slightly or very important to their style.

Table 26: Balance (internal)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	1	4.2	4.2	4.2
	Slightly unimportant	5	20.8	20.8	25.0
	Slightly important	7	29.2	29.2	54.2
	Very important	11	45.8	45.8	100.0
	Total	24	100.0	100.0	

Three-quarters (75%) of the participants indicated that balance was slightly or very important to their style.

Table 27: Positioning (internal)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly unimportant	4	16.7	16.7	16.7
	Slightly important	8	33.3	33.3	50.0
	Very important	12	50.0	50.0	100.0
	Total	24	100.0	100.0	

The majority of the participants (83.3%) felt that positioning was slightly or very important to their style.

Table 28: Deception (external)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	5	20.8	20.8	20.8
	Slightly unimportant	7	29.2	29.2	50.0
	Slightly important	7	29.2	29.2	79.2
	Very important	5	20.8	20.8	100.0
	Total	24	100.0	100.0	

The participants were more or less evenly divided in their responses to the question about deception: half of the participants felt that it was important as part of their style but the other half stated it was not important to their style.

4.1.7.3 Results of Martial Arts participants' responses to the questions pertaining to *the techniques of the style in the Martial Arts questionnaire*

Table 29: How much time is spent discussing/practising free-form fighting techniques and/or sparring?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	2	8.3	8.3	8.3
	Most of the time	15	62.5	62.5	70.8
	Exclusively	7	29.2	29.2	100.0
	Total	24	100.0	100.0	

Just over half (62.5%) of the participants stated that they practised or discussed free-form fighting techniques and/or sparring most of the time. A third (29.2%) indicated that they did this exclusively.

Table 30: Degree of sparring: how often are full contact sparring pads used when practising sparring?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	17	70.8	70.8	70.8
	Most of the time	4	16.7	16.7	87.5
	Exclusively	3	12.5	12.5	100.0
	Total	24	100.0	100.0	

Most of the participants (70.8%) stated that they used full contact sparring pads only sometimes (see Table 30). A smaller percentage (16.7) used these pads most of the time whereas only 12.5% used them exclusively.

Table 31: I watch TV series/movies like the *Power Rangers/Teenage Mutant Ninja Turtles*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	5	20.8	20.8	20.8
	Sometimes	13	54.2	54.2	75.0
	Most of the time	6	25.0	25.0	100.0
	Total	24	100.0	100.0	

Just over half of the participants (54.2%) watched *Power Rangers/Teenage Mutant Ninja Turtles* sometimes, and a quarter of the participants watched these shows most of the time. A fifth (20.8%) did not watch them at all.

Table 32: I use Martial Arts outside the club setting for my own benefit

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	12	50.0	50.0	50.0
	Sometimes	10	41.7	41.7	91.7
	Most of the time	2	8.3	8.3	100.0
	Total	24	100.0	100.0	

The results in Table 32 indicate that half of the participants (50%) did not use Martial Arts outside their club setting for their own benefit. Nearly half of the respondents (41.7%) said that they did so sometimes whereas only 8.3% stated that they used Martial Arts to their own benefit most of the time.

Table 33: Contact sport usually involves a certain amount of risk of acting aggressively and also inflicting pain

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	12	50.0	50.0	50.0
	Most of the time	11	45.8	45.8	95.8
	Exclusively	1	4.2	4.2	100.0
	Total	24	100.0	100.0	

Half of the participants (50%) indicated that contact sport sometimes involved a certain amount of risk by acting aggressively and inflicting pain. Almost half (45.8%) stated that this was the case most of the time, whereas only 4.2% indicated that was exclusively involved in contact sport.

Table 34: Are you as a Martial Artist given encouragement to pursue a programme of physical fitness outside the Martial Arts class?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	10	41.7	41.7	41.7
	Sometimes	1	4.2	4.2	45.8
	Most of the time	8	33.3	33.3	79.2
	Exclusively	5	20.8	20.8	100.0
	Total	24	100.0	100.0	

Almost half (41.7%) of the participants stated that they were not encouraged to pursue a programme of physical fitness outside the Marital Arts class. A third (33.3%) stated that they were encouraged to do so most of the time whereas 20.8% stated that they were exclusively encouraged doing so.

Table 35: To what degree are techniques described as manipulation of energies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	5	20.8	20.8	20.8
	Sometimes	8	33.3	33.3	54.2
	Most of the time	4	16.7	16.7	70.8
	Exclusively	7	29.2	29.2	100.0
	Total	24	100.0	100.0	

The participants were divided in their responses regarding whether techniques were described as manipulation of energies. A third (29.2%) felt that this was the case exclusively, whereas another third (33.3%) felt that this was only sometimes the case. One-fifth (20.8%) indicated that this was not the case at all.

Table 36: I felt aggressive when I had to kick the double-kicker

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	6	25.0	25.0	25.0
	Sometimes	13	54.2	54.2	79.2
	Most of the time	1	4.2	4.2	83.3
	Exclusively	4	16.7	16.7	100.0
	Total	24	100.0	100.0	

The results in Table 36 indicate that a quarter (25%) of the participants did not feel aggressive when they had to kick the double-kicker. Half (54.2%) of them indicated that they sometimes felt aggressive, whereas 16.7% indicated that they exclusively felt aggressive when kicking the double-kicker.

Table 37: I became angry when my opponent kicked me during a sparring competition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	10	41.7	41.7	41.7
	Sometimes	10	41.7	41.7	83.3
	Most of the time	3	12.5	12.5	95.8
	Exclusively	1	4.2	4.2	100.0
	Total	24	100.0	100.0	

Just under half (41.7%) of the participants stated that they did not feel angry when opponents kicked them during sparring competitions, and another 41.7% indicated that this only happened sometimes. Only a small percentage of the participants indicated that they did in fact get angry when an opponent kicked them.

Table 38: I am always very calm when I leave the Martial Arts club after training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	1	4.2	4.2	4.2
	Most of the time	13	54.2	54.2	58.3
	Exclusively	10	41.7	41.7	100.0
	Total	24	100.0	100.0	

Half of the participants (54.2%) indicated that they generally felt very calm when they left the Martial Arts club after training. However, a further 41.7% indicated that that they exclusively feel calm after training.

Table 39: I am not interested in sports activities that will possibly decrease/cure me of my tendency to act in aggressive ways

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	2	8.3	8.3	8.3
	Sometimes	11	45.8	45.8	54.2
	Most of the time	8	33.3	33.3	87.5
	Exclusively	3	12.5	12.5	100.0
	Total	24	100.0	100.0	

Nearly half (45.8%) of the participants indicated that they were interested exclusively or most of the time in sports activities that would possibly decrease their tendency to act in aggressive ways.

4.2 Discussion of results

4.2.1 Hypothesis 1 (Main Hypothesis)

Participation in Martial Arts can reduce the tendency to endorse aggressive acts.

Rationale

According to the results, hypothesis 1 cannot be fully accepted although there is evidence that Martial Arts substantially reduced aggression in adolescents (Trulson, 1986; Daniels & Thornton, 1990; Skelton, Glynn & Berta, 1991).

Lamarre and Nosanchuk (1999) researched a wide range of ages in participants and found that even after controlling for the effects of maturation, aggression still decreased.

Because adolescence has been recognized as an important developmental phase, it is also seen as a time of transition from savagery to civilization (Lerner, 1986).

Researchers have found adolescence to be a unique time marked by high levels of risk taking behaviour (Baumrind, 1987; Chesney-Lind, 1989; Stattin & Magnusson, 1991; Moffit, 1993; Losel & Bliesener, 1994; Lerner, Ostrom & Freel, 1997; Yung & Hammond, 1997; Flores, Eyre & Millstein, 1998; Kratzer & Hodgins, 1999).

According to Lerner *et al.*, (1997), examples of high risk behaviours associated with adolescence are teen pregnancy, unsafe sex, substance abuse, crime, school dropout or underachievement, delinquency and violence.

Aggression are viewed as particularly salient to adolescent development because it has been found to steadily increase into late adolescence (Bandura, 1978; Olweus, 1980; Fraser, 1996) and taper off in young adulthood (Loeber & Hay, 1997). The lack of findings for aggression clearly does not support the hypothesis.

The reason for the low level of support for this hypothesis may be due to the number of subjects being used to carry out this study. More significant results may have appeared if the numbers of subjects included in this study were more.

Although this study didn't replicate the same substance of other research, it still was in the right direction.

Hypothesis 1 could not be fully discarded either when Martial Arts is compared with other sporting activities with regards to certain elements. Martial Artists showed better results on the verbal aggression and hostility sub-scales than the other two sports groups (hockey and non-sporting participants). Adolescents whom participated in Martial Arts scored high on the personal growth and self-acceptance sub-scales in comparison with the other two groups (hockey and non-sporting participants).

4.2.2 Hypothesis 2

Progression in different levels (beginner, intermediate and advanced) in Martial Arts produces a different response to aggressive encounters.

Rationale

According to the results of this study, hypothesis 2 cannot be accepted. The expectation was to see a decrease in aggression as a function of time in training, thus moving up in belt rank. Also to be expected was the greater the dedication of a group of Martial Artists, the more likely they are to gather together in a cluster with low aggression, high respect and high introspection, when holding the time and training factors constant.

Madden (1995) concludes that after only one semester of classes in Martial Arts, students showed higher scores for feelings of self-control and lower scores for feelings of vulnerability and the likelihood to attack. The participants who took part in other contact sports, in this case hockey players, showed no changes in these measures.

Martial Artists with more experiences and more dedication respectively has the tendency to have reduced aggression and increased respect and introspection.

According to Kurian *et al.*, (1994), the longer the training in a Martial Arts programme, the more likely participants will adopt the values of such a programme.

4.2.3 Hypothesis 3

Martial Arts will reduce aggressiveness in young adolescents as opposed to other sports such as hockey and non-participation in sporting activities.

Rationale

Hypothesis 3 can be partially accepted because it has been found by Daniels and Thornton (1992) that athletes, whom participated in a Martial Arts programme, revealed a larger decrease in aggression over time than athletes participating in other sporting activities such as hockey or rugby as stated in the literature review in this study.

There are many types of activity that can be potentially beneficial for children. Traditional Martial Arts training programme not only teaches physical skills and competitiveness, but also positive values such as self-confidence, self-discipline, respect, goal setting and much more. Young children are offered a supportive environment with positive role models to help them develop into confident, polite and respectful people.

When frustrated, 41.67 % of the group of participants who played hockey allowed their irritation to show. This behaviour is seen fairly frequently among hockey players. Several sports tend to highlight competition and winning, whereas the Martial Arts have traditionally emphasised self-knowledge, self-improvement and self-control (Delva-Tauilili, 1995).

Nothing is held against participating in any sporting activity. Sports have many benefits in that it trains the body and develop stamina and endurance. Although, the spirit of power and competition that presides over the athlete is not good, it reflects a distorted vision of life. Therefore the conclusion can be made that the roots of the Martial Arts was not present. Martial Arts consist of the Zen (present) philosophies. In the spirit of the Zen, everyday life becomes the contest. There must be awareness at every moment: getting up in the morning, working, eating, and going to bed. That is the place for the mastery of self and that highlights the difference between Martial Arts participants and sporting activities such as hockey and non-sporting participants.

4.2.4 Hypothesis 4

A Martial Arts programme can serve as a coping strategy to improve overall mental health.

Rationale

Hypothesis 4 is in alignment with the following research and can therefore be partially accepted.

The researcher suggests that Martial Arts deserve recognition as worthy of being added to the list of therapeutic practices.

According to Seitz, Olson, Locke and Quam (1990), Martial Arts have come to be seen as inducing physical and mental relaxation and inculcating control over mind and body.

This in turn could be associated with improvements in self-confidence and self-esteem.

As such, the discipline of Martial Arts is currently regarded not so much as a technique for expressing aggression, but more as a method of self-defence and personal development, both of which can also be of therapeutic value (Weiser & Kutz, 1995).

Based on the findings of the study, the researcher believes that Martial Arts training develop the participant's mental and physical abilities, which are inextricably linked.

Parents of Martial Artists reported in a research done by Boudreau (1995) that they could see improvement in physical wellbeing and self-confidence as well as many other psychological benefits attributable to training in a Martial Arts programme in their children.

4.2.5 Hypothesis 5

Basic elements in Martial Arts (Tae Kwon Do) training produces decreases in aggression.

Rationale

According to the results of the study, hypothesis 5 cannot be accepted, although training in Tae Kwon Do can increase strength and muscle tone, reduce body fat, improve cardiovascular conditioning and endurance, improve balance and co-ordination, reduce stress, improve concentration and focus, improve performance in one's job, school, or sports, provide a structured programme of advancement with achievable goals, and

improve self-discipline and self-confidence (Brown, Wang, Ward, Ebbeling, Fortlage, Puleo, Benson & Rippe, 1995).

According to Haines (1995), many missing elements of the participants' lives can be replaced by training in any Martial Arts programme, specifically Tae Kwon Do; a Martial Arts which consists of most of these “therapeutic” elements and philosophies.

Martial Arts are therapeutic in that the “kata” or pattern of repetitive movements teaches students of a Martial Arts training programme to deal more efficiently with anxiety and stress.

4.3 Summary of results

The results of the analysis of differences between the different levels of Martial Arts showed no statistically significant differences between the levels on all the aggression subscales. The personal growth scores, obtained from the responses to the psychological wellbeing questionnaire, were significantly lower for the beginner group than for the other two groups. This difference was significant at the 10% level of significance. No differences were found between the three groups on the sub-scales of the Martial Arts questionnaire.

The following differences were found when comparing the results on the aggression test for the three groups with different sporting activities. The verbal aggression and hostility sub-scale scores of the Martial Arts group were significantly lower than those of the

other two groups, namely the hockey participation group and the group that did not participate in sport.

The results of the psychological wellbeing sub-scales indicated that the personal growth and self-acceptance scores of the Martial Arts group were significantly higher than those of the other two groups. In both cases the group that did not participate in any sport had the lowest scores.

The aim of the study was twofold. Firstly, the researcher wanted to determine whether progression in Martial Arts could create a gradual decrease in the aggressive behaviour of young adolescents. Secondly, the researcher wanted to determine whether Martial Arts could be used as a coping strategy for young adolescents to improve their overall mental wellbeing.

An aggression questionnaire and a psychological wellbeing questionnaire were completed by three groups, with a total of 24 participants in Group 1 and 24 participants each in Groups 2 and 3. One group participated in Martial Arts, the second group participated in hockey and the third group did not participate in any sport at all. The Martial Arts group also completed a Martial Arts questionnaire which focused on aspects such as tradition, technique and internal and external style.

The analysis focused firstly on determining the opinions of Martial Arts participants about the various questions in the Martial Arts questionnaire. Secondly, it focused on determining whether statistically significant differences existed between the results of participants on the three levels of Martial Arts with regard to the sub-scales of the

aggression, psychological wellbeing and Martial Arts questionnaires. The third set of analyses focused on determining whether statistically significant differences existed between the sub-scale scores of the three groups relative to their sport participation. The results are summarised below.

The results of the responses to the Martial Arts questionnaire indicate the following trends with regard to tradition. Most participants stated that the use of the language of origin of the Martial Arts, the use of rituals of respect, knowledge of the history of the art, uniforms, the forms (katas) as part of their Martial Arts style and competitions were slightly to very important. However, just over half of the participants felt that it was slightly unimportant or unimportant that the historical context should be explained to them. The participants were divided in their opinions about the importance of meditation: half of them felt it was unimportant, but the other half felt it was important.

The following trend was detected regarding internal and external style. The majority of the participants indicated that speed, strength, timing, balance and positioning were important to their style. The participants were divided in their perception of deception as part of their style, half of them stated that it was important and the other half disagreed, stating that it was not important.

Questions pertaining to technique yielded the following results. Half of the participants indicated that they watched the *Power Rangers/Teenage Mutant Turtle* TV series and used Martial Arts outside the club setting for their own benefit, and acknowledged that contact sport usually involved a certain degree of risk of acting aggressively and inflicting pain. Almost half of the participants also indicated that they were encouraged

to pursue a programme of physical fitness outside the class, that they became angry when kicked by opponents, felt very calm after practice and were interested in sport activities that would decrease their tendency to act in aggressive ways. Just over half of the participants indicated that they practised or discussed free-form fighting techniques (sparring), and the majority indicated that they used full contact sparring pads. The participants were divided in their opinions regarding whether techniques were described as the manipulation of energies. A quarter of the participants indicated that they did not feel aggressive when kicking the double-kicker, whereas half indicated that they sometimes felt aggressive when kicking the double-kicker.

4.4 Conclusion

There are a few components in any Martial Arts training programme, which could serve as a type of “treatment” for any participant. If any of these “treatment” components are missing, the Martial Arts programme will not have the desired outcome of helping juvenile delinquents decrease their susceptibility to acting aggressively.

The rituals of respect are one of the most important components for participating in Martial Arts. These rituals emphasise the integration of both body and mind. Other important components include the practice of forms (kata), meditation, and internal and external style.

Therefore, the researcher suggests that it is likely that all the non-physical aspects of the Martial Arts have a unique influence on the long-term psychosocial changes observed in the participants.

The researcher reached the conclusion, based on the statistics obtained from the responses to the psychological questionnaire, that the Martial Arts have many more positive influences than not.

All of the Martial Arts participants were particularly confident that people would portray them as giving persons. This can be construed as meaning that the Martial Arts teach friendliness and respect for others. Another positive influence the Martial Arts have on adolescents is that the Martial Arts give participants the confidence to expand their horizons, make plans for the future and make them a reality.

The researcher found that participation in Martial Arts enables participants to channel aggressiveness constructively. For this reason, the researcher tends to conclude that the practice of Martial Arts promotes positive psychological changes. It became evident that the participants in the Martial Arts were relatively composed individuals who had the ability to remain serene. Based on the statistics of the study, most of the participants in the Martial Arts had not broken things when they became angry.

Based on the data processing and the statistics in this study, the researcher strongly believes that the various “treatment factors” forming part of a Martial Arts training programme would make it unlikely that most of the Martial Arts participants would hit another person, even when provoked. Most of the participants in the Martial Arts training programme should never have trouble controlling their tempers, since they are trained to control their tempers and channel their aggressive feelings.

Chapter 5

Recommendation and conclusion

5.1 Introduction

This chapter provides the discussion and conclusion for the study, outlines the limitations, describes ongoing research and suggests recommendations for future research.

5.2 Strengths of the study

This study was aimed at determining if Martial Arts can be an effective coping mechanism to adolescents to cope with aggressive impulses by using Martial Arts as a change agent so that a greater number of people could become aware of the numerous benefits of a Martial Arts training programme. The contribution of this study is that it reinforced the argument that Martial Arts can be beneficial to young adolescents that struggle with high levels of uncontrollable aggression.

5.3 Making out a case for Martial Arts

There is a proverb in Farsi that “a tree that has more fruit will be closer to the ground”. This has significance for the practice of Martial Arts because one way of inculcating humility [defined as the attribute of modesty about one’s abilities, qualities and perhaps

one's importance (Oxford Dictionary, 1995)] in students of the Martial Arts would be to teach them that the stronger one becomes, the humbler one ought to be. It can therefore, be expected that a black belt would spar (fight) in quick succession with a few stronger and more senior black belt practitioners in order to help the more junior black belt remember that he/she might not be the best and that everybody's ability is limited.

This study highlights the impact of training on one's personal life as the sensei of the club indicates that Martial Arts is more than just a physical exercise: practitioners incorporate the practice of Martial Arts into their way of life.

Accordingly, the Martial Arts practitioner should take all that is learned in the Martial Arts practice and carry it over into other domains of life.

According to Martial Arts instructors, the first five dan ranks come from what you get out of the system; the next ranks come from what you give back (<http://www.kuksoolwon.co.nz/faq.html>).

According to the statistics done, Martial Artists was physically, psychologically and spiritually more fit than ever before. These benefits include being better able to control anger and tolerate stress. Skelton *et al.* (1991) assert that people may benefit from the study of Tae Kwon Do regardless of their age, size or athletic ability.

Martial Arts is a type of sport which should be understood less as teaching methods of aggression and more as teaching methods of self-defence which can also have therapeutic value. As the researcher has teaching experience and holds a second brown belt, the

researcher has observed the different ways in which the Martial Arts are taught and noted that different methods lead to different outcomes.

One of the different outcomes is the level of enhancement of learning to cope with aggressive behaviour. The traditional emphasis on coping with aggression, as understood by the researcher, generally results in strengthening the person's overall wellbeing. And if this holds truth, then the traditional styles of teaching the Martial Arts could be of therapeutic value by incorporating one of the most important elements of Martial Arts training that often tends to be neglected in modern athletic Martial Arts disciplines.

The statistics on the Martial Arts as a coping strategy for aggressive behaviour in young adolescents indicate that Martial Arts can be used as a coping strategy to channel aggressive behaviour. The positive results indicated by the statistics are not entirely unexpected. However, if Martial Arts alone were the answer, there would have already been a great reduction in the incidence of violence and aggression. Clearly, other “treatment” components are also necessary.

Taken from the statistics, Martial Arts, in comparison with other sporting activities, showed better results on the verbal aggression and hostility sub-scales than the other two sports groups (hockey and non-sporting participants). Adolescents whom participated in Martial Arts scored high on the personal growth and self-acceptance sub-scales in comparison with the other two groups (hockey and non-sporting participants).

Only when all the “treatment” components are included in a Martial Arts training programme (including rituals, the philosophy of ethical behaviour and restraint, coloured

belts indicating ranking, uniforms, meditation, forms (kata), a knowledge of history, and sparring) can it be posited that any Martial Arts programme could be used as a method of therapy.

The results indicated that there was no statistically significant difference between the participants at the three levels in Martial Arts (beginner, intermediate and advanced) of participation for any of the aggression sub-scales. Therefore, Martial Arts practitioners must not get too caught up in thinking about the next belt after the one they are currently preparing for, but keep their focus on the present and do their best at their current level. Everything that the Martial Arts practitioners learn is the foundation for what they will learn next. They should build strong foundations and strive for excellence in what they are doing at the moment.

Martial Arts are more than exercise; they are an art-form and should be regarded as such. Martial Arts should be considered with their entirety of philosophical thought and development of the mind in harmony with the body. If not, it would be like eating only the bitter skin of an orange while leaving the sweet inner substance untasted.

This vital premise is being overlooked nowadays, and if this tide is not turned, the Martial Arts may go into decline. This can be aptly summarised in the precept: *Ars sine scientia nihil est*, meaning: skill without knowledge is worthless.

Adolescents see and understand things in a black and white format, particularly those who tend to view the world from a simplistic perspective. During these psychological and hormonal changes that are so prevalent within this age group, a change of perception

brings about the understanding that there may be more depth to their world than previously believed. This shift in perception might bring about confusion and anger, specifically when these adolescent or teenagers may not have the guidance and positive influences that are so much needed during this difficult transition period. A range of psychological disorders, including violent outbursts and depression could be the result if this aggression and confusion has no valid outlet.

Tae Kwon Do attracts hundreds of millions of students because it comprises the grace and flexibility training of yoga, the self defense potential of Judo, and the mental ability of Aikido. Above all, Tae Kwon Do surpasses all other Martial Arts in its attention to all facets of the human being. The presence of Tae Kwon Do in the Olympics testifies to its worldwide presence and acceptance as the best Martial Art form. Even Karate-do, also immensely popular, cannot match Tae Kwon Do's universal appeal.

Tae Kwon Do can be practiced by anyone including those in the weakened physical state. Martial Arts is extremely easy to learn and incorporate into daily life.

To those who do not wish to devote years of time to perfecting the art, Tae Kwon Do's immediate ability to tone muscles, develop confidence, and encourage flexibility makes it especially appealing. Rigorous training schedules and results in other Martial Arts, like Tai Chi, Capoeira, and Aikido, demand may not be noticed for years or even decades.

Tae Kwon Do can be practiced sporadically and still be enjoyed for its physical and mental rewards. Teachers work one on one with students, tailoring the practice to their needs without sacrificing tradition.

Tae Kwon Do is the manifestation of the truth of life and despite its various techniques and features; Tae Kwon Do is essentially simple. Just like the extenuated life cycle of a tree ends in the production of a single seed, so is the long and strenuous training of Tae Kwon Do only for the perfection of a basic skill. Therefore it can be said that Tae Kwon Do is alive. Tae Kwon Do does not rest nor maintain a fixed shape and yet, it remains simple just like life. Because Tae Kwon Do and life are organized in harmony, each part of Tae Kwon Do is equal to its entirety. Only when every part of Tae Kwon Do is complete, the entirety can stand alone.

Mastery demands all of a person and it is only when one devotes oneself to a cause with his whole body and soul, one can become a true master.

The researcher found that all the components are included in the Martial Arts programme selected for this study, and therefore this training programme could be used as a “treatment” to help decrease aggressive behaviour in young adolescents.

One of the central goals of both psychotherapy and any Martial Arts programme is to know oneself and the world around one. The therapeutic effect stems from the commitment by participants to a complete mental and physical training programme. Although there are several unanswered questions about participation in Martial Arts, the Martial Arts may be finding a place in the treatment of psychological disorders, such as aggressive tendencies in the youth of today. To support these statements, statistics done within this study shows that Martial Artists are high scorers on the personal growth and self-acceptance sub-scales when compared with other sporting activities (hockey) and non-sporting participants.

In conclusion, the researcher suggests that research is beginning to support the claims of the old masters, namely that the Martial Arts can help develop better bodies and better minds, and may lead to a better, more peaceful society.

5.4 Limitations of the study

The study was limited by the small pool of participants (n=72) selected for all three groups taking part in this study. The sample size was restricted by time constraints since all of the participants still attended school. The researcher was therefore limited by the problem of finding the right time to discuss and hand out the questionnaires to be completed by the participants.

The researcher had a difficult time working with these particular age groups (aged 15-18 years) and it became clear to the researcher that these adolescents “needed” some type of management to improve any delinquent behaviour, because it limited the attention that the researcher could give to explaining the nature of the study. The adolescents did not seem to be interested in hearing what contribution they could make by participating in the study. Indolence apparently was a key factor in this lack of interest.

Another possible limitation may have been that most of the references used for carrying out this study were published quite a long time ago. More recent resources would have been preferable to come to desired conclusions for this specific age group (aged 15-18 years) and are strongly recommended for future research, not only on this topic, but also with regards to the adolescent.

5.5 Recommendations for future research

It is recommended that anger awareness training and role playing should be studied as ways of effectively reducing an athlete's anger or aggression.

It is also recommended that in-depth research should be done on the benefits that Martial Arts could offer the young children of today. There is scant empirical literature on the therapeutic benefits of Martial Arts training. This study touched on only a few of the positive effects that participation in Martial Arts tends to have on youngsters.

A goal for future research could be to design proper intervention studies to determine which particular aspects of the Martial Arts create these positive changes. Future research could confirm the generalisability of the many anecdotal reports from parents, explaining how their children (girls and boys) did better at school academically and also behaved better at school and at home.

Another recommendation for future research is that the increase in a person's self-concept gained through training in Tae Kwon Do should be investigated. Finkenburg (1990) comments that there has been no research so far that focuses on the increased self-confidence of people who undergo training purely in traditional Tae Kwon Do, especially as many instructors and students can testify to this benefit. Many of the participants who participated in this study said that they started their training in a Martial Arts programme because of greater fitness, self-defence ability, respect for others and psychological benefits.

To date no research has been done to substantiate the claim by many Tae Kwon Do instructors that the practitioners display leadership qualities. This is another anecdote of interest which could be pursued with improved research methodology (Kurian, Caterino & Kulhavy, 1993).

Through further studies/research, the effectiveness of training in traditional Tae Kwon Do in improving the mental status of adolescents with mental disorders, as classified by the DSM-IV, could be investigated (American Psychiatric Association, 2000).

There is little or no psychological research literature devoted solely to the Martial Arts (Hodge & Deakin, 1998).

As a preliminary foray into the domain of Martial Arts as a coping strategy to aggressiveness, this research has proven fruitful.

5.6 Conclusion

The sign of any matured samurai consists of mental attitude (calmness) and not skill. Therefore a samurai should neither be pompous nor arrogant.

In their pure form, the Martial Arts demand the intense awareness of the meditative mind, and have nothing to do with neither anger nor aggression. A practitioner is taught from the outset that the skills must never be used for personal gain, but only in self-defence or in the protection of others – and even then only enough force as is absolutely necessary should be used.

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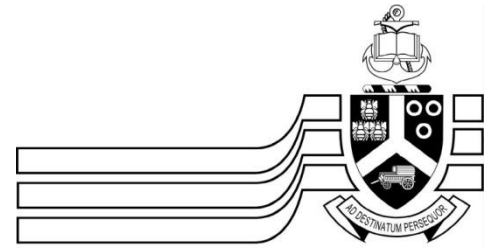
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Appendix A

Biographical information



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April 2009

Appendices

Appendix A:

Biographical information:

Participant Code:

Age:

Gender:

Type of Martial Art:

Years of participation:

Level of participation: Beginner, Intermediate, Advanced. (Please underline)

Why did you start participating in Martial Arts?

Appendix B

Aggression questionnaire

Appendix B:

Aggression questionnaire:

Use the 4 point scale to rate the statements below. Where “1” is “not at all” and “4” will be “very much so”. Please be as honest as possible. There are no right or wrong answers.

Circle the number that best describe your feeling towards the certain points:	Not at all	Some-what	Moder-ately so	Very much so
1. Some of my friends think I am a hothead.	1	2	3	4
2. If I have to resort to violence to protect my rights, I will.	1	2	3	4
3. When people are especially nice to me, I wonder what they want.	1	2	3	4
4. I tell my friends openly when I disagree with them.	1	2	3	4
5. I have become so mad that I have broken things.	1	2	3	4
6. I can't help getting into arguments when people disagree with me.	1	2	3	4
7. I wonder why sometimes I feel so bitter about things.	1	2	3	4
8. Once in a while, I can't control the urge to strike another person.	1	2	3	4
9.* I am an even-tempered (calm) person.	1	2	3	4
10. I am suspicious of overly friendly strangers.	1	2	3	4
11. I have threatened people I know.	1	2	3	4
12. I flare up quickly but get over it quickly.	1	2	3	4
13. Given enough provocation, I may hit another person.	1	2	3	4



14. When people annoy me, I may tell them what I think of them.	1	2	3	4
15. I am sometimes eaten up with jealousy.	1	2	3	4
16.* I can think of no good reason for ever hitting a person.	1	2	3	4
17. At times I feel I have had a raw deal out of life.	1	2	3	4
18. I have trouble controlling my temper.	1	2	3	4
19. When frustrated, I let my irritation show.	1	2	3	4
20. I sometimes feel that people are laughing at me behind my back.	1	2	3	4
21. I often find myself disagreeing with people.	1	2	3	4
22. If somebody hits me, I hit back.	1	2	3	4
23. I sometimes feel like a powder keg ready to explode.	1	2	3	4
24. Other people always seem to get the breaks.	1	2	3	4
25. There are people who pushed me so far that we came to blows.	1	2	3	4
26. I know that 'friends' talk about me behind my back.	1	2	3	4
27. My friends say that I'm somewhat argumentative.	1	2	3	4
28. Sometimes I fly off the handle for no good reason.	1	2	3	4
29. I get into fights a little more than the average person.	1	2	3	4

Appendix C

The “How I think” (Psychological wellbeing) questionnaire

Appendix C:

The “How I think” (Psychological wellbeing) questionnaire

This Questionnaire measures cognitive distortions (aggressive behaviour) in antisocial youth. The following set of questions deals with how you feel about yourself and your life. Please remember that there are no right or wrong answers. Please indicate how strongly you agree or disagree with each of the following statements:

Circle the number that best describe your feeling towards the certain points:	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
1. I like most parts of my personality.	1	2	3	4
2. When I look at the story of my life, I am pleased with how things have turned out so far.	1	2	3	4
3. Some people wander aimlessly through life, but I am not one of them.	1	2	3	4
4. The demands of everyday life often get me down.	1	2	3	4
5. In many ways I feel disappointed about my achievements in life.	1	2	3	4
6. Maintaining close relationships has been difficult and frustrating for me.	1	2	3	4
7. I live life one day at a time and don't really think about the future.	1	2	3	4
8. In general, I feel I am in charge of the situation in	1	2	3	4



which I live.				
9. I am quite good at managing the responsibilities of daily life.	1	2	3	4
10. I sometimes feel as if I've done all there is to do in life.	1	2	3	4
11. For me, life has been a continuous process of learning, changing and growth.	1	2	3	4
12. I think it is important to have new experiences that challenge how I think about myself and the world.	1	2	3	4
13. People would describe me as a giving person, willing to share my time with others.	1	2	3	4
14. I gave up trying to make big improvements or changes in my life.	1	2	3	4
15. I tend to be influenced by people with strong opinions.	1	2	3	4
16. I have not experienced many warm and trusting relationships with others.	1	2	3	4
17. I have confidence in my own opinions, even if they are different from the way most other people think.	1	2	3	4
18. I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4
19. I am not afraid to voice my	1	2	3	4



opinions, even when they are in opposition to the opinions of most people.				
20. I have a sense of direction and purpose in my life.	1	2	3	4
21. In general, I feel confident and positive about myself.	1	2	3	4
22. Most people see me as loving and friendly.	1	2	3	4
23. I am not interested in activities that will expand my horizons.	1	2	3	4
24. I do not fit very well with the people and the community around me	1	2	3	4
25. My decisions are not usually influenced by what everyone else is doing.	1	2	3	4
26. I don't have a good sense of what it is I'm trying to accomplish in life.	1	2	3	4
27. I feel like many of the people I know have got more out of life than I have.	1	2	3	4
28. I often feel lonely because I have few close friends with whom to share my concerns.	1	2	3	4
29. When I think about it, I haven't really improved much as a person over the years.	1	2	3	4
30. I often feel overwhelmed by my responsibility (either from school / sports activities / other daily	1	2	3	4



responsibilities).				
31. It's difficult for me to voice my own opinions on controversial matters.	1	2	3	4
32. I used to set goals for myself, but that now seems like a waste of time.	1	2	3	4
33. My attitude about myself is probably not as positive as most people feel about themselves.	1	2	3	4
34. It seems to me that most other people have more friends than I do.	1	2	3	4
35. I have the sense that I have developed a lot as a person over time.	1	2	3	4
36. I have difficulty arranging my life in a way that is satisfying to me.	1	2	3	4
37. I often change my mind about decisions if my friends or family disagree.	1	2	3	4
38. I enjoy making plans for the future and working to make them a reality.	1	2	3	4
39. When I compare myself to friends and acquaintances, it makes me feel good about who I am.	1	2	3	4
40. I know that I can trust my friends, and they know they can trust me.	1	2	3	4



41. I am an active person in carrying out the plans I set for myself.	1	2	3	4
42. I'm able to channel my aggressiveness constructively.	1	2	3	4
43. I can utilise aggression as a facilitating force.	1	2	3	4

Appendix D

Questionnaire pertaining to participation in Martial Arts

Appendix D:

Questionnaire pertaining to participation in Martial Arts:

The following set of questions deals with elements/key features identified in Martial Arts of how you, the participant, perceive it. Please read each point over carefully, and assign a rating from “1” to “4” to each point. Remember that there are no right or wrong answers.

Circle the number that best describe your feeling towards the certain points:	Un- important	Slightly un- important	Slightly Important	Very important
A. Tradition (To what extend is tradition, as defined by your Martial Art important to your Martial Arts) 1. Use of language of origin: are words from the language spoken where the art was developed used (i.e., to describe moves, give directions, as a sign of respect, to count out drills, etc.)	1	2	3	4
2. Rituals of respect: (Bowing, ritual phrase, seating arrangement, etc.)	1	2	3	4
3. Historical context explained: (Whether instructors take time to explain where exercise comes from, how it's developed etc.)	1	2	3	4
4. Knowledge of history of the art made as a requirement for progression.	1	2	3	4
5. Uniform: (How important is it? Does it signify anything?)	1	2	3	4
6. Forms: (kata in Japanese Martial Arts) How important are forms to your Martial Arts style?	1	2	3	4
7. How important is the performance of forms aspect of	1	2	3	4



competitions?				
8. How important is meditation to the practice of your style?	1	2	3	4
B. Internal and External Style (rate according to importance)				
1. Speed (ext)	1	2	3	4
2. Strength (ext)	1	2	3	4
3. Timing (int)	1	2	3	4
4. Balance (int)	1	2	3	4
5. Positioning (int)	1	2	3	4
6. Deception (ext)	1	2	3	4
C. Techniques (with “1” being not at all and “4” being exclusively)	Not at all	Some-times	Most of the time	Exclusively
To what degree are techniques described as manipulation of energies: (Is sparring important to the practice of your Martial Art?)	1	2	3	4
1. How much time is spent discussing/practising free form fighting techniques and/or sparring.				
2. Degree of sparring: How often are full contact sparring pads used when practising sparring?	1	2	3	4
3. I watch TV series/movies like the <i>Power Rangers/Teenage Mutant Ninja Turtles</i>.	1	2	3	4
4. I use Martial Arts outside of the club setting for my own benefits.	1	2	3	4
5. Contact Sport usually involves a certain amount of risk of acting aggressively and also pain infliction.	1	2	3	4
6. Are you as a Martial Arts participant given encouragement to	1	2	3	4



pursue a programme of physical fitness outside of Martial Arts class?				
7. To what degree are techniques described as manipulation of energies?	1	2	3	4
8. I felt aggressive when I had to kick the double-kicker.	1	2	3	4
9. I became angry when my opponent kicked me when we did a sparring-competition.	1	2	3	4
10. I'm always very calm when I leave the Martial Arts club after training.	1	2	3	4
11. I am not interested in sports activities that will possibly decrease/cure me of my tendency to act in aggressive ways.	1	2	3	4

Appendix E

Descriptive statistics on all tests done per level of Martial Arts participation

Table 1: Descriptive statistics per level on aggression subscales

Descriptive Statistics

Level		N	Minimum	Maximum	Mean	Std. Deviation
Beginner	Physical Aggression	6	13.00	22.00	18.1667	4.30891
	Verbal Aggression	6	8.00	14.00	11.0000	2.00000
	Anger	6	12.00	19.00	16.1667	2.71416
	Hostility	6	11.00	23.00	15.3333	4.22690
	Valid N (listwise)	6				
Intermediate	Physical Aggression	9	15.00	24.00	19.6667	3.24037
	Verbal Aggression	9	7.00	15.00	10.4444	2.65100
	Anger	9	11.00	19.00	15.0000	2.34521
	Hostility	9	10.00	21.00	16.6667	4.21307
	Valid N (listwise)	9				
Advanced	Physical Aggression	9	12.00	20.00	17.0000	2.69258
	Verbal Aggression	9	7.00	14.00	11.0000	2.44949
	Anger	9	13.00	19.00	15.0000	2.00000
	Hostility	9	10.00	21.00	15.7778	3.15348
	Valid N (listwise)	9				

Table 2: Descriptive statistics per level on psychological wellbeing subscales

Descriptive Statistics

Level		N	Minimum	Maximum	Mean	Std. Deviation
Beginner	Autonomy	6	12.00	23.00	17.0000	4.42719
	Environmental Mastery	6	8.00	12.00	9.0000	1.67332
	Personal Growth	6	11.00	15.00	13.6667	1.75119
	Positive Relations	6	9.00	17.00	14.0000	2.96648
	Purpose in Life	6	17.00	22.00	19.3333	1.75119
	Self Acceptance	6	13.00	19.00	16.8333	2.40139
	Valid N (listwise)	6				
Intermediate	Autonomy	9	12.00	22.00	15.7778	2.90593
	Environmental Mastery	9	7.00	14.00	9.8889	2.20479
	Personal Growth	9	12.00	18.00	14.6667	1.65831
	Positive Relations	9	10.00	20.00	15.1111	3.55121
	Purpose in Life	9	16.00	20.00	18.4444	1.50923
	Self Acceptance	9	13.00	18.00	16.3333	1.93649
	Valid N (listwise)	9				
Advanced	Autonomy	9	12.00	18.00	14.0000	2.00000
	Environmental Mastery	9	7.00	13.00	9.4444	2.24227
	Personal Growth	9	11.00	18.00	15.6667	2.06155
	Positive Relations	9	11.00	17.00	14.2222	1.78730
	Purpose in Life	9	17.00	21.00	18.4444	1.23603
	Self Acceptance	9	13.00	19.00	15.3333	2.00000
	Valid N (listwise)	9				

Table 3: Descriptive statistics per level on Martial Arts questionnaire subscales

Descriptive Statistics (a)

Level		N	Minimum	Maximum	Mean	Std. Deviation
Beginner	Martial Arts Tradition	6	18.00	29.00	24.5000	4.46094
	Martial Arts Internal/External style	6	14.00	24.00	18.3333	3.50238
	Martial Arts Techniques	6	20.00	30.00	25.1667	4.07022
	Valid N (listwise)	6				
Intermediate	Martial Arts Tradition	9	18.00	28.00	24.2222	3.73423
	Martial Arts Internal/External style	9	15.00	23.00	18.4444	2.83333
	Martial Arts Techniques	9	20.00	33.00	27.4444	4.30439
	Valid N (listwise)	9				
Advanced	Martial Arts Tradition	9	15.00	28.00	22.6667	3.74166
	Martial Arts Internal/External style	9	12.00	24.00	19.1111	3.62093
	Martial Arts Techniques	9	20.00	36.00	26.3333	4.58258
	Valid N (listwise)	9				

a No statistics are computed for one or more split files because there are no valid cases.

Descriptive statistics on all tests done per group who do not participate in sport, those who play hockey and those who participate in Martial Arts.

Table 4: Descriptive statistics on aggression scales per group

Descriptive Statistics

Group		N	Minimum	Maximum	Mean	Std. Deviation
No Sport	Physical Aggression	24	12.00	27.00	18.3750	4.64208
	Verbal Aggression	24	10.00	18.00	13.6667	1.97080
	Anger	24	11.00	23.00	16.5417	2.99244
	Hostility	24	16.00	29.00	20.7083	3.07131
	Valid N (listwise)	24				
Hockey	Physical Aggression	24	14.00	33.00	20.2083	4.77292
	Verbal Aggression	24	9.00	20.00	13.9167	2.68517
	Anger	24	10.00	22.00	15.8750	3.57908
	Hostility	24	9.00	29.00	18.5417	4.64364
	Valid N (listwise)	24				
Martial Arts	Physical Aggression	24	12.00	24.00	18.2917	3.40689
	Verbal Aggression	24	7.00	15.00	10.7917	2.34018
	Anger	24	11.00	19.00	15.2917	2.27423
	Hostility	24	10.00	23.00	16.0000	3.71834
	Valid N (listwise)	24				

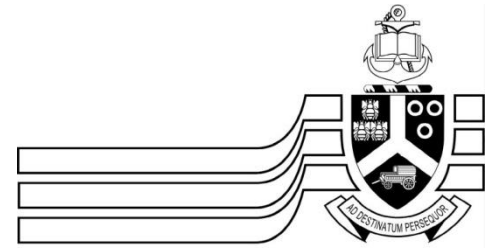
Table 5: Descriptive statistics on psychological wellbeing scales per group

Descriptive statistics

Group		N	Minimum	Maximum	Mean	Std. Deviation
No Sport	Autonomy	24	7.00	20.00	14.2083	3.72978
	Environmental Mastery	24	6.00	12.00	9.8750	1.39292
	Personal Growth	24	8.00	17.00	13.2500	2.00543
	Positive Relations	24	9.00	18.00	14.0833	2.73332
	Purpose in Life	24	13.00	23.00	19.0417	2.61233
	Self Acceptance	24	9.00	18.00	13.1667	2.31567
	Control scale	24	3.00	9.00	6.0000	1.35133
	Valid N (listwise)	24				
Hockey	Autonomy	24	12.00	22.00	15.1667	2.11961
	Environmental Mastery	24	6.00	16.00	10.3333	2.18028
	Personal Growth	24	12.00	18.00	14.3333	1.57885
	Positive Relations	24	9.00	22.00	15.8333	2.91423
	Purpose in Life	24	15.00	25.00	19.5000	2.43168
	Self Acceptance	24	10.00	18.00	14.2917	1.98865
	Control scale	24	4.00	12.00	7.8750	2.19312
	Valid N (listwise)	24				
Martial Arts	Autonomy	24	12.00	23.00	15.4167	3.17486
	Environmental Mastery	24	7.00	14.00	9.5000	2.04302
	Personal Growth	24	11.00	18.00	14.7917	1.93321
	Positive Relations	24	9.00	20.00	14.5000	2.76626
	Purpose in Life	24	16.00	22.00	18.6667	1.46456
	Self Acceptance	24	13.00	19.00	16.0833	2.08341
	Control scale	24	6.00	11.00	8.8750	1.39292
	Valid N (listwise)	24				

Appendix F

Participation information letter



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April 2009

Appendix F: Participation information letter

Research Study: Martial Arts as a coping strategy for aggressive behaviour in young adolescence.

Dear participant

This study is being done as part of a Masters Degree in Human Movement Science. The aim of this study is to determine if participation in Martial Arts can serve as a deterrent to aggressiveness and whether the execution of various factors (e.g. philosophy) in Martial Arts is accountable for the reduction in aggressive behaviour. The various stressors involved that can be seen as a cause of aggressiveness in young adolescents will also be determined. The last objective of this study is to determine whether Martial Arts practice cultivates a decrease in feeling vulnerable to attack. The difference between participation in Martial Arts and participation in other sports (e.g. hockey) to decrease aggressiveness

will also be looked at. In order to accomplish these objectives, you, the participant, will complete a questionnaire. The questionnaire consists of items which you will have to rate on a scale from one to four.

Information gathered through the questionnaire, will be used for further research purposes and will be published in a research report. The information obtained might also be used for further research and possibly as part of future publications. However, personally you will remain anonymous and any information that might identify you will remain strictly confidential.

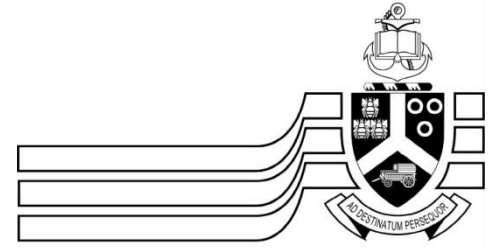
Your participation is completely voluntary and I cannot give any rewards, monetary or otherwise for your participation in this study. An abstract of the results can be provided once the study is complete, if you would prefer it. Your participation in this study will help a great deal to determine if participation in Martial Arts can indeed serve as a deterrent to aggressiveness. If you are interested to participate in this study, please complete and sign the accompanying consent form. If you or your parents/legal guardian has any questions, feel free to contact me on 082 447 5879.

Thank you

Soekie Roux

Appendix G

Letter of Consent from parents



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April 2009

Appendix G:

Letter of Consent from parents

University of Pretoria

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0002

Masters Degree in Human Movement Science: Martial Arts as a coping strategy for aggressive behaviour in young adolescence.

Dear parent/legal guardian and participant, we are asking you to take part in this research so that we can study the progression in different belt ranks (beginner, intermediate and advanced) in Martial Arts to see if this sports type can be used to decrease the aggressiveness of young adolescents (male and female) as compared to other sports (like hockey) and non-sporting participants.

This research will be conducted by Soekie Roux and is promoted by Prof. B. Steyn.

Participants must be between the ages of 15 and 18 years (male and female). If you agree to allow your child to participate in this study / if they agree to be in this study, they will be asked to fill out a questionnaire that will be explained in detail to them. The questionnaire consists of items, which you will have to rate on a scale from one to four.

The objectives of this questionnaire is to determine if participation in Martial Arts can serve as a deterrent to aggressiveness and whether the execution of various factors (e.g. philosophy) in Martial Arts is accountable for the reduction in aggressive behaviour. The aim of this study is to determine if progression in belt rank (beginner, intermediate and advanced) in Martial Arts can have a gradual decrease in aggressive behaviour of young adolescents. The researcher also wants to determine if Martial Arts can be used as a coping strategy for young adolescents (male and female) to better their overall mental wellbeing. Participants in Martial Arts will be compared to other sporting activities such as hockey and also to participants absent from any sporting activity. The various stressors involved that can be seen as a cause of aggressiveness in young adolescents will also be determined. The last objective of this study is to determine whether Martial Arts practice cultivates a decrease in feeling vulnerable to attack.

If you allow your child to participate and they agree, you will be helping in determining if participation in Martial Arts can be used as a coping strategy for aggressiveness. Participation is strictly confidential. The data may be used for future research, but no names will be kept with the data. The results of this study will be made available in a research report and possibly future articles or other publications.

If your child decides to participate, they can withdraw at any stage of the process. You or your child may ask any questions about the study. Soekie Roux is available on 082 447 5879.

If you agree to allow your child to participate in this study, please sign your name.

I, parent/legal guardian of
agree to allow my child to participate in this study to determine if participation in Martial Arts can be used to decrease the aggressiveness in young adolescents (male and female) and therefore to be used as a coping strategy for aggressiveness in young adolescents. I understand that my child's participation is entirely voluntary, confidential, that they can withdraw from the study at any point in time and that the nature of the research has been explained to me.

If I have any questions regarding the nature of this study, I can call Soekie Roux on 082 447 5879.

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Signature of Parent/Legal guardian Date

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Signature of Participant Date

Contact Phone number of parent/legal guardian:

Appendix H

Letter of Consent from Master Richard West



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

**AFRICA
TAEKWONDO
ASSOCIATION**
MASTER WEST'S COMBAT TAEKWONDO
Reg.No. 98 22981 08
www.masterwest.za.org

1 October 2006

To whom it may concern

I hereby give permission to Soekie Roux to use my students in her thesis.

These students train at Master West's Academy.

Yours Sincerely

Richard L. West

6th Degree International Black belt
Member of the Martial Arts Teacher Association International
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From Grand Master Haeng Ung Lee, Founder of Tae Kwon Do and President of the American Tae Kwon Do Association

“Welcome to the largest family of Martial Artists in the world. Tae Kwon Do is the most modern “traditional” Martial Arts available today. And, my staff and I work very hard to continue advancing the art so that every new student will be introduced to ‘state of the art’ Tae Kwon Do.

White belt doesn’t mean that you are at the bottom. You have made the step that hundreds of thousands only dream about. You, unlike those who only talk about it, have conquered the first step to achieving your black belt. But more importantly, all good things have a strong foundation and a solid beginning. The white belt is your foundation. And, I guarantee that the foundation you will build on within Tae Kwon Do is ‘light years’ ahead of what was offered to me when I was a white belt.

Always remember that a frog too, was once just a tadpole.”