

**AN EVALUATION OF A TAI CHI PROGRAMME  
WITH STREET CHILDREN IN SOUTH AFRICA**

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**June, 2008**

## DECLARATION

I declare that this thesis, “ An evaluation of a Tai Chi programme with street children in South Africa”, is my own work and that all sources used or quoted have been indicated and acknowledged by means of complete references.



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B Naidoo  
Durban

June, 2008

## DEDICATION

- To my dad **Mr Maganedu Naidoo (Morris)** and my late mom **Mrs Ruthnavalee Naidoo** who have instilled in me from a very early age the value of a sound education. Their constant encouragement has enabled me to persevere academically.
- To my in-laws **Mr Dorasamy Reddy and Mrs Manormoney Reddy** for embracing me into their family and constantly supporting and encouraging me with my academic pursuits.

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## **ABSTRACT**

Increasing amounts of scientific evidence has suggested that a mind-body exercise, such as Tai Chi, is related to improvements in mental health, emotional well-being and stress reduction. No prior study has examined the effect of Tai Chi exercise amongst street children. Working within the context of community health psychology, the present study evaluated a Tai Chi program with street children within the South African context. The research design was quasi-experimental with the participants from places of safety within the surrounds of Durban attending Tai Chi exercise sessions twice per week for 16 weeks. This programme was pre- and post-tested with a focus group interview and Carol Ryff's standardized psychological well-being scale. Statistically significant improvements in the following measures of psychological well-being were found: autonomy, personal growth, environmental mastery, purpose in life, positive relations with others and total psychological well-being. Qualitative findings revealed an increase in positive feelings, improved physical fitness and mental health, and stress reduction. Further outcome evaluations by stakeholders (child care worker, Department of Health Officials, Tai Chi teacher) supported the qualitative findings, as well as indicating increased self-confidence and a positive synergy within the group.

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## **CHAPTER 1: INTRODUCTION**

### **1.1 Orientation**

Recent years have indicated an alarming increase in the number of street children around the world, especially in poor and developing countries as evident in Thailand, India, Brazil, and here in South Africa.

Despite the momentous political changes that South Africa has undergone in recent years (The most notable being the installation in 1994 of the country's first democratically elected government), the majority of South African children are still faced by enormous socio-economic problems, which compromise their development (National Institute for Economic Policy, 1996). These problems include poverty, HIV/AIDS, homelessness, unemployment, crime, and exposure to violence. About 60% of those in poor South African households, constituting just over half of the country, are children (NIEP, 1996; South African Institute of Race Relations (SAIRR), 1996). Children living in these impoverished settings are significantly exposed to food shortages, physical and sexual abuse, violence and the visible effects of the HIV/AIDS pandemic.

In the face of these hardships children run away from home and seek a better life on the streets. When these children leave their families they join 'substitute families' on the streets such as criminal gangs, prostitute rings and bands of street children. Children

growing up under these conditions are reported to display a high prevalence of stress-related psychological symptoms, difficulties in cognitive development, lower levels of academic achievement, and higher rates of behavioural and anti-social disorders (Desjarlais, 1994).

Since research has highlighted that adolescence is a developmental stage that is characterized by a high number of psychological and physical changes (Brown, 1992; Harter, 1988), adolescents that end up on our streets may experience compounded difficulties with the absence of supportive adult care-givers. Research identifies the important elements of self-concept as self-esteem, an assessment of one's own worth, and mastery, the extent to which one feels in control of important aspects of one's life (Park, 2003:41). Thus, a positive self-concept during adolescence can influence not only mental health but also physical health. Park, Cohen and Herb (1990) also support the notion that adolescence is a transitional period marked by changes in the body, mind and social relationships. Life on the street on a full-time basis endangers the lives of children and is developmentally incapacitating; street life fosters feelings of disempowerment and social disconnection and results in psychological distress and emotional instability (Schimmel, 2006:212). Many researchers have now focused their attention on the development of psychological well-being using physical activity programmes (Biddle, Fox & Boucher, 2000).

Although the beneficial effects of physical exercise on psychological processes has a long history ("a strong mind in a strong body" dates back to ancient Greece), it has only

been in the past hundred years that experimental investigations linking physical activity and psychological well-being were undertaken and it was not until the 1970s that systematic attempts to link physical activity and mental health were made (Anderson, 2002). In recognition that habitual physical activity brings about a range of health related benefits, it is only the last decade that has seen the development of guidelines specifically aimed at young people (Gilson, 2003). There is much indication that sedentary lifestyles carry at least twice the risk of serious disease and premature death (Berlin & Colditz, 1990; Powell, Thompson, Caspersen & Kendrick, 1987). The public burden of an inactive lifestyle is high and the promotion of physical activity could provide a cost effective strategy for public health improvement (Morris, 1994). In the US it has been estimated that inactivity accounts for nearly a third of all deaths from coronary heart disease, colon cancer and diabetes (Powell & Blair, 1994). The strength of this evidence has led to a US Surgeon General's Report entitled "Physical Activity and Health" (1996) calling for nationally driven initiatives to promote physical activity. In the UK the Health of the Nation Task Force on Physical Activity has also launched similar programmes (Department of Health, 1994).

In South Africa such national physical activity health initiatives and programmes to address inactivity also seem to be gaining momentum. The Ethekwini Department of Health has recently initiated a Tai-Chi programme for street children to improve their health and psychological well-being, and the present research was occasioned by a



personal request made by this Department of Health to explore the influence of the Tai Chi programme on the psychological well-being of street children.

To minimize the high levels of stress amongst children living on the street the Department of Health and Non-Governmental Organizations will have to give strong consideration to a broad range of approaches that can be incorporated within local health improvement programmes to promote mental health. Although the somatic benefits of physical exercise are well documented, hard evidence to support an equivalent relation between exercise and psychological well-being is less plentiful (Scully, Kremer, Meade, Graham & Dudgeon, 1998:111). According to Biddle et al. (2000:4) exercise may offer substantial potential alone or as an adjunct in improving the psychological well-being of many individuals. There are many important benefits that are associated with the potential use of exercise in such a role. First, exercise is cheap. Second, exercise carries little side-effects. Third, exercise can be self-sustaining once the basics have been learnt. Fourth, many of the non-drug treatments such as cognitive behavioural therapy can be expensive and are often in short supply. Finally, given the inherent physical gains, exercise should be promoted regardless of any impact on mental health (Biddle et al, 2000:5). The Tai Chi programme offered by the Ethekwini Department of Health may offer substantial benefits in improving the psychological well-being of the Durban street children participating in the programme.

Tai Chi also known as Tai Chi Chuan is a form of classical Chinese martial art developed 700 years ago. Historically, practicing Tai Chi was to improve or maintain

health, ensure self-defence, improve mental accomplishment and to obtain immortality (Olson, 1984). Sandlund and Norlander (2000), state that Tai Chi provides a vehicle for meditation and spiritual well-being. This form of intervention is receiving increasing popularity internationally and the programme offered by the Ethekewini Department of Health with street children provided an ideal opportunity for the evaluation of this Tai Chi intervention on their psychological well-being.

According to Edwards, Ngcobo and Pillay (2004: 1279) psychological well-being is influenced by personal, interpersonal, and environmental factors, and invariably, by changes within the context of life stages and developmental tasks. One can be assured that when the youth land on the streets their psychological well-being is mitigated by the factors listed above. Research has shown that psychological well-being develops through a combination of emotional regulation, personality characteristics, identity and life experience (Helson & Srivastava, 2001), increases with age, education, extraversion, and consciousness, and decreases with neuroticism (Keyes, Shmotkin, & Ryff, 2002).

The assessment of psychological well-being amongst adolescent youths in South Africa is pertinent at this time as there seems to be an influx of adolescents landing on the street. Many of these youth come from abusive, dysfunctional and neglected home environments which exacerbate their entry into street life (Tudoric-Ghemo, 2005:xii). An examination of the indicators of adolescent well-being from the incidence of

malnutrition, infant and child mortality rates, physical and sexual abuse, child labour, and missed education, all suggest that South Africa remains a particularly impoverished and hostile environment for most of its children (Lockhat & Van Niekerk, in press; NIEP 1996).

This chapter is concerned with the contextualization of the study and presents the significance of the research, the research question, aims of the study and an overview of the remaining chapters.

## **1.2 Motivation for study to be undertaken**

While studies refer to the general relationship between physical activity and psychological well-being as such, a comprehensive literature review has revealed that very few studies have used any objective, standardized measures of psychological well-being, and the present investigation into Durban street adolescents engaged in a Tai Chi programme constitutes original research. It was considered that such a study could yield valuable scientific information for health and psychological interventions with street children.

## **1.3 Aims of the study**

The aim of this research was to evaluate the psychological well-being of Durban street children before and after they have engaged in a Tai Chi programme.

## **1.4 Hypotheses**

It is hypothesized that persons who engage in a regular Tai Chi programme would have significantly improved psychological well-being as evaluated quantitatively by changes in children's self-perceptions with a standardized psychological wellbeing scale before and after the interventions and as evaluated qualitatively by stakeholders involved in the programme including the children themselves.

## **1.5 Definition of terms**

### **1.5.1 Street children**

There have been overwhelming responses by professionals in the field of child and youth care to provide a suitable definition for street children. The Human Sciences Research Council (HSRC) has defined a street child as a person who is under the age of 18 years, has left his or her home either permanently or temporarily because of a variety of familial and social problems that have impacted negatively on the child, and who spend a large amount of time unsupervised on the street, depending on themselves and a subculture of other youths for their physical and emotional existence (Schurink, 1993).

The most general working definition for street youths is from the Inter-Non-Governmental Organisation (Inter-NGO) in Switzerland which identifies a street child as:

*“any girl or boy who has not reached adulthood, for whom the street (in the widest sense of the word, including unoccupied dwellings, wasteland, etc.) has become his or her habitual abode and/or sources of livelihood, and who is inadequately protected, supervised or directed by responsible adults” (Inter-NGO, 1985 in Schurink, 1993:5).*

### **1.5.2 Psychological well-being**

Based on the general public health and community psychological approach and including the views of Corben and Lindsey (1997), Wissing and van Eeden (1998), Pretorius (1998), Repucci, Woolard and Fried (1999), the following assertions on psychological wellness seem apposite:

- Conceptualizations of psychological wellness in the literature are very diverse due to its transient nature. Psychological well-being is multifactorial in etiology, process and promotion. Factors that define psychological wellness will differ at different ages and in different circumstances.
- In general, wellness can be conceptualized as the positive component of optimal health and psychological wellness conceptualized as the positive component of psychological health.
- Psychological wellness has multidimensional, personal, transactional and environmental determinants, which become more complex as the human life cycle progresses. Environmental factors also include non-psychological factors such as food, housing and employment.

- It is better to promote psychological wellness than prevent factors impeding wellness. There are many routes to psychological wellness and methods to promote it (Edwards, 2002a).

While mental health generally implies some experience of psychological well-being, in the context of this study 'psychological well-being' also refers to a particular empirical construct, conceptually and theoretically grounded on various research traditions which led to the establishment of a specific measurement scale (Ryff, 1989).

An objective, standardized scale of psychological well-being was developed by Ryff (1989). The scale is theoretically grounded on Maslow's (1968) conception of self-actualization, Rogers' (1961) view of the fully functioning person, Jung's (1933) formulation of individuation, Allport's (1961) conception of maturity, Erikson's (1959) psychosocial stage model, Buhler's (1935) basic life fulfillment tendencies, Neugarten's (1973) descriptions of personality change in adulthood and old age and Jahoda's (1958) six criteria of positive mental health (Keyes, Shmotkin & Ryff, 2001; Ryff, 1989). The scale is presently regarded as the best objective measure of psychological well-being (Conway & Macleod, 2002).

Ryff's (1989) scale includes six dimensions of psychological well-being in self-acceptance, positive relations with others, purpose in life, autonomy, personal growth and environmental mastery. Ryff thought that well-being could be made sense of by breaking it into a number of areas or components. She identified the following areas as contributing to people's experience of well-being. For each area the following needs to be considered:

- “What does this mean day to day?”
- “How much am I ‘doing’ it in my life, today?”
- “How could I increase that tomorrow?”

#### **1.5.2.1 Self-acceptance**

This means having a positive attitude toward yourself; acknowledging and accepting multiple aspects of self; feeling positive about your past life. It means being able to say; “when I look at the story of my life, I am pleased with how things have turned out so far”.

#### **1.5.2.2 Personal growth**

This means having feelings of continued development and potential and being open to new experiences; feeling increasingly knowledgeable and effective. It means being able to say; “for me, life has been a continuous process of learning, changing, and growth.”

#### **1.5.2.3 Purpose in life**

This means having goals and a sense of direction in life; feeling that both present and past experiences are meaningful; holding beliefs that give meaning to life. It means being able to say; “some people wander aimlessly through life; I am not one of them.”

#### **1.5.2.4 Environmental mastery**

This means feeling competent and able to manage a complex environment; choosing or creating personally suitable contexts. It means being able to say; “I am good at managing the responsibilities of daily life.”

#### **1.5.2.5 Autonomy**

This means being self-determining, independent, and regulating your behaviour internally; resisting social pressures to think and act in certain ways; evaluating yourself by personal standards. It means being able to say; “I have confidence in my own opinions, even if they are different from the way most other people think.”

#### **1.5.2.6 Positive relations with others**

This means having warm, satisfying, trusting relationships; being concerned about others’ welfare; being capable of strong empathy, affection, and intimacy; understanding give-and-take of human relationships. It means being able to say; “People would describe me as a giving person, willing to share my time with others” (Adapted from CD ‘Ryff’s Scales of Psychological Well-Being’, 1989).

#### **1.5.3 Physical activity**

Physical activity is an umbrella term describing any bodily movement produced by the skeletal muscles resulting in energy expenditure (Biddle et al, 2002:8). Physical activity



can also be defined as an umbrella term of human behaviour with multiple dimensions and sub-categories such as exercise, sport, leisure activities, dance, transportation etc. (Corbin & Lindsey, 1997).

#### **1.5.4 Tai Chi**

As a form of health promotion, deep breathing and continuously moving meditation, Tai Chi, is the single most popular style of Chi-Gung found throughout the world today (Reid 1998). Tai Chi constitutes a low impact, low to moderate intensity exercise, incorporating elements of relaxation, flexibility, balance and strength, in a series of continuous breath coordinated movements (Edwards, Hlongwane & Thwala, 2006:9). Exercise features include continuous shifting of weight on left and right feet, with bending and flexion of knees, straight back and neck, trunk rotation and asymmetrical diagonal arm and leg movements, mostly in a semi-squat position (Edwards et al, 2006:9). The exercise intensity is variable and can be adjusted by the height of the postures, duration of the practice session and training style.

It is suitable for all persons of all ages and fitness levels, and can be performed individually or in groups in any setting (Taylor-Piliae & Froelicher, 2004). Tai Chi has two components, physical and cognitive. The physical load of practicing Tai Chi according to Zhuo and associates (1984) is similar to walking at a speed of 6 km/hr; the cognitive activity can be represented by Tai Chi meditation, during which exercisers sit quietly and imagine their performance of Tai Chi. The concept of '*chi*' has various

connotations. It refers to the essential energy of the universe, which manifests in polarity (yin and yang), the five elements; water, earth, fire, metal and wood and the vital, life-force in human beings, '*Chi*' therefore refers to the most fundamental essence of life, nuclear, physical, chemical, electrical, emotional, mental, social and spiritual, to which we have direct, phenomenological access through intra and interpersonal experiences and environmental relationships.

## **1.6 Organization of the study**

### **1.6.1 Chapter 1**

This chapter places the study in context and provides a motivation for the research together with the aims, hypotheses and organization of the study.

### **1.6.2 Chapter 2**

An intensive study of literature around street children, Tai Chi and psychological well-being will be undertaken to review the extent of research already covered by other researchers in this field of study. Identified gaps in the literature will also be highlighted so that the present research can attempt to address some of those issues.

### **1.6.3 Chapter 3**

In this chapter the research design is presented with the supporting theoretical framework on quasi-experimental design, appreciative inquiry and thematic content analysis.

### **1.6.4 Chapter 4**

This chapter provides a detailed analysis of the data obtained. The data will be analysed both quantitatively and qualitatively.

### **1.6.5 Chapter 5**

The findings and recommendations based on the analysis of the data are presented.

## **1.7 RESUME**

This chapter has contextualized the study to be undertaken. The motivation and purpose of this study has also been described together with a clear layout of the structure of the study. The following chapter will be utilized to review the literature on street youth phenomenon, Tai Chi and psychological well-being.

## **CHAPTER 2: LITERATURE OVERVIEW**

### **2.1 Introduction**

This chapter examines the literature on the street child phenomenon, Tai Chi and psychological well-being. It explores the street child phenomenon locally and internationally. General defining characteristics of street youths, how they are perceived, as well as how they function on the streets for their survival are explored. The beneficial effects of Tai Chi on psychological well-being are investigated. Literature on the theoretical models of psychological well-being is reviewed.

### **2.2 The street child phenomenon**

Recent years have indicated an alarming increase in the number of street youths around the world, especially in poor and developing countries such as is evident in Thailand, India, Brazil and here in South Africa (Tudoric-Ghemo, 2005: 1). It is believed that in order to reduce the number of street youths around the world, issues relating to the political and socio-economic status of a country needs to be addressed.

This has been underscored by Maphatane (1994) who contextualized the phenomenon of street children within a cause effect relationship. He asserts that if a community is vulnerable to unemployment, lack of social welfare resources and education there tends to be a lack of neighbourliness, friendliness, caring, reciprocity and support towards one another. If this is combined by a community who has a low socio-economic status, then

the likelihood of youths moving towards life on the street for their own survival is increased (Maphatane, 1994).

Panicker (1993) has pointed out that many of the youth in South Africa are basically rootless, mostly because they exist without resources, homes, education and guidance, or care and affection. They are often brutalized by police, older street youths or gang members and are often exposed to drug dealers and pimps. Collectively they are exploited by all levels of society (Panicker, 1993). The more these youths are exposed to street life, the more they are assimilated into the street culture, and therefore the greater their chances of staying on the street exists (Maphatane, 1994). According to Schimmel (2006: 211) in situations of poverty, neglect, abuse, and desperation, children run away from home and seek a better life on the street. It is a normal human reaction to escape pain and suffering and to seek freedom and safety.

Reporting on the accurate number of youths on the street is very difficult due to the lack of reliable data. Some reasons for the lack of dependable statistics may be linked to the fact that constructionists and post-modern discourses are challenging current definitions of what exactly constitutes a street child. The lack of consensus in definition amongst health workers and professionals, results in many youths on the street being overlooked, thereby contributing to an underestimation of these figures. In defining street children, UNICEF classifies them into two categories: street working and street living. Most children that are commonly referred to as street children in the developing world actually live at home but spend much of the day working in the streets. Street

living children are those whose primary home is the street and they live away from their parents without adult supervision and care.

Most children move to the street in search of the realization of basic needs and not merely as an escape from the monotony of home life or the desire to express their independence by leaving friends and family (Schimmel, 2006:1). Running away from home is an act of resistance and an expression of absolute frustration with life circumstances. It is the strongest possible response to poverty and abuse that children in circumstances of deprivation and vulnerability can exercise.

Their home life and street life are both defined by two important forms of deprivation of basic needs that are essential for healthy child development and socialization: a sound family life defined by supportive parents and close relationships, and adequate social provisions of food, shelter, clothing and quality schooling. Typically, neither in the homes where they previously lived, nor on the streets where they have come to establish a new life are these needs met. Living on the streets on a full-time basis endangers the lives of children and is developmentally incapacitating; street life fosters feelings of disempowerment and social disconnection and results in psychological distress and emotional instability. Street children experience high levels of stress and of physical and sexual abuse and psychological trauma as a result of living on the street, and they suffer from psychological pathologies such as depression and suicidal behaviour at substantially higher rates than children who live at home or in alternative permanent accommodation (Schimmel, 2006). Abraham Maslow's (1954) humanistic psychology

conception of the hierarchy of human needs shows how street life actively frustrates and often makes it impossible for the realization of basic human needs.

Although residential care is not an ideal environment for children, it is legally and morally obligatory upon governments to place street children in residential care to ensure their safety and that their basic rights and needs are met. At times this may require the local department of social services to exercise force in the best interests of the child and remove him from the street, even against his own will. When done with sensitivity to the child and in accordance with the human rights guarantees delineated in the UN Convention on the Rights of the Child (CRC), such action is of urgent importance because the longer a child lives on the street, the greater his tendency to exhibit symptoms of psychopathology.

The human right to which the CRC gives priority is that of the survival of the child. The provisions of his basic food, shelter and healthcare needs as guaranteed in the CRC cannot be assured while the child is on the street. The CRC states in Article 27 that “State parties need to recognize the right of every child to a standard of living adequate for the child’s physical, mental, spiritual, moral and social development”. None of these developmental goals can be realized while children live on the street. A safe, stable, and nurturing environment where their developmental needs can be met is a prerequisite for the realization of these core developmental goals.

Street children typically face danger on a daily basis and their lives are threatened in a myriad of ways. High rates of disease and infection amongst street children are indicative of the health hazards of street life. This encourages street children to lose trust in them, in other people and in God. Their self-esteem is challenged by experiences of humiliation, guilt and helplessness. Living in a constant state of 'survival mode' in which they must be preoccupied with finding food, shelter and clothing takes a severe toll on their psychological well-being (Schimmel, 2006). The struggle for dominance through violence becomes the child's main mode of living on the street and contributes to his psychological distress.

*Heri Bongkok, a street child for well over ten years, and now a street adult, sums up life on the street in two words: Struggle and oppression. The struggle is to fill your belly everyday and the oppression is to dominate younger and less powerful street children (Schimmel, 2006).*

Statistics reported in 1983 estimated that there were approximately 80-150 million youths around the world who make an income from street life (Schurink, 1993). In another report in 1986, the UN estimated that there were between 30-170 million street youths worldwide (Ress & Wik-Thorsell, 1996; Scanlon, Tomkins, Lynch & Scanlon, 1998). Another report by the United Nations (UN) estimated that 15% of youths around the world are exposed to 'especially difficult circumstances', of which about 50 million are vulnerable to exploitative conditions (Schurink, 1993). In 1997, UNICEF estimated that there are about 80 million youths living on the streets worldwide. From this figure it is said that approximately 20 million street youths are found in Asia, 10 million in



Africa and the Middle East and about 40 million are said to be found in Latin America (Aptekar, 1997).

Be that as it may, whatever the reported figures are, and whatever the discrepancies may be, some professionals believe that these figures are still conservative and the number of youths living on our streets is expected to increase as poverty, population growth, breakdown in the family structure and a general disruption in the social infrastructure continues (Maree, 1991). Despite the difficulties experienced, organizations are now drawing attention to the phenomenon of street youths. The following section gives an indication of the nature and extent of street youths both internationally and locally in order to gain a clearer picture of this phenomenon.

### **2.2.1 Russia**

In a report submitted by Balachova (2002), it was estimated that there are between 1-4 million street youths in Russia. About 50 000 of these youths run away from their homes every year. In 2002, the state prosecutor of Russia, Vladimir Ustenov reported during parliamentary hearings that during that year, approximately 300 000 youths were found living in railway stations, at airports and in the cellars of buildings (Balachova, 2002).

### **2.2.2 Latvia**

Latvia reported a figure of 154 934 street youths in 2000. This figure is 29% of all youths in Latvia aged between 0-17 years of age, and is expected to increase as poverty and dysfunctional family systems are affected by the political and socio-economic problems of the country (Lukasinska, 2002).

### **2.2.3 Latin America**

Latin America includes countries such as Argentina, Bolivia, Chile, Peru, Uruguay, Brazil, Costa Rica, Jamaica, the Dominican Republic, Guatemala, Ecuador, Mexico and El Salvador. Brazil is deemed to have the largest population of street youths in Latin America (Anderson, 1997). It is reported that there are now more than 160 million people who live below the poverty line, with 40 million of these being street youths (Connolly, 1990).

These Latin American countries also estimate the age of street youths to range from between eight and seventeen years, with the average child being about nine years old (Anderson, 1997). Seventy five percent of the youths are said to have family links, but the remaining 25% are considered to be actually homeless (Tudoric-Ghemo, 2005).

### **2.2.4 Colombia**

In Colombia street youths are judged with contempt and are often viewed as nuisances who should be put to death. In 1994, statistics published by Colombia's National

Bureau DANE, found that 2190 street youths were murdered in 1993. It was also reported that the torture of these children in this country appears to be the norm, often falling under a banner of so-called 'social cleansing' (Human Rights Watch, 1994). Colombia is unstable politically and economically which is strongly linked to the prevalence of uprisings, drug cartels, overpopulation and poverty, largely contributing to the existence of street youths in this country (Le Roux, & Smith, 1998a).

### **2.2.5 Guatemala**

Human Rights Watch (HRW) (1997) reported that there are between 1500 to 5000 street youths in Guatemala, 65% of whom are between the ages of 10 and 17 years, with 3% being below the age of 10 years. Approximately 90% of these youths are addicted to chemical inhalants, begging, stealing and prostitution are the main sources of income. The rate of AIDS and other sexually transmitted diseases and infections is also reported to be on the increase. In a study conducted in 1991 on 143 Guatemalan street youths it was found that many of the youths had left home because of sexual abuse. It was also found that all the youths in the sample abused drugs daily (Tudoric-Ghemo, 2005).

### **2.2.6 Bulgaria**

In Bulgaria, the unemployment rate is estimated to be 70% on average, and as high as 90% in particular neighbourhoods. It is thought that the depressed socio-economic status of this country coupled with inadequacies in the Bulgarian educational system is linked to youths living on the streets. A study done in 1996 by the HRW found that

many street youths come from large families and report leaving home because of parental unemployment, family relationship problems, single-headed households, lack of parenting supervision or care at home (HRW, 1996). HRW also reported that, once on the street, youths were often subjected to abuse by the authorities. Many of these youths had reported being thrown in prison, sexually abused by police, forbidden food or not given access to toilet facilities for lengthy periods of time. These youths also reported often being beaten with electric shock batons, chains, clubs or metal rods, or their heads were frequently dunked in water, while applying electric shocks to their feet (a practice referred to as 'falaka') (HRW, 1996).

#### **2.2.7 India**

In 1996, HRW reported that there were at least eighteen million street youths in urban India. India is thought to have the largest population of street youths in the world, with 49% of India's rural population living at or below the poverty line. Of this 38% of youths live on the street with this figure expected to increase as the country's population escalates. In 2000, the population was reported to be approximately 261 million, and the United Nations Development Programme (UNDP) has projected that this figure will increase to approximately 1,8 billion by the year 2043 (HRW, 1996).

### **2.2.8 Kenya**

In September and October of 1996, the HRW did a fact-finding mission on the number of street youths in Kenya. It was reported that approximately 40 000 youths are living on the street in Kenya, over half of which are in the city centre of Nairobi itself. The increase of youths living on the street is also believed to be related to the complex socio-economic status of the country, including factors such as rapid urbanization and the general breakdown of traditional support structures of the African extended family. The HRW report also highlighted the impact of single-parent households, the lack of funds for resources and education, the displacement of large numbers of people due to urban slum clearance programs, and the internal displacement of approximately 300 000 people due to the recent 'ethnic' violence (HRW, 1997).

### **2.2.9 Rwanda**

It is believed that the current political, social and cultural challenges of Rwanda recovering from genocide and internal conflict are the largest contributing factor to the existence of Rwandan street youths (Veale & Dona, 2003). In April and July 1994, between 800 000 and one million Tutsis and Hutus were killed, which resulted in almost two million people leaving Rwanda as refugees at that time. By August 1996, the Ministry of Social Affairs (MINISTRASO) estimated that there were about 2 670 street youths but this figure was increased in 1999 – only three years later – to about 6 000 street youths (UN Common Country Assessment, 1999).

### **2.2.10 Swaziland**

In a report by Aptekar (1997) on street youths in Swaziland, it was found that compared to most African countries, the number of street youths there is small. His study revealed that there was no difference between families who lived in rural Swaziland or in urban areas and family disintegration, educational levels, or population density often associated with urban migration was evident in both areas. This is interesting, because he concluded that the process of modernization is not solely responsible for street youths in Swaziland but that this may be linked to the political and social history of the country as well (Aptekar, 1997). Compromise had been largely emphasized in their daily culture and was evident in harmonious marriages, gender roles, power balances in the family, education and discipline of youths, dissolution of marriages and death. Aptekar (1997) concludes that authoritarian political discourse and the related social and familial structure are large contributory factors to the street phenomenon in Swaziland.

### **2.2.11 Zimbabwe**

While it is reported that it is difficult to establish the exact number of street youths in Zimbabwe, the Department of Social Welfare in 2000 estimated that there were about 5000 street youths in Harare at that time, and that these numbers are expected to increase along with political strife, unemployment and poverty (Rurevo & Bourdillon, 2003).

### **2.2.12 South Africa**

It is only since the 1970s and 1980s that focus has been directed towards street youths in South Africa. While it is difficult to ascertain the true figure of street youths today, various researchers in the 1980s to early 1990s have estimated that it is anything between 6 276 and 9 390 respectively with ages ranging between seven and sixteen years of age (Richter, 1988; Swart, 1990; Maree, 1991). However, in 1996 this figure was estimated to be at least 15 000 youths (Levenstein, 1996). This in essence means that within a six-year period this figure has increased by 59.7% in this country. As with many African countries, South Africa is also considered to be especially vulnerable to fragile political and socio-economic problems. Therefore, the existence of street youths is thought to be closely linked to the fact that South Africa is a developing Third World country that is still in a transitional process and involves factors such as increasing urbanization, unemployment, poverty, inadequate housing and family disintegration (Schurink, 1993).

In summary, this section has described the nature and extent of the street child phenomenon around the world and locally. It also highlighted the need for alternative interventions needed locally and worldwide to address this growing phenomenon.

### **2.3 Management of street children locally and internationally**

There are three possible strategies for working with street children, namely containment, cure and prevention (Mathye, 1993). Containment usually takes place in closed institutions where correctional measures are applied. The cure approach involves weaning children away from street life, gradually reintroducing them to education and regular work patterns. This seems to be successful, especially when working on an outreach or street educator basis. Prevention or stopping children from opting for life on the street is the most difficult and least explored alternative (Mathye, 1993). The present study attempts to address the cure and prevention strategies proposed by Mathye (1993). The following are some of the observations with regard to the present management of street children:

- Conventional child care facilities also contribute to the street child problem since the prerequisites for securing service from them is adherence to prescribed behaviour and self disclosure.
- Street children have learnt to provide for themselves and survive against all the hardships of street life. Their resilience contributes to an advanced sense of independence.



- Street child programmes which have been found to retain and assist street children most effectively are non-government initiatives that have enlisted government cooperation.

Guidelines have been derived from the observations and experiences of people involved with street children over varying periods of time. There are quite a number of guidelines, but those referred to most often are the following (Mathye, 1993):

- Programmes for street children should be founded on respect for children, on the development of their self-esteem and on faith in their potential.
- Street children need a flexible and less restrictive lifestyle.
- Since some children respond well to direct and authoritarian approaches and others resent this, there should be a variety of programmes. The Tai Chi programme that was offered by the Ethekewini Department of Health could also appeal to the street children that prefer exercise of moderate intensity.
- Because street children generally come from displaced or disorganized families, every effort should be made to provide good role models during intervention.

- Intervention should not only benefit the child as an individual but also ensure growth at a community level, by family unification and appropriate rehabilitation programmes, where feasible.

In South Africa efforts have only been made since the 1980's to help street children in a less formal way (Mathye, 1993). Tremendous strides have now been made in terms of services available to street children, public awareness of the phenomenon and research. Management of street children have been effected by admitting them in places of safety and schools of industry and utilizing non-governmental initiatives such as shelters, skills training and education programmes (Bilankulu, 2000). These initiatives have encountered different problems, largely due to the nature of the street child phenomenon and legislation with regard to the street child. Programmes for street children form part of the social process aimed at improving the environment and benefiting society, and while there are a wide variety of existing programmes for street children in South Africa, much still needs to be accomplished (Schurink, 1993).

Programmes for street children can be divided into micro and macro level programmes. Macro programmes have focused on the community at large and are involved with issues such as community awareness about their attitudes towards street children. Micro programmes have focused on diagnosing and treating street children on an individual basis. The following types of micro programmes can be identified:

- Contact and outreach programmes

A number of non-governmental organizations that offer services to street children in South Africa have an outreach programme where a street educator goes out to those places frequented by street children and tries to become acquainted with them.

- Immediate care programmes

The basic needs of street children are food, clothing and a safe shelter. They also need access to a medical facility to treat any medical condition that may affect them. The environment should be relaxed to promote a climate conducive for counseling.

- Intake and assessment programmes

Although most children are hardly stable during the first few days in a programme, the people helping them should try and observe their social and interpersonal functioning in order to know what kind of behaviour to expect from them and how to deal with it.

- Intervention programmes

There is a need for new services and an adaptation/modification of existing services to best serve the interests of street children. The Tai Chi programme could be seen as an alternative intervention model for the problems faced by street children.

- Macro programmes

The types of macro programmes include prevention, community awareness and participation and legislation and policy. So far there have been no known national attempts at prevention (Mathye, 1993). Prevention at local level also seems to have been unsuccessful overall (Schurink, 1993). A multidisciplinary approach needs to be adopted to increase awareness amongst communities of origin in an effort to prevent the street child phenomenon. An ideal strategy for the treatment and rehabilitation of street children has to start with legislation that recognizes private/voluntary initiative that promotes the psychological well-being of street children.

While there has been a response by government, welfare institutions and non-governmental organizations to alleviate the problems that street children face, much still needs to be accomplished to curb this phenomenon.

Most international countries seem to have similar trends in programme strategies and interventions for the street child phenomenon. They include the following programmes: outreach/street education, establishment of crisis intervention centres and temporary shelters, community organization and mobilization, advocacy and networking. Sometimes the best way to solve a specific problem is to initiate a broad intervention (WHO, 2000).

Interventions can only be effective if they are integrated within and complement the broader strategies to improve the overall health and well-being of street children and their communities (WHO, 2000). The Tai Chi program in this study could provide an adjunct in complementing the broader strategies for the improvement of overall health and well-being in street children.

This section provided insight into the management of the street child locally and internationally. It presented an overview of intervention programmes available to street children in South Africa and internationally.

## **2.4 Developmental implications for street children in South Africa**

Existing research on street children in South Africa is not extensive (Swart-Kruger & Donald, 1994). Part of the reason for this is the fluid, unpredictable, and evasive life-style of street children which creates problems for reliable and sustained data collection (Cockburn, 1988; Swart-Kruger & Donald, 1994). Emotionally, undoubtedly the

greatest risk to which most street children are exposed is the loss or lack of an adequate relationship with an adult care-giver.

In her study with street children in Johannesburg, South Africa, Richter (1988) found higher rates of enuresis, regressive behaviours, anxiety and depression amongst them. Although the role of the street group in terms of physical survival is relatively clear, the role it may have in terms of developmentally significant emotional support is not certain. The street child's substitute 'family' helps to provide survival needs, protection, companionship, and support. The relationships within a street group are erratic, temporary, and are constituted at a different emotional level to those of adults and children within a family. Ryff (1989) mentions positive relations with others as an important facet of psychological well-being which suggests that when street children lack warm, trusting relationships this contributes negatively to their psychological well-being.

#### **2.4.1 Physical development of street children**

The most important physical developmental risks and sources of vulnerability to which street children may be exposed relate to shelter, safety, nutrition and specific health risks associated with untreated illnesses and injuries, glue sniffing and sexual activities (Swart-Kruger & Donald, 1994). Physical exposure to cold and damp due to lack of shelter and insufficient protective clothing, vulnerability to pedestrian traffic accidents

and exposure to violence and physical abuse by gangs, criminal elements, other adult street dwellers and the police themselves have all been identified as common physical risks (Scharf et al., 1986; Swart, 1988; 1990; Gebers, 1990 & Cockburn, 1991). Nutritional needs among them are insufficiently met. Health risks in street children are related to the lack of treatment of illnesses and injuries, effects of intoxication and the high risk of contracting sexually transmitted diseases (AIDS being of special concern).

The counter balance of some of these risks is evidenced in adaptive strategies which relate to ingenuity in income generation and the securing of food and shelter under trying circumstances. Although this is opportunistic behaviour it is generally successful as a survival strategy and the street children often claim that they are better off under these conditions than they were at home (Cockburn, 1988; Keen, 1990; Richter, 1988; Swart-Kruger & Donald, 1994). They use the same ingenuity to finding and retaining sleeping places that provide at least some degree of shelter and safety.

Although groups of street children have been clearly distinguished from gangs in their dynamics and social structure, the role of the group is significant in terms of physical survival with regard to resource sharing, information sharing and at times group protection against violence, robbery or police harassment. Since street children strive to keep their anonymity intact, they are afraid to find themselves in the hands of the authorities and most illnesses and injuries are kept to themselves and group members who are the only source of support and care during crises (Richter, 1990; Swart, 1990).

#### **2.4.2 Emotional development of street children**

Street children report that their homes of origin were punitive, rejecting, hostile and lacking adult emotional support. Cockburn (1991) has reported extremely high levels of physical (50%) and sexual (17%) abuse in the families of origin of a sample of street children. In a different sample Giles (1988) has reported on similar high levels of assault within families (140%). He also recorded that 95% of the mothers in this sample were unmarried and most lived in temporarily constituted relationships, that 72% were teenagers when their first child was born and that alcohol abuse was almost universal in these families. These latter three factors have been commonly observed in other samples (Cockburn, 1991; Keen, 1990; Richter, 1991) and it appears likely that the presence of these factors creates a context of high risk for both abuse and the lack of an adequate care-giver relationship.

In one of her studies, Richter (1988) found higher than normal rates of enuresis, regressive behaviours, anxiety and depression in a sample of street children in Johannesburg. From the perspective of the DSM IV-R, Giles (1988) observed the behaviour of street children as non-aggressive under socialized conduct disorder, but depression, anxiety and withdrawn behaviour is also common. It has been found that unmet affection and dependency needs create acute stress in street children. The goal of education has been found to be problematic until primary emotional needs are met (Swart, 1990).



In Richter's (1988) sample it was found that street children who retained some link with their families showed more signs of emotional disturbance than those who had broken off completely. The question of emotional vulnerability relates to the development of autonomy. The notion of freedom is reported by street children as the highest value in their street existence. The exercising of freedom may implicate the development of a sense of autonomy and self-reliance that may be positive in the overall emotional development of street children.

Korsgaard (1993) emphasizes that freedom cannot be attained unless an individual has been raised in an environment that has provided him with the minimum psycho-social support needed to develop the capacity to exercise individual freedom successfully. Street children do not enjoy the self-respect that is considered essential for the exercise of freedom because of the stigma from which they suffer and their social and economic conditions of poverty and helplessness. Nor do they have educational opportunities that would enable them to recognize the options available to them in determining their future. As such they cannot exercise choice in any meaningful sense of the word.

While it is likely that the initial choice to run away from home to the street may indicate psychological resilience, this can be seen as characteristic of social deviance and reactions to life-threatening situations. The decision to remain on the street and not to seek alternative accommodation will likely reflect a lack of information on the part of the child, a lack of self-confidence and a lack of imagination – in the sense of being able

to imagine and actively desire a life away from the street in a more stable environment. Freedom can only be exercised in situations in which individuals have the capability to reason and act autonomously in an informed manner, without constraints such as drugs/inhalants, coercion and intimidation and their own limited cognitive and emotional development that constrict their understanding of the choices before them.

Korsgaard (1993) explains that freedom can be difficult to realize for individuals living in conditions of social and economic vulnerability because they are likely to have an 'impaired capacity for formulating and pursuing a conception of the good'. Because street children's basic nutrition, shelter and healthcare needs are not met, they are forced as a matter of survival into exploitative relationships that impinge upon their freedom.

#### **2.4.3 Social development of street children**

In terms of social identity formation, street children are vulnerable to the negative attribution of 'social reject'. Street children are socially marginalized and rejected by almost all sections of the community. This is not only the rejection by family and the home community, it also manifests in the form of police harassment, high frequency of physical and sexual molestation and the inadequacy of care provided by state welfare structures. Street children are also harassed by other more powerful street dwellers, including homeless adults, prostitutes and gangs (Gebbers, 1990; Keen, 1990). Street

children are commonly characterized and stereotyped as being criminals and morally depraved. Under these conditions the development of any positive sense of social identity and self-worth is put at risk and it is not surprising that self-esteem among street children is commonly reported to be low and self-deprecatory (Richter, 1991).

Superficially, social development in terms of peer relationships would appear to be non-problematic. Although this may be true at one level, it is also true that physical survival generally takes precedence over other needs and relationships. Thus the composition of street groups and friendships is consistently reported as fluid, erratic and subject to the pragmatic demands of individual survival (Giles, 1988; Swart-Kruger & Donald, 1994). This may impact on the establishment of more permanent peer relationships and the social benefits that flow from these.

Although there is a cluster of powerful negative attributions directed at street children, evidence indicates that peer morality – a sense of altruism and mutuality – is strong (Swart, 1988). Most street children identify with somewhat idealized but nevertheless stable and ‘conventional working class expectations’ (Scharf, Powell & Thomas, 1986) and do not see themselves or wish to continue, as inveterate street dwellers (Keen, 1990; Richter, 1991). Built out of such social experiences, life aspirations and the sense of being a ‘survivor’ under the most difficult of circumstances, a base may yet be created for an effective adult social identity.

#### **2.4.4 Cognitive and educational development**

Allison and Jerrom (1984) have shown that the cognitive performance of children who chronically inhale solvent fumes is significantly affected. In particular, attention, concentration, memory and visuo-spatial capabilities are affected. Most street children would be likely to experience difficulties on re-entry to school for tasks requiring spatial orientation and verbal comprehension (Jansen, Richter, Griesel, & Joubert, 1990).

Children that have not acquired the basic educational skills – related especially to literacy and numeracy at a stage in their development when this should normally occur are at particular risk for further educational frustration and failure on their re-integration into the education system (Adelman, 1971). This is particularly true under South African conditions where the general inadequacy of educational structures and practices and lack of support services for the majority make such re-integration an insurmountable hurdle (Donald, 1993). Most street children are at a level of functional literacy (Gebers, 1990; Richter, 1988). With most of the negative school experiences behind them, the problems of formal educational re-integration and development are acute (Scharf et al., 1986; Cockburn, 1991). It is for reasons such as these that non-formal educational intervention programmes are seen to be more effective than attempts to re-integrate street children into the formal schooling system (Cockburn, 1988; Swart 1988).

Aptekar (1997) has argued that street life challenges children to develop skills that will be useful to the urban economy where few wage earning opportunities are available. It has been demonstrated that living or earning on the street develops useful, if non-standard numerical analytical skills (Saxe, 1988), and computational abilities (Richter, 1988; Swart, 1990). Richter (1988) also demonstrated in her sample of street children that despite other scholastic shortcomings, the majority had developed more than adequate general problem solving skills. On the other hand, this type of argument has been countered by Glauser (Espinola, Glauser, Ortiz & Ortiz de Carrizosa, 1987) who maintains that the skills learned are effective only for survival on the street and the independence learnt has been forced rather than chosen and is fragile and not easily transferable to other situations.

In summary, there is considerable evidence of risk and vulnerability in street children across a number of key developmental dimensions which have been discussed above.

## **2.5 Promoting health and psychological well-being through physical activity**

In 1946, the World Health Organization (WHO) defined health not merely in terms of the absence of disease, but also as a state of complete physical, mental, and social well-being (WHO, 1946). This positive definition created the impetus for the paradigm shift in health care from a pathogenically orientated clinical/medical model to a more public health approach with an emphasis on both prevention of illness and promotion of health

and well-being (Wissing & van Eeden, 2002:32). Although illness and well-being are typically conceptualized as existing on a continuum, well-being is best considered as an independent dimension, distinct from illness. From the public health perspective, these dimensions are best thought of as reflecting the operation of two different systems concerned with prevention and promotion respectively.

Health and well-being interventions typically involve three strategies: disease and illness treatment, disease and illness prevention and health and well-being promotion. Following the relative success of modern public health interventions in treating and preventing disease and illness, especially in the developed countries, recent years have seen the proliferation of health clubs concerned with the promotion of health and well-being (Corbin & Lindsey, 1997). The use of exercise as a medium for health promotion is based upon international research evidence for the public and mental health benefits of physical activity, exercise and fitness interventions (Edwards, 2002; 2003; Fox, 2000; Hayes & Ross, 1986; Morehouse & Gross, 1977; Morris & Summers, 1995; Scully, 1998; Weinberg & Gould, 1999).

Psychological well-being refers to a particular theoretical construct, measuring the integration of various psychological components of well-being (Edwards, 2002a; 2003). There is now a worldwide acceptance among medical authorities that physical activity is an important element of healthy living (WHO, 1995). Research has demonstrated that psychological well-being is promoted through regular exercise and sport, which occurs

twenty to thirty minutes a day, at least three times a week (Biddle, Fox & Boutcher, 2000:7). Similar improvements in psychological well-being have been found with swimming, yoga, and fencing (Berger & Owen, 1998), rugby (Maynard & Howe, 1987), karate, weight-training and jogging (McGowan, Pierce & Jordan, 1991). In addition Krawczinski and Olszewski (2002) were able to demonstrate the longitudinal effectiveness of a physical activity programme on the psychological well-being of persons over sixty years of age. Psychological explanations of why exercise enhances psychological well-being include the following: enhanced feelings of self-control, improved self-concept, self-efficacy and more positive social interactions (Scully et al., 1998).

Physical activity has been found to increase academic performance, assertiveness, confidence, emotional stability, intellectual functioning, internal locus of control, memory, perception, positive body image, self-control, sexual satisfaction, well-being and work efficacy and decreases: absenteeism at work, alcohol abuse, anger, confusion, depression, headaches, hostility, phobias, psychotic behaviour, tension, type A behaviour and work errors (Weinberg & Gould, 1999).

Physical exercise can be viewed as a subset of physical activities that are planned to improve health and psychological wellness. Exercise of moderate intensity done regularly, can also improve psychological well-being. Evidence is strongest for activity which lasts between 40 and 60 minutes. Recreational exercise and activity are likely to

improve socio-emotional functioning, whereas resistance exercise enhances one's self-perception and has rapid effects on how the body feels and functions.

Research indicates that a large number of youth and adolescents are not physically active and there is a youth fitness crisis prevalent in society (Robbins, Powers, & Burgess, 1997). Psychological explanations of why physical exercises enhance psychological well-being include enhanced feelings of control, improved self-concept, self-esteem, self-efficacy and more positive social interactions. The quantitative research studies for the benefits of exercise interventions in health promotion programmes are internationally established (Morris & Summers, 1995; Weinberg & Gould, 1999; Edwards, 2001). Regular, moderate intensity, exercise interventions involving non-competitive activity, rhythmic abdominal breathing of 20 to 30 minutes duration in comfortable, predictable contexts as with Tai Chi seem meaningful if the intensity and duration of the intervention are tailored to suit the particular exercisers (Berger, 1994; 2001).

Appropriate exercise interventions improve general health, quality of life, subjective well-being, self-esteem and self perception (Fox, 2000). Sinyor, Schwartz, Peronnet, Brisson and Seraganian (1983) were able to demonstrate that persons trained aerobically were able to recover faster from experimentally induced stress than untrained persons on physiological, biochemical, and psychological measures. Hayes and Ross (1986) in their study with 401 participants found that exercise and good



physical health improved psychological well-being (as assessed in terms of absence of symptoms of depression and anxiety).

Roth and Holmes (1985; 1987) have indicated that physical fitness moderates the stress illness relationship and increases fitness through aerobic training, and decreases the experience of stressful life events. Physical activity helps individuals to feel better through improvement in mood, reduced anxiety and enhanced self-perception. Physical activity can improve functioning in individuals through alleviation of stress and improved sleep.

There is evidence that physical activity is important for children's psychological well-being (Mutrie & Parfitt, 1998). Children with lower physical activity levels have more symptoms of psychological distress than more active children. A positive relationship between physical activity and psychological well-being has been identified, independent of social class and health status (Hendry, Schucksmith & Cross, 1989; Steptoe & Butler, 1996). Current evidence indicates that physical activity interventions can have a generally positive impact on the mental health of young people. Sport and exercise can provide an important arena for youngsters to be successful and this is experienced through positive effects on self-esteem, self-perceptions of competence and body image (Fox, 2000; Gruber, 1986).

Similar to Erikson's (1959) theoretical perspective, each psychological well-being dimension can be viewed as articulating a form of life challenge; self-acceptance of personal strengths and limitations, developing and maintaining positive relations with others, mastering the environment so as to meet needs and desires, seeking autonomy through self-determination and personal authority, finding personal meaning through purpose in life and optimizing unique abilities and talents through personal growth.

This section highlighted the relationship between physical activity, health promotion and psychological well-being with supporting empirical evidence. Tai Chi may be a form of physical activity that could be used as an intervention to enhance the psychological well-being of street children.

### **2.5.1 Chi-Gung and Tai Chi as forms of health promoting physical activity**

#### **2.5.1.1 Chi-Gung (Qigong)**

According to ancient literature, the term Qigong (Chi-Gung) first appeared in Jin Ming Zong Jiao Lu, by the Taoist priest Wun Xu in the Dong Jin dynasty but it was not widely adopted throughout the thousand years of dynasty changes until the Qin dynasty and recently in health and medicine books in the Republic of China (Shinnick, 2006). It has since been used in Chinese medical clinics and generally practiced. Its development was diverse and expressed as Chan Ding in Buddhist deep mind meditation concentration, Zuo Wang in the Confucius tradition, Dao Yin in medical breathing

exercise, and Nei Gong in the martial arts internal techniques (Shinnick, 2006). According to Gallagher (2003), Chi-Gung is a system of yoga encompassing physical, mental and spiritual practice. All mean inner cultivation. At its core Chi-Gung is the manipulation of the regulation of the body, breath and mind into an integrative whole, with the breath as the key regulator practice to make this happen.

Chi-Gung is an integral and essential component in the ancient Taoist system of healthcare, life extension and spiritual self-cultivation (Reid, 1998). In order to gain full benefit from Chi-Gung, it must always be properly practiced within the overall context of the whole yang-sheng system of cultivating life. Of all the various yang-sheng methods of cultivating health and longevity, Chi-Gung is the swiftest and most effective way to nurture, balance and manage the basic energies of life (Reid, 1998). As well as working on a physical level in the body, Chi-Gung enhances cerebral functions and awakens latent talents and abilities that might otherwise lie dormant forever (Gallagher, 2003). It also pacifies and balances moods, and stimulates the cultivation of the highest spiritual values by opening the mind to the universal wisdom of enlightened awareness (Reid, 1998).

Of importance in Chi-Gung practice is the cultivation of spiritual virtues such as wisdom, compassion, patience and tolerance as well as physical strength, health and power. The reason for this is quite clear: besides nurturing the energies required for life on earth and promoting longevity of the physical body, Chi-Gung also opens a gate to

the infinitely powerful forces of the universe and establishes a direct link between the personal energy field of the individual practitioner and the universal energy fields of the cosmos and all creation (Reid, 1998; Gallagher, 2003). Chi-Gung practice also releases unnecessary tension in the muscular system (Gallagher, 2003).

Chi-Gung is an ancient Chinese system of self-cultivation developed specifically as a means by which each individual may take full responsibility for protecting health, promoting vitality and prolonging life, while cultivating spiritual awareness and insight (Reid, 1998: 5). In today's highly competitive, stressful world, Chi-Gung's versatile utility as a personal tool – for promoting productivity, preventing disease, balancing emotions and calming the mind – has greater practical potential for the individual, and for society. '*Chi*' means 'breath' and 'air', and by extending its meaning it also denotes 'energy' and 'vitality'. Gung is a general term meaning 'work' and is used in reference to any skill or technique which requires time and effort, patience and practice, to perfect. Hence the term Chi-Gung may be translated as 'breathing exercise' as well as 'energy work'. By encouraging diaphragmatic breathing, Chi-Gung may reduce sympathetic nervous system stimulation which results in a calming effect, both mentally and physically (Gallagher, 2003)

The importance of soft flowing movement was also noted by Confucius. In the classical text called Spring and Autumn Annals, the sage says:

*Flowing water never stagnates, and the hinges of an active door never rust. This is due to movement. The same principle applies to essence and energy. If the body does not move, essence does not flow. When essence does not flow, energy does not flow ( Reid, 1998: 8).*

Despite the diversity of all forms of Chi-Gung, they all share certain fundamental points (Shinnick, 2006). All of them work with energy, striving to achieve balance between Yin and Yang polarity and functional harmony among the Five Elemental Energies (wood, fire, earth, metal and water) that control the internal organs. Chi-Gung provides a mechanism through which one can guide and balance the Five Elemental Energies that compose the human system by utilizing the control and creative cycles to restore normal balance and maintain natural equilibrium among the vital energies that govern the internal organs and regulate their related functions and tissues (Reid, 1998; Gallagher, 2003). There are specific Chi-Gung exercises that are used to influence the energies of each of the vital organ systems through their meridians. While Western medicine recognizes and deals with only two circulatory networks in the human body – the nerves and the blood vessels – Traditional Chinese Medicine includes a third system: the energy network of meridians which it regards as the primary functional network in the human system, the decisive factor in human health, and the system which must be dealt with first and foremost in the treatment of human disease (Reid, 1998). Of all the energy medical practices, Chi-Gung has the most developed theoretical basis and has been subjected to the most extensive research (Sancier, 1991; 1994; 1996; 2000; Wang & Xu, 1991; 1993; Wang, Xu & Qian 1995; Yamamoto, 1997; Kawano, 1996).

Five basic goals may be delineated as the main points of focus in Chi-Gung:

- Preserving health.
- Curing disease.
- Prolonging life.
- Developing physical strength, and martial prowess
- Cultivating spiritual awareness, enlightenment, and liberation from the cycle of corporeal existence (Reid, 1998).

Taoism is the most ancient school of thought in Chi-Gung. The Taoist school of practice believes that the ultimate goal of Chi-Gung is to achieve 'immortality' (cheng-shien). The most distinctive points in the traditional Taoist school of Chi-Gung are:

- The concept of refining the spirit to ever higher levels of awareness by raising energy from the sacral and abdominal centres up to the head is central to Taoist practice. This refining process is a precondition for enlightenment and immortality and takes many years of disciplined practice to achieve.
- Chi-Gung means 'energy work'. According to Taoist's, energy is drawn from many sources- from air through breathing, from food through digestion, from nature and the cosmos in meditation, from the sun and moon and stars, and from partners in sexual yoga. Taoist adepts believe that all forms of energy are drawn into the human system, refined, cultivated and transformed for higher spiritual applications.

- Taoists use 'energy gates' on the body to 'breathe energy' directly into the human system from external sources.
- Chi-Gung uses visualization to amplify the power and promote the flow of energy. Visualization can therefore be used to guide energy into the body from external sources and to circulate it anywhere within the human system.
- The 'interior elixir' is the foundation of physical health and longevity as well as spiritual enlightenment. This elixir is refined from human essence and energy, not from medicinal substances. The purpose of internal alchemy in Taoist Chi-Gung is to produce the internal elixir by transforming the essence of vital bodily fluids and combining it with various other energy resources (Reid, 1998). High-resolution electroencephalography (EEG) and functional magnetic resonance imaging (fMRI) have sought information about the effects of Chi-Gung on the brain and emotions. Differences were found on the effects on the brain during meditation by Chi-Gung and Zen meditation (Kawano, 1996). The effects of emitted '*chi*' have also been extended to cell cultures, growth of plants, seed germination and reduction in tumour size in animals (Sancier, 1991). Through systematic and repeated practice of intention, well-practiced Buddhist lamas have succeeded in training the brain to direct electrical activity away from areas associated with the biochemistry of stress, tension and disturbing emotional or physical states (i.e., the amygdala and right prefrontal cortex) and increase

activity in the area associated with the biochemistry of healthful emotional and physical states (i.e., the left prefrontal cortex) (Sancier & Holman, 2004; Davidson, 1999).

- In addition to still meditation, Taoist Chi-Gung includes a unique form of ‘moving meditation’ used to develop the body, prevent and cure disease, stimulate vital secretions and help prolong life. These involve slow rhythmic movements of the body harmonized with deep abdominal breathing. These exercises were originally derived from the way animals move in nature. They were further refined by the Indian monk Ta Mo, who combined them with pranayama breathing and meditation (Reid, 1998).
- Adepts of Taoist Chi-Gung also practice a form of periodic fasting (Reid, 1998). During the fasting periods, the follower of Chi-Gung only consumes medicinal herbs and ‘*chi*’. The purpose of this abstinence is not only to purify and detoxify the body through fasting, but also to train the body to draw in energy directly from external sources through the body’s energy gates and to produce internal energy from various forms of essence stored within the body by virtue of internal alchemy. During periods of fasting, Chi-Gung is practiced more intensively to stimulate secretions of vital essence and to catalyze its transformation into energy (Reid, 1998).



- Sexual yoga was a distinctive part of Taoist Chi-Gung.
- Taoist Chi-Gung developed a system of total healthcare known as 'the Tao of cultivating life'. Self-applied Chi-Gung has led to significant cost decreases, such as reduction in days unfit for work, hospitalization days, emergency consultation, respiratory tract infections and number of drugs and drug costs in the treatment of asthma (Reuther, 1991).

The Confucian school approached Chi-Gung as a way to balance and purify the mind and control emotions so that people would become better members of society. Confucius believed that many physical diseases of the body are caused by mental and emotional imbalance (Reid, 1998). Chi-Gung contributed to an individual taking his or her rightful place in society by cultivating the virtues of balance and equanimity. Since society was viewed as a microcosm of the macrocosmic order, learning to obey the universal laws of nature also led to an individual obeying the laws of society. Thus a peaceful, orderly state of mind became the basis of a peaceful, orderly society. By promoting physical health and vitality, Chi-Gung made the individual a more useful and productive member of society (Reid, 1998).

The goal of the Buddhist school of Chi-Gung was on spiritual reawakening. Thus the Shao Lin Temple became famous for the martial arts and for meditation, and Chi-Gung became the core practice in physical as well as spiritual self-cultivation (Reid, 1998). In Buddhist Chi-Gung, attention remained firmly focused on the spirit, with physical

exercise used only to counteract the stagnating effects of sitting for prolonged periods in still meditation (Shinnick, 2006). Benor's (2001; 2002) discussions have included scientific studies describing the beneficial effects of prayer on subjects' health. Buddhist lamas have observed that the state of conscious intention on compassion engaged a state of relaxation and well-being which surpassed even that achieved during a state of rest. The early results of this research suggests that parts of the brain thought previously to be fixed in function, such as the stress reflexes of the reptilian brain, may in fact be plastic in nature, able to be changed, shaped and developed through ongoing practice of conscious intention (Dalai Lama, 2003).

Evidence suggests that Chi-Gung originally evolved in ancient China as a form of preventative and curative healthcare and it was in fact the first formal branch of Traditional Chinese Medicine (TCM). The medical school of Chi-Gung also stresses the importance of physical exercise as a means for keeping the body toned and balanced and stimulating the free flow of blood and energy through the whole system (Reid, 1998). TCM has a holistic perspective and considers human health to be an integration of body, mind and spirit (Li, Chen, & Mo, 2002).

Chinese medical Chi-Gung emphasizes soft, slow, rhythmic movements of the body synchronized with deep diaphragmic breathing (Gallagher, 2003). The purpose of these exercises is to stretch the tendons, loosen the joints, and tone the muscles, to promote circulation of blood, and to regulate all the vital functions of the body (Gallagher,

2003). Massage and acupressure were also incorporated in the medical school of practice to assist practitioners in regulating internal energy.

There are basically two types of medical Chi-Gung preventative and curative-and two forms of therapy: self-care through personal practice and transmission of energy from healer to patient (Reid, 1998). Chi-Gung as a form of preventative healthcare is an integral aspect of every style and school of Chi-Gung practice, not just medical Chi-Gung. There are two ways to cure disease with Chi-Gung. One is by practicing specific exercises designed to correct the basic imbalances responsible for particular diseases. The other way of applying Chi-Gung as a curative therapy for disease is by transmitting healing energy from a master healer to the patient.

Indigenous systems of energy healing have evolved in all cultures (Rogers, 2004). These health modalities, such as Traditional Chinese Medicine and Ayurvedic Medicine are based on the concept of a vital energy, or life force that animates all living things. This abstract concept has different names in various cultures, including 'chi', *Ki*, Great Spirit, Holy Ghost, and Prana (Rogers, 2004). In order to remain healthy, the energy must be balanced to ensure that it flows freely throughout the body (Li, Chen, & Mo, 2002). Disease occurs when the flow of this energy is blocked or unbalanced.

The Martial school of Chi-Gung used exercises based on the movements that animals use when fighting. These exercises were practiced to build muscular strength, develop speed, and learn tactics. The martial school also borrowed certain techniques from the

medical school of Chi-Gung (Reid, 1998). The meridians and power points of the human energy system were carefully studied to learn how energy moves in the body. While fighting prowess was the primary goal of martial Chi-Gung in traditional China, today the martial arts are practiced more as a form of preventative healthcare than for fighting (Reid, 1998). Soft-style Chinese martial arts are practiced as much to strengthen and co-ordinate the body, enhances health and vitality, and cultivates spirit as they are to develop fighting prowess (Gallagher, 2003).

Basically the same goals are pursued in all forms of Chi-Gung practice (Shinnick, 2006). The only difference between martial, medical and meditative schools of practice is how the universal energy cultivated through Chi-Gung is applied in human life.

#### **2.5.1.2 Tai Chi with its medical, martial and meditative implications**

The above section has exemplified the different styles of Chi-Gung as they evolved through the ages in China. Each one of them focused on a particular aspect of practice as they cultivated personal power by working directly with energy. Some styles aim mainly at acquiring power for martial prowess, some focus more on refining energy for spiritual development while others are practiced primarily for purposes of health and healing (Reid, 1998).

Almost all traditional styles of Chinese Chi-Gung fall into one of the major 'Three M' categories – medical, martial or meditative – although some of them overlap, all of them promote health and longevity (Reid, 1998; Shinnick, 2006). Tai Chi, the single most popular style of Chi-Gung, consists of a series of rhythmic movements and postures strung together in a seamless sequence (Gallagher, 2003). It is performed softly, slowly and smoothly, like a slow motion dance with deep abdominal breathing. Tai Chi Chuan is an internal form of martial arts that can generate enormous power as it is also seen as a moving meditation that develops concentration, clarity and other spiritual faculties (Reid, 1998; Gallagher, 2003).

Chang San-feng (1279-1368) a renowned martial arts master and a Taoist adept, is credited as the founder of Tai Chi Chuan (Reid, 1998). According to history, he was inspired to create this soft, flowing, meditative style of martial arts by a battle he witnessed between a snake and a crane while wandering in the mountains. Watching the snake bob and weave in circles in precise response to the crane's tactics, and the crane brushing off the snake's attacks with swift but soft strokes of its wings impressed Chang. He was more than just a martial artist. He was also a master meditator, a medical practitioner and a Taoist philosopher. The underlying theme in all of his practices and writings is the central importance of '*chi*' as the foundation of the internal elixir that confers health, longevity and spiritual awareness. Here is an example of his writing from Thomas Cleary's compendium 'Vitality, Energy and Spirit':

*It is said that when you breathe out you contact the Root of Heaven and experience a sense of openness, and when you breathe in you contact the Root of Earth and experience a sense of solidity. Breathing out is associated with the fluidity of a dragon, breathing in is associated with the strength of a tiger. As you go on breathing in this frame of mind, with these associations, alternating between movement and stillness, it is important that the focus of your mind does not shift. Let the true breath come and go, a subtle continuum on the brink of existence. Tune the breathing until you get breath without breathing; become one with it, and then the spirit can be solidified and the elixir can be made (Reid, 2006:38-39).*

The combination of deep diaphragmic breathing and slow, continuous, rhythmic movements generates a very powerful energy field around the body and a highly concentrated flow of energy within (Gallagher, 2003). When used for martial purposes, both the external force field and the internal energy are focused to deflect or deliver blows, sometimes without any physical contact. When Tai Chi is used to develop physical strength, protect health and prolong life, the energy is continuously circulated throughout the Eight Extraordinary Channels of the Macrocosmic Orbit, while the field is used to draw terrestrial and celestial energies into the system from nature and the cosmos. In these applications the mind must remain clearly focused, fully concentrated and completely calm throughout the practice, which makes Tai Chi a very effective form of moving meditation for spiritual cultivation (Reid, 1998).

To understand fully the role of movement in Chi-Gung, one must also comprehend the central significance of stillness, as well as the complementary connection between the two. In the sitting meditation forms of Chi-Gung, there is movement but it is all internal – in the flow of energy through the channels and the circulation of blood in the vessels and the cyclic waves of breath – while externally the physical body rests in motionless serenity (Reid, 1998). In moving forms of Chi-Gung, the rhythmic external motions of the body can only be maintained and kept in harmony with the cyclic rise and fall of breath by a mind that rests serenely in an undistracted state of internal stillness (Reid, 1998; Gallagher, 2003).

This section focused on the martial, meditative and medical implications of Tai Chi as a form of Chi-Gung practice.

## **2.6 Tai Chi as health psychology**

Health psychology may be defined as ‘an interdisciplinary field concerned with the application of psychological knowledge and techniques to health, illness and health care’ (Marks et al., 2000). Since its inception, Tai Chi has been a form of health psychology (Edwards, 2002b). Its philosophy, methods and techniques have their roots in Taoism and traditional Chinese views on illness and healing, central to concepts as ‘*chi*’ ‘*qi*’ (life energy), balance of opposites (Yin and Yang), ‘*yi*’ (mind), ‘*shin*’ (spirit) and ‘*li*’ (ideal consciousness) (Edwards, 2002b).

Traditional Chinese medicine and psychology is essentially phenomenological in nature. It is rooted in individual and collective experience as passed on in cultural beliefs and practices over generations (Edwards, 2002b). Within this indigenous knowledge system illness is defined as an imbalanced or inadequate circulation of energy (*'chi'*) in the meridians and functioning systems in the body. Conversely, health refers to a balanced, strong energy flow. Galante (1981) quotes various research studies, which demonstrate the physical and psychological benefits of regular daily Tai Chi practice on various forms of illnesses.

Surgery was disavowed in Traditional Chinese medicine. Diagnosis was based on the constructive and destructive patterns in nature as observed in the five elements of wood, fire, earth, metal and water. Wood is the first element in that it symbolically represents the life force or spirit as is observed in the growth of trees for example. The creative (*seng*) cycle occurs through wood burning, fire creating the ashes of the earth from which metal and water come. In the destructive (*koh*) cycle, trees break rocks, earth absorbs water, and water extinguishes fire, which destroys metal, which cuts wood (Galante, 1981; Robinson, 2000).

As distinct from modern, rational, cognitive, scientific hypothesis testing, Western biomedical therapeutic styles, traditional Chinese healing is more concerned with unconscious and intuitive behavioural patterns (Jung, 1978). Energy imbalances are diagnosed through the wrists, abdomen and behaviour (Edwards, 2002b). Treatment



typically consists of acupuncture, herbal treatments, diet, massage and relaxing physical and breathing exercises, particularly Tai Chi.

Sohn (1989:64) has pointed out that the practice of regular Tai Chi can produce secondary health gains:

- Greater physical power results from increased energy flow (chi, blood, oxygen) in the muscles increasing strength in the legs and particularly the lower abdomen.
- Greater physical endurance results from more effective use of oxygen and muscular skill.
- Greater control of emotional expression results from the sinking of emotional energy in the chest to the body centre of gravity and movement in the lower abdomen.
- Less need for sleep, as well as deeper, more restful sleep, results from more effective energy use decreased aerobic needs and decreased emotionality.
- Less need for oxygen and therefore less cardiovascular strain results from practicing relaxed, effective movements.

- Less intense emotional requirements result from more control of emotional energy.
- More calm and inner peace.
- More stamina and energy.

As an art form and spiritual meditation, Tai Chi aspires to the supreme and ultimate quality of life. As an indigenous knowledge system and practical form of exercise and health psychology, Tai Chi offers a promotive health and exercise experience suitable for people of all ages (Edwards, 2002b).

Tai Chi teaches calm abdominal out-breathing patterns that stimulate the relaxation inducing the parasympathetic division of the autonomic nervous system (Edwards, 2002b; Gallagher, 2003). As a movement meditation towards holistic living, health, peace, meaning, higher values such as love and finding the Tao or God, Tai Chi provides a balanced alternative to more competitive and frenetic exercise activities so common in our postmodern world (Reid, 1998)

In essence Chi-Gung is a therapeutic, Chinese, cultural refinement of breath coordinated movements such as which occur naturally in swimming, walking and running. The first written references to Chi-Gung are found in texts dating back 4000 years, when another

slow moving aerobic and therapeutic dance was specifically developed to prevent illnesses arising from dampness and flooding in the Yellow river basin and to promote health through guiding and gathering 'chi' (Reid, 1998).

There are infinite benefits to the practice of Chi-Gung. The psycho-physiological effect of performing soft, slow movements in conjunction with deep diaphragmatic breathing is to switch the autonomous nervous system over from the chronically overactive mode of the post modern world to the calming restorative parasympathetic mode, in which the body's various functions and energies are balanced and harmonized and secretions of vital essences such as hormones and neurochemicals are stimulated (Gallagher,2003).

It stands to reason that street children exposed to psycho-social stress and being at risk for illnesses may improve their well-being through Tai Chi exercise. Recent comprehensive research reviews on Tai Chi have revealed substantial evidence for illness prevention and health promotion (Reid, 1998; Li, Chen & Mo, 2002; Gallagher, 2003; Rogers, 2004; Shinnick, 2006). Findings include significant improvements in aerobic capacity, strength, balance, flexibility, relaxation, mood, cardio-respiratory functioning, longevity, blood pressure, osteoporosis, low back pain, arthritis, stress, anxiety, depression, quality of life, psychosocial and immune functioning (Gallagher, 2003; Lan, Lai & Chen, 2002; Taylor-Piliae & Froelicher, 2004). Although most of these studies have been done on the elderly it seems plausible that these benefits of Tai Chi may have similar effects on street children.

The internal school of Chinese martial arts has an old maxim, 'Use four ounces of strength to topple a thousand pounds of weight' (Reid, 1998). This is the essential principle of balance involved in Tai Chi. When energy is properly balanced and correctly applied; only a very small amount is needed to deflect the oncoming force of very large objects. The same principle applies in internal alchemy: when internal energy is properly balanced and circulated, it can overcome any obstacles in the physical body, dissolve hard tumours, restructure damaged tissue, and restore normal vital functions (Rogers, 2004). Energy is an extremely efficient tool for repairing the physical body, and it becomes even more powerful when the light of conscious awareness is focused on it during practice.

Street children that perfect the art of Tai Chi may reap unlimited benefits for health and psychological well-being by harnessing the power of the universe.

## **2.7 The benefits of Tai Chi in relation to psychological well-being**

Tai Chi can be characterized as a moderate form of exercise/physical activity. Although Tai Chi may not be suitable for achieving aerobic fitness, it may enhance flexibility and overall psychological well-being (Sandlund and Norlander, 2000: 1).

However, it is not clear whether the positive effects of Tai Chi are due solely to its relaxation and meditation component, or whether they are the consequence of various peripheral factors, since it is known that stress reduction often occurs when individuals

indulge in activities they find pleasurable and satisfying (Reid,1998). A review of literature concerning exercise and mental health by Plante and Rodin (1990) reveals that 75% of the correlational studies conducted identified significant relationships between exercise and positive mood. Generally children living on the streets don't prioritize exercise as an important need. Their primary need is for food and shelter. As the awareness of both relaxation and exercise in modern stress research has increased, the method termed Tai Chi has come to be of interest to scientists in psychology, medicine and exercise physics, and the number of studies being conducted all over the world is growing rapidly.

Since ancient times Tai Chi practitioners have declared a number of beneficial effects from its frequent use: relief from muscular tension, reduced anxiety, stress, and pain, and increased balance, self-awareness, and strength. Tai Chi is said to provide a buffer against arthritis, malfunctioning metabolism, and other illnesses (Dunn, 1987). According to Qu (as cited in Yan, 1995) there are two major reasons for these experiences. First, participants have to be very focused and concentrated when practicing, and by doing so they exclude other distractions and stressors and experience inner peacefulness. Second, the nature of the art, with smooth, slow and rhythmic movements facilitates muscular relaxation and flexibility.

A study that emphasized the cognitive aspect of exercise was researched by Brown et al (1995). The main purpose of the study was to see if exercise that involved cognition led to greater psychological benefits than non-cognitive exercise. One hundred and thirty

five sedentary, healthy, older adults (aged 40-69 years) exercised three times a week for 16 weeks for a total of 48 exercise sessions. Participants were randomly assigned to one of five experimental conditions:

- Moderate intensity walking (MW)
- Low intensity walking (LW)
- Low intensity walking plus relaxation response (LWR)
- Mindfulness exercise (ME) – Tai Chi exercise
- Control (C)

The results indicated that women in the ME group achieved a significantly greater decrease in anger and total mood disturbance than the LW, LWR, and C groups and also a greater reduction in tension and confusion than those in the LW and LWR groups. Compared to the LWR condition, the women in the ME group also showed a significantly greater decrease in depression. The findings showed that gender is an important factor in exercise, since men reacted positively to the MW training whereas women seemed to benefit more from the Tai Chi programme with regard to mood improvement. The researchers concluded that “mindful exercise programs” such as Tai Chi will benefit those individuals who feel comfortable with that kind of activity.

Jin (1991) conducted a study with males and females from different Tai Chi clubs in Australia to compare different methods for stress reduction. The results showed that the exercise intensity of Tai Chi and brisk walking was considered as moderate and resulted in a release of nor-adrenaline, which may be beneficial to health. The Tai Chi group also showed a greater reduction in state anxiety as compared to other groups. The above studies suggest positive psychological effects of Tai Chi intervention.

A study by Slater and Hunt (1997) indicated that even a period of brief Tai Chi training resulted in reduced nightmares among female undergraduates as compared to a control group. Although this study was small its results are interesting in terms of the general well-being produced by Tai Chi. Szabo, Mesko, Caputo, and Gill (1999) compared post-exercise affect after sessions of aerobic dance, weight training, martial arts, Tai Chi and yoga, and as a control, music appreciation. The results obtained from this investigation indicated that the combined Tai Chi and yoga group reported higher levels of “tranquility” than all other exercise groups. They further reported lower psychological distress, fatigue and exhaustion as compared to the martial arts group.

In his study with African American males who underwent a 24 week Tai Chi program (Mack, 1980) noted a significant difference in their consciousness of somatic tension, awareness of stressful events, and sense of control through behavioral strategies that deal with tension. Mack (1980) attributes the results to the relaxation response elicited by Tai Chi exercise: “an integrated hypothalamic response, the cortical thalamic pause which leads to decreased activity of the sympathetic nervous system and relaxes the

skeletal muscles, decreases blood pressure, respiration and pupil constriction. Mack (1980) further states that Tai Chi relieves somatic stress more quickly than deep meditation and provides African American people with a “flexible response repertoire” to deal with both situational and generic stress.

Li, Duncan, Duncan, McAuley, Chaumeton and Harmer (2001: 53) used a randomized controlled trial to study whether a Tai Chi exercise program enhanced an individual’s psychological well-being. The results indicated that individuals who participated in the 6-month Tai Chi exercise program showed higher levels of health perceptions, life satisfaction, positive affect, and well-being and lower levels of depression, negative affect and psychological distress.

Chen, Hsu, Chen, and Tseng (2007: 845) examined the effects of Tai Chi on the physical and psychological well-being of elders who resided in long-term care facilities. In this longitudinal, time-series, quasi-experimental study, a convenience sample of 28 institutionalized elders was recruited. A six-month Yang-style Tai Chi was administered twice a week for 60 minutes per practice. The well-being outcome variables, including physical and mental health status, blood pressure, quality of sleep, occurrence of falls and fear of falling were measured before the intervention and then at one-month, two-month, three month and six-month intervals. The results of this study indicated that the physical health status and social functioning of frail elders were significantly improved after Tai Chi practice.



Taylor-Piliae, Haskell, Waters, and Froelicher (2006: 313) examined the change in social status following a 12-week Tai Chi exercise intervention among Chinese people with cardiovascular disease risk factors living in the United States of America. This was a quasi-experimental design in which participants attended a 60-minute Tai Chi exercise class three times per week for twelve weeks. Psychosocial status was assessed using Chinese versions of Cohen's Perceived Stress Scale, Profile of Mood States, Multidimensional Scale of Perceived Social Support and Tai Chi exercise self-efficacy. The results of this study showed statistically significant improvements in all measures of psychosocial status. Further, there was improvement in mood state and a reduction in perceived stress. The Tai Chi exercise showed statistically significant increase in self-efficacy to overcome barriers to Tai Chi and confidence to perform Tai Chi as well as perceived support.

A three-month intervention of Tai Chi exercise was administered to college students, and multi-dimensional physical and mental health scores were assessed before and after the intervention (Wang,Taylor,Pearl & Chang, 2004: 453). Thirty college students participated in a 60-minute Tai Chi exercise intervention twice a week for three months. Tai Chi exercise had a positive effect on the self-assessed physical and mental health of college students in this study.

According to Jin (1991: 368) once Tai Chi exercisers obtain mastery of Tai Chi movements they tend to quit smoking, reduce excessive drinking, or stop taking drugs. These changes suggest that joining a Tai Chi class includes a decision to adopt a healthy

way of life and share interests and beliefs with other members. The training in Tai Chi in a supportive atmosphere can foster feelings of self-efficacy and thus enhance enthusiasm to engage in further practice (Jin, 1991: 368).

As noted above (Li et al., 2001) Tai Chi has an impact on mental health (Cenato, 1999; Downing & Yan, 1998) and is an effective therapeutic tool for stress management (Mack, 1980). It has also been reported to lead individuals to an increase in awareness of somatic tension (Sandlund & Norlander, 2000), resulting in reduced anxiety and mood disturbance (Jin, 1991; Olson, 1984) and an improved ability to focus and concentrate (Kutner et al., 1997). High levels of tranquility (Szabo et al., 1999), stress reduction and mental relaxation are the reported results (Alder, 1983; Brown, 1989; Jin, 1989, 1991).

The above studies show a strong motivation for the use of Tai Chi as an intervention to improve psychological well-being. Most studies have been completed with adults. The current research may provide further knowledge with specific focus on adolescence in general and street children in particular, many of whom have behavioural problems.

## **2.8 The nature of psychological well-being**

Around the turn of the millennium a strong scientific interest in the nature and dynamics of psychological well-being seems to have emerged (Basic Behavioral Science Task Force, 1996; Ryan & Deci, 2001; Ryff & Singer, 1996, 1998; Seligman &

Csikszentmihalyi, 2000; Sheldon & King, 2001). Several perspectives, models and constructs have been developed which all attempt to grasp the essence and characteristics of psychological well-being.

An analysis of literature in this regard reveals that conceptualizations of psychological well-being are diverse and on different levels of abstractions (Wissing & van Eeden, 2002: 32). In the domain of personology different views on the nature of optimal psychological functioning have been described in line with differences in personality theories (Schultz, 1977; Walsh & Shapiro, 1983). However, no generally accepted theory on the nature and dynamics of optimal psychological functioning or wellness seems to exist. While there are some similarities, there are also many differences between these theoretical perspectives. The focus in these conceptualizations from personality theories is mainly on intra-psychological aspects.

Several more or less holistic models of well-being, including to a greater or lesser extent aspects of psychological well-being have been proposed, for example by Adams, Bezner and Steinhardt (1997), Baker and Intagliata (1982), Crose, Nicolas, Gobble and Frank (1992), Eberst (1984), Ellsworth (1981), Schwartz (1982), Seeman (1989) and Witmer and Sweeney (1992). Some of these models have in common that their authors implicitly or explicitly incorporate principles of systems theory while others have a more eclectic empirical base. Some of these models are highly abstract (e.g., Witmer & Sweeney, 1992), whereas others are more pragmatic in focus (e.g., Ellsworth, 1981). Most of the models also take contextual factors into consideration. Models specifically

on psychological well-being, are beginning to emerge (e.g., Lightsey, 1996; Frederikson, 2001; Kumpfer, 1999; Pretorius, 1998; Ryan & Deci, 2000; Ryff & Keyes, 1995, Ryff & Singer, 1996; 1998). A complete coherent theoretical framework for the explanation or prediction of psychological well-being is needed. It is as yet, also unclear how the various perspectives from the different models and other conceptualizations of psychological well-being are related (Wissing & van Eeden, 2002:32).

In the literature several more specific or micro-level constructs for the conceptualization of the essence of psychological well-being and the processes involved have been proposed, for example the sense of coherence construct (Antonovsky, 1987; 1993), self-efficacy (Bandura, 1977; 1997; Schwartz, 2000), satisfaction with life (Diener, 2000; Diener, Emmons, Larsen & Griffin, 1985; Myers, 2000), dispositional optimism (Peterson, 2000; Scheier & Carver, 1987), resourcefulness (Rosenbaum, 1990), constructive thinking (Epstein, 1992), emotional intelligence (BarOn, 1997; Goleman, 1995; Martinez-Pons, 1997; Salovey & Mayer, 1990), coping (Amirkhan, 1990; Zeidner & Endler, 1996), social support (Procidano & Heller, 1983), reality orientation (Jackson & Jeffers, 1989), self-actualization (Knapp, 1976), resilience (Barnard, 1994; Glantz & Johnson, 1999; Grotberg, 1997; Rutter, 1984), fortitude (Pretorius, 1998) and hope (Snyder, 2000). The abovementioned constructs and their operationalizations, were inspired by different theoretical traditions and empirical observations. Lightsey (1996) remarks that far more studies are needed to compare results across cultures, race, ethnicity and developmental periods, in order to understand the nature of psychological well-being.

Psychological well-being is influenced by personal, interpersonal and environmental factors, and invariably, by changes within the context of life stages and developmental tasks (Edwards, Ngcobo, & Pillay, 2004:1279). According to Helson and Srivastava (2001), research has demonstrated that psychological well-being develops through a combination of emotional regulation, personality characteristics, and identity and life experiences. The assessment of psychological well-being amongst street children is pertinent at this time as there seems to be an increase of this phenomenon globally and locally. Conceptualizations of psychological well-being in the literature are very diverse, which is understandable when we consider that it is transient in nature, multifactorial in etiology, process and promotion (Edwards, Ngcobo & Pillay 2004:1280). For example, factors that define psychological well-being will differ at different ages and in different circumstances. Secondly, psychological well-being has multidimensional personal, transactional and environmental determinants, which become more complex as the human life cycle progresses. Environmental factors also include non-psychological factors such as housing, food and employment. Thirdly, it is more proactive to promote psychological well-being than prevent factors impeding well-being. There are thus many routes to psychological well being and methods to promote it. In this particular study Tai Chi was chosen as a possible route to promote it amongst street children. For example, Cowan (2000) has put forward competence, empowerment and resilience as exemplar concepts for promotion within a well-being framework. Fourthly, general well-being can be conceptualized as a positive component of optimal health and psychological well-being conceptualized as a positive component of mental health (Edwards, Ngcobo & Pillay 2004:1281). Fifthly, a distinction between

hedonic or subjective and eudemonic or objective psychological well being is useful. According to Edwards, Ngcobo and Pillay (2004) hedonism implies immediate feelings of being happy and well, whereas eudemonia refers to the experienced meaning of well being achieved or earned after some intensive process. Street children that are exposed to a Tai Chi programme may be eudemonic in nature.

Ryff (1989) has highlighted variables such as culture, history, ethnicity and class that can lead to different, even competing conceptions of well-being and this has in fact been neglected in much theoretical and empirical research. Ryff has argued for further research into such cultural values and diverse forms of well-being in different contexts. Edwards, Ngcobo and Pillay (2004) have undertaken a study with the aim of gauging Black South African university student's responses to the Ryff scales of psychological well-being, measures of positive psychological functioning and mental health. This study has revealed similar trends to those obtained in the original standardization. However South African students' means on all dimensions of psychological well-being were well below USA means. According to this study clearly these South African students did not perceive themselves to be as psychologically well as the American sample perceived them.

To understand the nature of wellness, descriptive studies have focused on age and gender profiles (Ryff, 1995: 720). The original validation sample (Ryff, 1989) compared young (18-29 years old), midlife (30-64 years old), and old aged (65 years old or older) adults and found incremental age profiles for environmental mastery and

autonomy (particularly from young adulthood to midlife), decremental age profiles for purpose in life and personal growth (particularly from midlife to old age), and no age differences for self-acceptance and positive relations with others. Most of these patterns were replicated in another study (Ryff, 1991) involving the same three age groups. In both investigations, women scored significantly higher than men on positive relations with others and personal growth, with subsequent studies replicating these sex differences (Ryff, Lee, & Na 1993).

Ryff (1995) purports that the theoretical formulation of well-being was thus supported as a multifaceted domain encompassing positive self-regard, mastery of the surrounding environment, quality relations with others, continued growth and development, purposeful living, and the capacity for self-determination. The above factors will definitely contribute to the psychological well-being of street children but the emphasis in this study is on the type of intervention needed to produce the concomitant feelings of psychological well-being.

Bradburn's (1969) classic work on the structure of psychological well-being provided the initial distinction between positive and negative affect (Ryff, 1989: 1069). The aim of their research was to learn how certain macro level social changes (e.g., changes in education levels, employment patterns, urbanization, or political tensions) affected the life situations of individual citizens and, in turn their psychological well-being. This statement also has relevance to the evaluation of the psychological well-being of children on the street since it is these very macro level social changes that have affected

the life situations of these children and hence contributed to the levels of their psychological well-being.

A major aim of Ryff's (1989) study was to operationalize the dimensions of psychological well-being (Ryff, 1989: 1071). They were operationalized in the following way:

### **2.8.1 Self-acceptance**

Ryff maintains that the most recurrent criterion of well-being evident is the individual's sense of self-acceptance. This is defined as a central feature of mental health as well as characteristic of self-actualization, optimal functioning and maturity. Thus holding positive attitudes toward oneself emerges as a central characteristic of positive psychological functioning. Street children need to develop positive attitudes towards their self and this can contribute to self-actualization and optimal functioning.

### **2.8.2 Positive relations with others**

Many of the well-being theories emphasize the importance of warm, trusting interpersonal relations. The ability to love is viewed as a central feature of mental health. Self-actualizers are described as having strong feelings of empathy and affection for all human beings and as being capable of greater love, deeper friendship and more identification with others. Thus the importance of positive relations with others is highlighted as conceptions of psychological well-being. Street children need to establish



positive relationships with others but this can only occur if they have the will of creating warm, trusting interpersonal relationships. Thus an evaluation of Tai Chi on the psychological well-being of street children could provide valuable insight into its use in providing an adjunct to conventional counseling.

### **2.8.3 Autonomy**

Self-actualizers are viewed as showing autonomous functioning and resistance to enculturation. The fully functioning person is also described as having an internal locus of control, whereby one does not look to others for approval, but evaluates oneself by personal standards. Children that land on the streets tend to lose their autonomy when they join gangs, prostitute rings and drug cartels.

For autonomy to be a meaningful concept it needs to be defined with ample attention paid to the environmental and social context in which it is to be exercised (Schimmel, 2006). Some street children will become resilient street dwellers, able to make a living and find food and shelter with some regularity. But children's capacity for resilience in the face of adversity should not lead one to conclude that living on the street is in the best interest of the child (Schimmel, 2006).

### **2.8.4 Environmental mastery**

The individual's ability to create environments conducive to his or her psychic conditions is regarded as a characteristic of mental health. Life span development is

regarded as the ability to manipulate and control complex environments. Successful aging also emphasizes the extent to which the person takes advantage of environmental opportunities. These combined perspectives suggest that active participation in and mastery of the environment is important ingredients of an integrated framework of positive psychological functioning. Street children can obtain mastery of their environment but the degree to which they take advantage of opportunities can result in positive psychological functioning.

#### **2.8.5 Purpose in life**

Mental health incorporates beliefs that give one the feeling that there is purpose and meaning to life. The definition of maturity also emphasizes a clear comprehension of life's purpose, a sense of directedness, and intentionality. Thus one who has goals, intentions, and a sense of direction will have the feeling that life is meaningful. Generally street children that land on the street have no directedness and meaning to life. There may be an enhanced survival purpose.

#### **2.8.6 Personal growth**

The need to actualize oneself and realize one's potential is central to the clinical perspectives on personal growth. Openness to experience, for example, is a key characteristic of the fully functioning person. Life span theories also give explicit emphasis to continued growth and the confronting of new challenges or tasks at different periods of life.

The integration of mental health, clinical, and life span developmental theories points to multiple converging aspects of positive psychological functioning. The above provide dimensions to the multi-faceted nature of psychological well-being.

The study undertaken by Netz and Wu (2005) in which a meta-analysis of intervention studies on physical activity and psychological well-being was compared showed a small but significant effect of exercise on well-being in adults without clinical disorders. As for the moderating effect of mode of exercise, aerobic training, closely followed by resistive training, was most significant in affecting psychological well-being (Netz and Wu, 2005). This may support the notion that if street children are exposed to Tai Chi which is a form of physical activity this may contribute to psychological well-being amongst these children.

Dunn et al.'s (2001) narrative review identified more studies involving aerobic exercise, but the few that examined resistance training showed significant effects in reducing depressive symptoms. It was also discovered that older adults without clinical disorders, both aerobic and resistance training increased feelings of mastery and self-efficacy thereby improving global well-being. Because moderate intensity of exercise has been recommended for enhancing physical health (Pate et al., 1995), the implications are that high-intensity physical activity is not needed in order to promote psychological health. Tai Chi can be classified as an exercise requiring moderate intensity.

## 2.9 Studies examining the influence of Tai Chi on psychological well-being

Extensive studies have been completed on the influence of Tai Chi on psychological well-being. The affective status of an individual can be regarded as a dimension of psychological well-being. The following table reflects prior studies examining Tai Chi and affective status:

**Table 1 Prior studies examining Tai Chi and affective status (Taylor-Piliae et al., 2006:316)**

Reference	Study design/ Location	Tai Chi style	Sample	Intervention length	Measure	Findings
Jin (1989)	Quasi-experimental Australia	Yang 108 or Wu variation of Yang	TC Skilled (> 1 year), n=33 TC novice (< 1 year), n=33	TC Skilled (>1 year) TC Novice (<1 year)	Mood POMS-65 items	During and after TC decrease in mood disturbance than before TC, in both skilled and novice groups, P = 0.01, 0% drop-outs
Jin (1992)	RCT Australia	Yang 108 or Wu variation of Yang	All TC practitioners Treatment conditions: TC, n = 24 Brisk walking, n = 24 Meditation, n = 24 Reading, n = 24; after exposure to mental and emotional stress Age = 36 years 50% females	>3 years	Anxiety SAI-20 items Mood POMS-65 items	TC treatment condition decreased anxiety than reading condition. P = 0.00, Mood between groups –NS 0% drop-outs

Brown et al. (1995)	RCT USA	Unspecified style	Moderate-intensity walking, n = 24 Low-intensity walking, n = 34 Low intensity walking & relaxation response, n =28 Tai Chi , n = 18 Sedentary control, n = 31 Age = 53 years 51% females	16 weeks 48 sessions	Anxiety STAI-40 items Mood POMS-65 items PANAS-not specified STAXI-not specified	TC group(women only) less mood disturbance than other groups, P =0.04 Anxiety, affect, anger between groups-NS, 25% drop-outs
Sun et al. (1996)	RCT USA	Unspecified style	TC intervention, n =10 Control, n = 10 Hmong immigrants Age range = 60-79 years 65% females	12 weeks 12 sessions	Stress Not specified	TC group decreased stress than controls , P =0.00 0% drop-outs
Chen and Sun (1997)	Quasi- experimental USA	24 movements Unspecified Style	TC intervention, n = 18 Control, n =10 Age range = 50-74 years 50% females	16 weeks 32 sessions	Anxiety TMAS-50 items SAI-20 items	Between groups-NS 22% drop-outs
Ross et al. (1999)	Quasi- experimental USA	Unspecified style	TC intervention, n = 17 Age range = 68-92 years 88% females	8 weeks 18 sessions	Mood MAACL-R-132 Items	Postintervention decreased mood disturbance , P = 0.05 % drop-outs not reported

Chen et al. (2001)	Cross-sectional Taiwan	Unspecified style	TC practitioners, n =40 Sedentary comparisons n = 40 Age = 74 years 63% females	>20 years	Mood POMS-SF-30 Items	TC group decreased mood disturbance than sedentary, P = 0.05 % drop-outs not reported
Bond et al. (2002)	Cross-sectional USA	Unspecified Style	TC Practitioners, n = 71 Aerobic exercise, n = 86 Sedentary comparisons, n =94 Age = 37 years 59% females	>6 months	Anxiety STAI-40 items	TC and aerobic exercise groups decreased anxiety than sedentary P = 0.05 % drop-outs not reported
Tsai et al. (2003)	RCT Taiwan	Yang, 108 Postures	TC intervention, n = 37 Sedentary control , n = 39 Age = 51 years 50 % females	12 weeks 36 sessions	Anxiety STAI- 40 items	Within TC group decrease in anxiety, P = 0.01; between groups-NS 14% drop-outs

RCT = randomized clinical trial; TC = Tai Chi; STAI = State Trait Anxiety Inventory; POMS = profile of mood states;  
POMS-SF = profile of mood states short form, MAACL-R = multiple affect adjective check list revised; TMAS = Taylor  
Manifest Anxiety Scale; SAI = state anxiety inventory; PANAS = Positive Affect/Negative Affect Scale; STAXI = State-Trait  
Anger Expression Inventory; USA = United States of America.

In summary, this section has described the nature and extent of the street child phenomenon around the world. It also highlighted the need for alternative interventions needed locally and worldwide to address this growing phenomenon. The literature indicates that Tai Chi may be a very valuable alternative intervention to improve the psychological well-being of street children.

## **2.10 Resume**

This chapter examined literature on street children, Tai Chi and psychological well-being. The beneficial effects of Tai Chi on psychological well-being were investigated. The next chapter outlines the research design used in this study.

## **CHAPTER 3: RESEARCH DESIGN**

### **3.1 Introduction**

The street child phenomenon is on the rise globally and in South Africa. Given the nature and extent of the problem, the psychological, developmental and management implications of the street child phenomenon in South Africa needs to be more closely examined. The current study attempted to evaluate the effect of a Tai Chi programme offered by the Ethekewini Department of Health on the psychological well-being of street children. Increasing amounts of scientific evidence suggests that mind-body exercise, such as Tai Chi, are related to improvements in mental health, emotional well-being and stress reduction (LaPerriere et al. 1994, La Forge 1997, Arent et al. 2000). This chapter focuses on the rationale for the empirical investigation and the research design.

### **3.2 Rationale for this study**

- The nature and extent of the street child phenomenon needs to be closely monitored as there is a rise in figures globally and locally.
- The role of moderate exercises can never be underestimated in promoting psychological well-being. Tai Chi provided a cost effective, alternative to



improving psychological well-being which was supported by various studies worldwide as mentioned in the previous chapter.

- Once children were exposed to the Tai Chi programme it was hoped that their psychological well-being would improve and this would provide the impetus to exit their street life.
- In South Africa gyms are accessible to the middle class while the poor need to search for cheaper exercise alternatives.
- To date there has been no study on the beneficial effects of Tai Chi on street children internationally and locally in South Africa.
- Tai Chi was thought to foster self-efficacy beliefs through enactive mastery, modeling, verbal or social persuasion and physiological and affective status. Inherent within an enactive mastery experience, Tai Chi is taught at a slow progressive pace, with various levels and periods of refinement built in. Thus these small steps of success help develop the belief in personal efficacy to perform the entire Tai Chi sequence (Taylor-Piliae, 2006: 315).
- Modelling of Tai Chi exercise by the instructor serves to build this source of self-efficacy, combined with the group environment as the mode of instruction.

- Participants could appraise their capabilities in relation to others in the class through social comparison.
- Verbal or social persuasion occurs through the instructor and peers in the class. Self-efficacy beliefs are strengthened with messages from a credible and knowledgeable source, such as a Tai Chi instructor.
- Social connectedness or group support frequently accompanied this type of group-based learning and serves to strengthen performance capabilities.
- The cyclical process of performing Tai Chi enhances physical functioning, a better physical state reduces stress, and improvement in mood encourages one to continue to perform Tai Chi.

### **3.3 The purpose of the empirical investigation**

The purpose of this study was to explore the influence of Tai Chi on the psychological well-being of street adolescents in Durban, South Africa.

### **3.4 Methodology**

#### **3.4.1 Process of gaining entry**

A meeting was held with the head of the Ethekwini Department of Health together with her team that was involved in the Tai Chi programme with street children. At this

meeting the logistics of the programme was discussed as well as the code of ethics that needed to be adhered to, especially concerning confidentiality, informed consent and record keeping. The Department of Health appointed a child care worker to facilitate the research with the street children. A session was conducted with the participants prior to conducting the fieldwork. In this meeting, the researcher outlined the purpose of the investigation and moderated the focus group.

### **3.4.2 Research design**

This research combined both a positivistic and interpretive scientific process to a process and outcome evaluative approach in an empirical investigation with qualitative and quantitative methods using techniques of nonparametric statistical analysis, Appreciative Inquiry and thematic content analysis. A quasi-experimental pre- and post-test group research design was employed. According to Babbie (1998), in the simplest experimental design, subjects are measured in terms of a dependent variable (pre-tested), exposed to a stimulus representing an independent variable, and then remeasured in terms of the dependent variable (post-tested). Differences noted between the first and last measurements on the dependent variable are then attributed to the independent variable. In the current study the independent variable is the Tai Chi Programme offered to the street children and the dependent variable is the psychological well-being of the street children which was tested prior to the Tai Chi programme and four months after the intervention.

Qualitative data was obtained via a summary of responses from the street adolescents during the focus group interviews as well as evaluative reports from other stakeholders, child care workers and health department officials in the programme. This was explicated through the method of thematic content analysis. The most common themes were then ranked accordingly.

A theme analysis describes specific and distinctive recurring qualities, characteristics, subjects of discourse or concerns expressed. In theme analysis the researcher selectively analyzes aspects of human actions and events that illustrate recurring themes. The complexity and the interrelationships of the events and human lives are emphasized (Danariah, 2006:62). The analysis often identifies the themes by individual cases (people or incidents) and then synthesizes themes across cases. The themes give insight into the situation. The study contributes to knowledge by providing an understanding of the phenomenon studied. The fundamental point of departure of phenomenological praxis from traditional natural scientific research is that priority is given to the phenomenon under investigation rather than this being secondary to an already established methodological framework (Stones, 1986).

Any study of concrete human phenomena requires that the approach, method and content be seriously considered in relationship to one another (Giorgi, 1970). One's fundamental worldview, or the philosophical underpinning of one's attitude towards human phenomena, determines the way in which phenomena are to be understood. This in turn guides the nature of one's methodological excavation of the phenomenon, which

reveals itself according to one's excavation procedures (De Koning, 1979; Giorgi, 1971; Merleau-Ponty, 1962). In our everyday lives we tend to think of the objects surrounding us as being independent of us and as functioning according to certain laws of nature and physics. Given this understanding of our environment we tend to categorize, organize and interpret our perceptions according to the perspectives of the natural sciences – the perspective of the natural attitude. However a phenomenological psychologist sees the world differently and this could be called the transcendental attitude (Husserl, 1962). In this approach an effort is made to suspend or to bracket, personal preconceptions and presuppositions by making them explicit. This process of bracketing is called a phenomenological reduction which results in new assumptions being made that moves the research from a natural attitude to a transcendental one. It is the world as revealed through the transcendental attitude that is the focus of research in a phenomenological framework. Thus it is 'through description that the pre-reflective life-world is brought to the level of reflective awareness where it manifests itself as psychological meaning (Valle & King, 1978).

The following guidelines provide a framework for conducting rigorous qualitative and descriptive research in psychology:

- It is essential to distinguish between experimentation and research. Research may be understood to be a cautious inquiry involving a critical and exhaustive investigation but not necessarily experimentation. An experiment

should be seen as a way of supplementing direct observation and thus obtaining information about a phenomenon that would be difficult to obtain in other ways.

- Giorgi (1971) argues that while measurement is the most useful form of description for quantitative data, it is unsuitable for qualitative data. For example it is more meaningful to ask what it means to feel anxious than to investigate the number of times a given person feels anxious over a given period of time. Although the effect size of psychological well-being dimensions were obtained in the present study, qualitative data on the meanings of psychological well-being were also obtained from the pre- and post-test focus groups.
- Within the traditional empirical approach it is axiomatic that in order to best understand a phenomenon it should be reduced to its most fundamental elements or constituents. Without reference to the context of a phenomenon there can be little clarity regarding its inherent psychological meaningfulness.
- A further difference between a phenomenological and a traditional understanding of the research situation has to do with research perspectives: A subject's response is not solely the result of the stimulus characteristic, but also of the meaning that the entire research has for that person both as participant in and observer of the research. The implication here is that how a subject

experiences the research must always be included as an integral part of the data of the research.

- The traditional research paradigm contains the assumption that if the exact conditions are duplicated, the phenomenon must reoccur. It would seem more rigorous and sensible to posit that the essential theme, but not necessarily its identical manifestation, needs to be repeated.

During the focus group interviews with the street children questions on the nature and personal meanings of psychological well-being were obtained. Krueger (1988) points out five advantages of focus groups which the researcher also found consistent with the focus group of the present study:

- This technique is a socially oriented research method capturing real-life data in a social environment
- It has flexibility
- It has high face validity
- It has speedy results and
- It is low in cost

The advantages of the focus group with the street children included an opportunity to obtain real life data about the street child phenomenon, it did provide the researcher flexibility in getting the street children from various places of safety into one venue, the opportunity to obtain valid data about the phenomenon, the process was speedy and the exercise was relatively inexpensive.

Krueger (1988) also notes some disadvantages of the focus group method which need to be taken into account when the data is analyzed:

- Focus groups afford less control than individual interviews. Initial difficulties in relation to group discipline and control were overcome with support of the child care workers and departmental officials concerned.
- Data are difficult to analyze. The data was analyzed thematically due to the variety of responses during the pre- and post-tests.
- Moderators require special skills. This view of Krueger (1988) is supported as it was difficult during the first session.
- Difference between groups can be difficult. This did not occur in this study.
- Groups are difficult to assemble. The child care worker took responsibility for this and no difficulties were experienced.



- The discussion must be conducted in a conducive environment. The focus group was held in the Department of Health boardroom which was conducive.

Kreuger (1994) reports that data from a focus group is recorded in the following manner:

- raw data format
- descriptive approach
- the interpretive model

The nature of this study permitted the use of both the descriptive and interpretive models. One of the key aspects addressed in the focus group session was Appreciative Inquiry.

The philosophy of appreciative inquiry is expressed as a set of principles that together convey the set of beliefs and values that guide practice. Appreciative Inquiry is informed by four principles (Cooperrider & Srivastava, 1987) viz.:

- Research should begin with appreciation
- Research should be applicable
- Research should be provocative
- Research should be collaborative

This study met these criteria adequately. A culture of appreciation was displayed during the investigation by all the relevant stakeholders (street children, child care worker, and Department of Health officials). The applicability of the study resided in the promotion of health through moderate intensity exercise facilitated by the Tai Chi programme. The study was provocative as it addressed the social problem of the street child phenomenon which is developing into a critical issue locally and internationally. Collaboration was maintained with all the relevant stakeholders. There is an understanding that appreciative inquiry originated from social constructivism and organizational development (Bushe, 1995). This investigation focused on the social construction of the street children and their well-being development through physical activity of a moderate intensity namely, Tai Chi.

Quantitative data using Carol Ryff's Psychological Well-being Scale was obtained at baseline prior to the Tai Chi programme and four months later after exposure to the programme.

### **3.4.3 Participants**

The study was conducted in the Ethekeini Region in KwaZulu-Natal, South Africa as this programme was only offered to the street children within this area. The participants were street children that were from places of safety within the surrounds of Ethekeini.

A total of forty two subjects initially participated in this study during the pre-test period. However at the post-test only thirteen participants were available. Part of the reason for this is the fluid, unpredictable, and evasive life-style of street children which creates problems for sustainability. Many of the forty two initial subjects absconded from their places of safety and some of them were moved to different places of safety which made tracking difficult. Seven of the youth were females and six males. The age range of the participants was fifteen to twenty years. Eight of the participants were Zulu speaking and the remaining five were English speaking.

The sample of street children was organized by the *Ethekwini Department of Health*. Transport to and from the venue was organized by the Places of Safety. There was constant liaison between the Child care worker and the researcher during the running of the programme. The researcher provided assurances of confidentiality, anonymity and explained the intended use of the data during the pre-test phase. Therefore informed consent was required by each participant. For reasons of confidentiality and anonymity, the names of individuals were removed from the questionnaires. All participants were informed of the purpose of the study and the programme was explained to participants to allay any fear of risk for harm.

#### **3.4.4 The programme**

The child care worker in charge of the logistics of getting the children to the venue arranged for transportation of the street children. This was a quasi-experimental study.

Participants attended a sixty minute Tai Chi exercise group twice per week for 16 weeks. The Tai Chi programme took place at the Durban beachfront. The Tai Chi used in the programme was of the Chen style (See Annexure C for the original proposal).

### **3.4.5 Measuring Instrument**

The measuring instrument was presented in English by the researcher and in IsiZulu by the Child care workers to ensure accurate understanding and self-perceptive responses.

#### **3.4.5.1 Carol Ryff's psychological well-being scale**

Ryff's (1989) standardized shortened 18 item scale of objective psychological well-being was used to assess the participants on six dimensions of well-being: self-acceptance, positive relations, autonomy, environmental mastery, purpose in life and personal growth.

- The scale has been standardized through comparisons with subjective measures of psychological well-being and is significantly linked to personality factors (Schmutte & Ryff, 1997). The six subscales have high levels of internal consistency: positive relations with others (.88), autonomy (.83), environmental mastery (.86), personal growth (.85), purpose in life (.88), and self-acceptance (.91).

- The six subscales on the shortened scale also have high levels of correlations with the 120-item parent scale: positive relations with others (.98), autonomy (.97), environmental mastery (.98), personal growth (.97), purpose in life (.98), and self-acceptance (.99)

The scale has an 89 level of AGIF (adjusted goodness of fit index), suggesting that it is a model of good fit. The combined scores on the six dimensions can also be used for an overall well-being percentage.

### **3.5 Analysis of data**

The SPSS statistical programme was used to analyze the data.

### **3.6 Resume**

This chapter has been concerned with the rationale for the empirical study and it highlights the methodology of the study. The next chapter deals with the results of the investigation.

**CHAPTER 4: RESULTS AND DISCUSSION**

**4.1 Introduction**

This research attempted to determine the impact of a Tai Chi programme on psychological well-being. The following is an interpretation of results obtained from the pre- and post-tests in relation to the Tai Chi programme.

**4.2 Quantitative results**

The measures of psychological well-being on the standardized Ryff scale provided the quantitative data. The following is a presentation of pre- and post-test results for the group:

**Table 2: Summary means table for the Tai Chi intervention as revealed through Pre- and post-testing of psychological well-being measures.**

	a	pg	em	pl	pr	sa	Total
Pre-test	10.6	13.1	10.5	10.8	10.5	10.0	65.4
Post-test	13.8	15.5	14.7	14.2	14.8	10.5	83.6

**Key a = autonomy; pg = personal growth; em = environmental mastery; pl = purpose in life; pr = positive relations with others; sa = self-acceptance.**

#### 4.2.1 Wilcoxon signed-rank test

The Wilcoxon signed-rank test analysis on the quantitative analysis revealed the following statistical results for within group comparison over the intervention period :

Autonomy	$z = 2.56,$	$p < .01$
Personal growth	$z = - 2.14,$	$p < .03$
Environmental mastery	$z = - 2.59,$	$p < .01$
Purpose of life	$z = 2.73,$	$p < .01$
Positive relations with others	$z = 2.76,$	$p < .01$
Self-acceptance	$z = -.18,$	$p = .86$
Total Psychological Well-being	$z = - 3.19,$	$p < .001$

In summary the Wilcoxon's analysis revealed significant differences for all dimensions of Psychological well-being except for self-acceptance. The changes in total psychological well-being were significant at .01 confidence level. All these changes are clearly revealed through inspection of the means of the various psychological well-being dimensions as revealed in the summary means in Table 2.

### **4.3 Qualitative results**

The measures of psychological well-being in terms of focus group pre- and post-test meanings provided the qualitative data. The following is a summary of responses provided by the street children during the pre-test focus group:

- “My brain is working well and I can do bigger things. I want to be successful.”
- “I want to achieve more in life because I am young.”
- “This opportunity is a second chance to do better things.”
- “To have psychological well-being means to have a supportive person guiding you.”
- “Our psychological attitude formed according to the environment (family/street).”
- “Our psychological thinking can be misleading – we go onto the street because we saw our parents as being too hard. We saw them as abusing us.”
- “The Tai Chi is good for us because it is exercise.”

#### **4.3.1 Pre-test focus group meanings derived from the street children’s responses**

- The street children reported that their negative outlook on life emerged from the environment that they grew up in namely the family and the street.



- Their psychological well-being was low due to the dysfunctional parenting that forced them onto the streets.
- There was a lack of social support amongst street children.
- The Tai Chi programme may offer them a second chance in life to change their lives for the better since there will be a supportive person guiding them.
- The street children thought that they were still young and being part of the programme may help them to achieve more in life.
- They thought that the Tai Chi programme could improve their fitness because it was a form of exercise.

The following is the raw data provided by the street children during the post-test focus group:

- “I am feeling happier and fit after doing Tai Chi.”
- “When is Tai Chi going to start again?”
- “The Tai Chi helped us to focus and exercise a lot.”
- “When I did Tai Chi, I showed everyone respect and listened to them.”
- “I feel relaxed and fit.”

- “I feel like I got rid of my stress.”
- “After Tai Chi I felt positive.”
- “I am now doing healthy living.”
- “I gave up smoking on my own and not sniffing glue anymore.”
- “My home is still negative but I have changed my lifestyle.”
- “I have mental strength.”

### **4.3.2 Thematic analysis of post-test focus group**

The summary of responses obtained during the post-test focus group interviews was explicated through the method of thematic content analysis. The most common themes were then ranked accordingly.

#### **4.3.2.1 Positive feelings**

The street children benefited from the Tai Chi programme as it improved their personal happiness. There was an overall increased sense of enjoyment, happiness and decreased levels of anxiety during and after the Tai Chi programme. Fox (2000) also found that appropriate exercise interventions improve general health, quality of life, subjective well-being, self-esteem and self perception.

The present study also supported the finding that physical activity helped individuals to feel better through improvement in mood, reduced anxiety and enhanced self-perception (Roth and Holmes, 1987). Mutrie and Parfitt (1998) also found evidence in their investigation that physical activity is important for children's psychological well-being which was consistent with the findings of the present study. A positive relationship between physical activity and psychological well-being was identified by Hendry, Schucksmith and Cross (1989) and Steptoe and Butler (1996).

The Tai Chi programme with the street children contributed to positive feelings amongst participants which were also supported by Gruber (1986) and Fox (2000) that sport and exercise can provide an important arena for youngsters to be successful and this is experienced through positive effects on self-esteem, self-perceptions of competence and body image.

Although most of these studies have been done on the elderly, it seems that the benefits of Tai Chi do have similar effects on street children. Recent comprehensive research reviews on Tai Chi have revealed substantial evidence for illness prevention and health promotion. The findings of comprehensive research reviews include significant improvements in aerobic capacity, strength, balance, flexibility, relaxation, mood, cardio-respiratory functioning, longevity, blood pressure, osteoporosis, low back pain, arthritis, stress, anxiety, depression, quality of life, psychosocial and immune

functioning (Gallagher, 2003; Lan, Lai & Chen, 2002; Taylor-Piliae & Froelicher, 2004).

The street children in the present study experienced higher levels of positive affect following exposure to a Tai Chi programme. Participants in this study expressed a positive change in lifestyle after engaging in the Tai Chi programme. Although Tai Chi may not be suitable for achieving aerobic fitness, it may enhance flexibility and overall psychological well-being (Sandlund and Norlander, 2000: 1). A review of literature concerning exercise and mental health by Plante and Rodin (1990) reveals that 75% of the correlational studies conducted, identified significant relationships between exercise and positive mood. Li, Duncan, Duncan, McAuley, Chaumeton and Harmer (2001: 53) used a randomized controlled trial to study whether a Tai Chi exercise program enhanced an individual's psychological well-being. The results indicated that individuals who participated in the 6-month Tai Chi exercise program showed higher levels of health perceptions, life satisfaction, positive affect, and well-being and lower levels of depression, negative affect and psychological distress. Although the present study investigated the influence of a Tai Chi programme on participant's psychological well-being over a four month period the findings showed similarities to that obtained over a six month period in the previous study.

Street children exposed to the four month Tai Chi programme showed significant improvement in all dimensions of psychological well-being except for self acceptance.

Chen, Hsu, Chen, and Tseng (2007: 845) examined the effects of Tai Chi on the physical and psychological well-being of elders over a six month period. The results of this study indicated that the physical health status and social functioning of frail elders were significantly improved after Tai Chi.

A three-month intervention of Tai Chi exercise was administered to college students, and multi-dimensional physical and mental health scores were assessed before and after the intervention (Wang, Taylor, Pearl and Chang, 2004: 453). Thirty college students participated in a 60-minute Tai Chi exercise intervention twice a week for three months. Tai Chi exercise had a positive effect on the self-assessed physical and mental health of college students in this study. The study with college students also lends support to the findings of the study with street children that experienced positive effects after being exposed to the Tai Chi programme.

#### **4.3.2.2 Improved physical fitness and mental health**

The Tai Chi programme improved overall fitness and health in the street children. The street children displayed improved levels of physical self-perception and confidence. A positive self concept is not only important for an adolescents's psychological well-being but it also influences his or her social relationships which was also evident in this study. The quantitative research studies for the benefits of exercise interventions in health promotion programmes are internationally established (Morris and Summers, 1995;

Weinberg and Gould, 1999; Edwards, 2001a). Research indicates that a large number of youth and adolescents are not physically active and there is a youth fitness crisis prevalent in society (Robbins, Powers, and Burgess, 1997). Children engaged in the Tai Chi programme showed renewed vigour in pursuing personal fitness as some of them designed their own exercise regimen, which strongly emphasizes the need for our youth and adolescents to become physically active.

The medical school of Chi-Gung also stresses the importance of physical exercise as a means for keeping the body toned and balanced and stimulating the free flow of blood and energy through the whole system (Reid, 1998). Chinese medical Chi-Gung emphasizes soft, slow, rhythmic movements of the body synchronized with deep diaphragmic breathing. The purpose of these exercises is to stretch the tendons, loosen the joints, and tone the muscles, to promote circulation of blood, and to regulate all the vital functions of the body. By promoting physical health and vitality, Chi-Gung made the individual a more useful and productive member of society. The street children that were involved in the Tai Chi programme did show improvements in fitness levels and psychological well-being that could also enable them to become productive members of society.

Since its inception, Tai Chi has been a form of health psychology (Edwards, 2002). The street children did show gains in fitness levels as evidenced during the post-test focus group. Sohn (1989:64) has pointed out that the practice of regular Tai Chi can produce

secondary health gains in the form of greater physical powers from increased energy flow (chi, blood, oxygen) in the muscles increasing strength in the legs and particularly the lower abdomen.

According to Jin (1991: 368) once Tai Chi exercisers obtain mastery of Tai Chi movements they tend to quit smoking, reduce excessive drinking, or stop taking drugs. One of the children mentioned that they had given up smoking and sniffing glue subsequent to being part of the Tai Chi programme. These changes suggest that joining a Tai Chi class includes a decision to adopt a healthy way of life and share interests and beliefs with other members.

The training in Tai Chi in a supportive atmosphere can foster feelings of self-efficacy and thus enhance enthusiasm to engage in further practice (Jin, 1991: 368). All the street children showed enthusiasm to continue with Tai Chi. Tai Chi has an impact on mental health (Cenato, 1999; Downing & Yan, 1998) and is an effective therapeutic tool for stress management (Mack, 1980). It has also been reported to lead individuals to an increase in awareness of somatic tension (Sandlund & Norlander, 2000), resulting in reduced anxiety and mood disturbance (Jin, 1991; Olson, 1984) and an improved ability to focus and concentrate (Kutner et al., 1997). High levels of tranquility (Szabo et al., 1999), stress reduction and mental relaxation are the reported results (Alder, 1983; Brown, 1989; Jin, 1989, 1992).

#### **4.3.2.3 Stress reduction**

The street children experienced a reduction in stress. One of the children indicated that she was more focused and engaged in her own exercise programme to increase her coping skills with life on the street. She mentioned that although her home environment is still negative she has changed her lifestyle for the better subsequent to the Tai Chi programme.

Sinyor, Schwartz, Peronnet, Brisson and Seraganian (1983) were able to demonstrate that persons trained aerobically were able to recover faster from experimentally induced stress than untrained persons on physiological, biochemical, and psychological measures. Tai Chi may be regarded as a physical activity of moderate intensity yet it seems to produce similar effects of recovery from stress as aerobic activities. According to Qu (as cited in Yan, 1995) participants engaging in Tai Chi have to be very focused and concentrated when practicing, and by doing so they exclude other distractions and stressors and experience inner peacefulness. The street children in this study applied their concentration and focus beyond the Tai Chi training sessions into other areas of their life.

Jin (1991) conducted a study with males and females from different Tai Chi clubs in Australia to compare different methods for stress reduction. The results showed that the exercise intensity of Tai Chi and brisk walking was considered as moderate and resulted



in a release of noradrenaline, which may be beneficial to health. The Tai Chi group also showed a greater reduction in state anxiety as compared to other groups. These findings are also supported by the present study.

The above studies suggest positive psychological effects of Tai Chi intervention. A study by Slater and Hunt (1997) indicated that even a period of brief Tai Chi training produced increases in psychological well-being. The four month Tai Chi programme with street children contributed to improvements in their well-being and helped to reduce stress amongst participants.

Szabo, Mesko, Caputo, and Gill (1999) compared post-exercise affect after sessions of aerobic dance, weight training, martial arts, Tai Chi and yoga, and as a control, music appreciation. The results obtained from this investigation indicated that the combined Tai Chi and yoga group reported higher levels of “tranquility” than all other exercise groups. They further reported lower psychological distress, fatigue and exhaustion as compared to the martial arts group. These feelings of tranquility and lowering of psychological distress and fatigue was also reported by the street children.

In his study with African American males who underwent a 24 week Tai Chi program Mack (1980:37) noted a significant difference in their consciousness of somatic tension, awareness of stressful events, and sense of control through behavioral strategies that deal with tension. Mack (1980) further states that Tai Chi relieves somatic stress more

quickly than deep meditation and provides African American people with a “flexible response repertoire” to deal with both situational and generic stress. The Tai Chi program that the street children participated in contributed to a reduction in stress and provided them with enhanced coping mechanisms. In a study with Chinese people living in the United States of America, Taylor-Piliae et al. (2006: 313) obtained results that showed statistically significant improvements in all measures of psychosocial status, reduction in perceived stress and improvement in mood state. The present study with the street children increased their self-efficacy to overcome barriers to Tai Chi and it gave them confidence in performing Tai Chi.

The stakeholders provided the following evaluations of the programme:

- “The children provided a good response to the Tai Chi intervention and they did show change as the programme developed.”
- “Initially the children were easily distracted, however by the third session they demonstrated more enthusiasm.”
- “There was more rapid progression amongst the boys than the girls.”
- “As the programme developed there was a clarification of focus amongst the children. During the break the children will constantly ask for demonstration of what they had learnt.”
- “Transport problems, street shelters closing down and the municipal workers strike had a negative impact on the programme.

- “The children were more excited, showed good focus and displayed a change of attitude.”
- “The group of children got closer together and displayed good interpersonal relationships.”
- “The children showed better behaviour and good respect.”
- “The children showed improved concentration.”
- “The Tai Chi should be done every day to help children to master the complex movements.”
- “The children improved psychologically.”
- “The children displayed less conflict with each other.”

### **4.3.3 Thematic analysis of outcome evaluation by stakeholders**

The stakeholder responses were explicated through a method of content analysis to arrive at common themes:

#### **4.3.3.1 Increase in positive feelings**

There was an increase in positive feelings and confidence, and a decrease in levels of anxiety during and after the Tai Chi programme in the street children. The children displayed great enthusiasm to the Tai Chi programme which contributed to enhanced feelings of control, improved self concept, self-esteem and self-efficacy and more

positive social interactions. As well as working on a physical level in the body Chi-Gung enhances cerebral functions and awakens latent talents and abilities that might otherwise lie dormant forever (Gallagher, 2003). Chi-Gung practice also releases unnecessary tension in the muscular system (Gallagher, 2003). The street children seemed to display better management of conflict situations and were more relaxed.

Gruber (1986) indicates that the effect of physical activity programmes was positive for those initially low in self-esteem. Calfas and Taylor (1994) concluded that the strongest changes were self-esteem, self-concept and self-efficiency with nine out of ten studies revealing positive results. The street children in the present study demonstrated positive changes in self-esteem, self-concept and self-efficiency.

There is sufficient evidence to conclude that physical activity is an effective medium for developing a positive self-concept in children particularly those with low self-esteem, as it would encourage mastery and self-development (Biddle et al., 2000). Traditional Chinese Medicine of which Chi-Gung is a branch has a holistic perspective and considers human health to be an integration of body, mind and spirit (Li, Chen, & Mo, 2002).

#### **4.3.3.2 Improvement in fitness and mental health**

The street children showed fitness and health benefits from the Tai Chi training. It can be argued that physical activity does not only help protect against unhealthy behaviour and ill health but it also inherently contributes to a sense of improvement, life control and thus to mental well-being (Tannahill, 2000). A variety of studies examining the role of exercise on psychological well-being and mood supports the notion that exercise will improve well-being and mood states such as anxiety, stress, depression, tension and fatigue (Seraganian, 1993).

There are infinite benefits to the practice of Chi-Gung. The psycho-physiologic effect of performing soft, slow movements in conjunction with deep diaphragmatic breathing is to switch the autonomous nervous system over from the chronically overactive mode of the post modern world to the calming restorative parasympathetic mode, in which the body's various functions and energies are balanced and harmonized and secretions of vital essences such as hormones and neurochemicals are stimulated (Gallagher, 2003). In order to remain healthy, the energy must be balanced to ensure that it flows freely throughout the body (Li, Chen & Mo, 2002). The street children did display positive feelings after participating in the Tai Chi programme. It stands to reason that street children exposed to psycho-social stress and being at risk for illnesses may improve their well-being through Tai Chi exercise.

#### **4.3.3.3 Increase in self-confidence**

The street children displayed increased confidence after being exposed to the Tai Chi programme. Various researchers have demonstrated that psychological well-being is promoted through regular exercise and sport which occurs twenty to thirty minutes a day, at least three times a week (Edwards, 2002; Scully et al., 1998). Psychological explanations why exercise enhances psychological well-being include the following : enhanced feeling of control, improved self-concept, self-esteem, self-efficiency and more positive social interaction (Edwards, Basson and Edwards, 2004; Scully et al., 1998).

#### **4.3.3.4 Positive synergy**

The Tai Chi programme allowed the children an opportunity to practice the various movements within a group context which fostered closer relationships within members of the group. Overall this created a sense of positive synergy within the group. Arnold (1968) contends that physical activity does not only provide a means by which young people can come together but serves as a vehicle through which the adolescent can be helped to social adjustment. A positive self-concept is not only important for an adolescent's mental well-being but it also influences his or her social relationships, progress at school and career expectations and success (Gouws and Kruger, 1994).

Research findings indicate that Tai Chi which can be deemed a physical activity is beneficial in enhancing psychological well-being. A psychologically well person is associated with many positive aspects such as self-discipline, self-acceptance, and autonomy and maintains better relations with others.

In this research, the quantitative results indicated significant differences in psychological well-being of street children exposed to a Tai Chi programme. The qualitative results also appeared to support earlier studies emphasizing the value of Tai Chi as a form of physical activity that promotes psychological well-being. In addition to the physical activity aspect of Tai Chi, the literature and the qualitative results supported its meditative and medicinal contributions to psychological well-being.

#### **4.4 Resume**

This chapter dealt with the results and discussion of findings. The next chapter concludes the research by highlighting the limitations of the study and future recommendations that can be considered by other researchers.

## **CHAPTER 5: CONCLUSION**

### **5.1 Introduction**

The previous chapter elucidated the quantitative and qualitative results of the empirical investigation. In this chapter a summary of the main findings will be presented. This chapter also concludes the research exercise with special reference to limitations and recommendations for future research.

The aim of this research was to evaluate the psychological well-being of Durban street children before and after they have engaged in a Tai Chi programme.

This chapter focuses on the following:

- Summary of findings
- Limitations
- Recommendations
- Conclusion



## **5.2 Summary of main findings**

This research adopted a positivistic, interpretive, process and outcome evaluative approach in an empirical investigation with qualitative and quantitative methods using techniques of nonparametric statistical analysis, Appreciative Inquiry and thematic content analysis. The primary focus of this research was to evaluate the influence of a Tai Chi programme on the psychological well-being of street children.

The quantitative analysis revealed significant differences for all dimensions of psychological well-being except for self-acceptance. The changes in total psychological well-being were significant at .001 confidence level.

The qualitative results as indicated by the thematic content analysis of the post-test focus group support findings of previous literature. The street children displayed positive feelings, improvement in fitness and mental health, and reduction in stress.

The Tai Chi program contributed to an increase in the psychological well-being of street children. There was a reported reduction in smoking and glue sniffing amongst street children that participated in the Tai Chi programme. The street children showed improvement in self-confidence levels. The Tai Chi programme also created a positive synergy amongst street children improving interpersonal relationships.

The conclusion drawn from this study is that Tai Chi can improve psychological well-being amongst street children.

### **5.3 Limitations of the study**

- The sample was limited in size and population representativeness, which may prevent its generalisability to the total population of street children.
- The drop out rates amongst street children in this study were high .This may have impacted negatively on the validity of the findings of the present research.
- The literacy levels amongst street children were low which could cast doubt on the authenticity of the psychological test response data.
- This study did not have a control therefore no direct causality with regard to the effect of Tai Chi on psychological well-being can be inferred from the results.

## **5.4 Recommendations**

- Future research should focus on increasing the sample size together with a control group.
- The Tai Chi programme should be done every morning to enable participants time to master movements which are quite complex.
- If future research is carried out on street children then arrangements should be made for the children to use the correct attire.
- There should be ongoing support for the follow-up of these street children.
- Programmes could be designed for places of safety by using these study/findings as a base.
- Tai Chi (physical activity) programmes for school going children could be implemented and sustained within the province.

## **5.5 Conclusion**

In conclusion this study indicated that Tai Chi could be useful as an alternate form of management and exercise for improving psychological well-being in street children. The findings in conjunction with the existing research on Tai Chi suggest that enhanced mental health may be achieved without strenuous activity. Given the host of psychological, social and physical problems that affect street children, promoting a low cost and low technology activity such as Tai Chi would appear to be of particular interest to street children to improve their psychological well-being, physical health and ultimately their quality of life.

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## ANNEXURE A

Igama Lakho:

Iminyaka yakho:

Ubulili bakho:

Ulimi lwasekhaya:

Ikheli lakho ninombolo yocingo:

Lernibuzo elandelayo imayelana nendlela ozizwa ngayo kanye nempilo yakho. Ukhumbule ukuthi ayikho impendulo engamukelekile.

Khetha inombolo ehambisana nokuvuma noma ukuphika	Ngiphika kakhulu	Ngiyaphika	Ngiphika kancane	Ngivuma kancane	Ngiyavuma	Ngivuma Kakhulu
1. Ngithola ugqozi kubantu abanemibono Enzulu	1	2	3	4	5	6
2. Ngicabanga ukuthi kubalulekile ukuthola ulwazi olusha oluzochubuluza indlela ozibheka ngayo wena uqobo nomhlaba ophila kuwo	1	2	3	4	5	6
3. Imvamisa, ngizizwa kuyimina owengamele isimo engiphila kuso	1	2	3	4	5	6
4. Ngiphilela inamhlanje anginandaba Nekusasa	1	2	3	4	5	6
5. Ngikuthola kunzima futhi kuyinkinga ukugcina ubudlelwane bubuhle kulabo engisondelene nabo	1	2	3	4	5	6
6. Uma ngibheka impilo yami, ngiyagculiseka indlela izinto ezenzeka ngayo	1	2	3	4	5	6
7. Ngiyayethemba imibono yami ngisho noma ngabe iphambene nemibono yeningi	1	2	3	4	5	6
8. Kimina impilo iyisimo esiqhubekayo sokufunda, ukuguquka nokukhula	1	2	3	4	5	6
9. Izidingo zemihla ngemihla zingithena Amandla	1	2	3	4	5	6
10. Abanye abantu baphila impilo engenanhloso, kodwa mina angifani nabo	1	2	3	4	5	6
11. Abantu bangangichaza njengomuntu ovelele nofisayo ukunikezela ngesikhathi sakhe kwabanye	1	2	3	4	5	6
12. Ngiyayithanda indlela engiyiyo	1	2	3	4	5	6
13. Ngizilinganisa ngalokho engikubona kubalulekile kimi, hhayi ngalokho abanye abacabanga ukuthi kubalulekile	1	2	3	4	5	6
14. Ngaphonsa ithawula kudala ekuzameni ukuthuthukisa noma ukuguqula impilo yami	1	2	3	4	5	6
15. Ngiyakwazi ukuziphathela izidingo zempilo yami usuku nosuku	1	2	3	4	5	6
16. Ngesinye isikhathi ngiyaye ngizwe sengathi sengikwenze konke okufanele ngikwenze empilweni	1	2	3	4	5	6
17. Angikaze ngibe nobudlelwane obuhle nobethembekile nabanye abantu	1	2	3	4	5	6
18. Inqubekela phambili yami empilweni ingibhisa ngezindlela eziningi	1	2	3	4	5	6



## ANNEXURE B

Name:

Age:

Gender

Home language:

Address and contact number:

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.

Circle the number that best describes your present agreement or disagreement with each statement	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
1. I tend to be influenced by people with strong opinions.	1	2	3	4	5	6
2. I think it is important to have new experiences that challenge how you think about yourself and the world.	1	2	3	4	5	6
3. In general, I feel I am in charge of the situation in which I live.	1	2	3	4	5	6
4. I live life one day at a time and don't really think about the future.	1	2	3	4	5	6
5. When things go wrong, I often feel bitter and distrustful.	1	2	3	4	5	6
6. When I look at the story of my life, I am pleased with how things have turned out.	1	2	3	4	5	6
7. I have sometimes been in a minority, but I have always been in the general consensus.	1	2	3	4	5	6
8. For me, life has been a continuous process of learning, changing and growth.	1	2	3	4	5	6
9. The demands of everyday life often get me down.	1	2	3	4	5	6
10. Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6
11. People would describe me as a giving person, willing to share my time with others.	1	2	3	4	5	6
12. I like most aspects of my personality.	1	2	3	4	5	6
13. I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4	5	6
14. I gave up trying to make big improvements or changes in my life a long time ago.	1	2	3	4	5	6
15. I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5	6
16. I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6
17. I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6
18. In many ways, I feel disappointed about my achievements in life.	1	2	3	4	5	6

## **ANNEXURE C**

### **PROPSAL TO ETHEKWINI SPORTS AND RECREATION DEPARTMENT TO TRAIN TEACHERS OF CHEN STYLE TAI JI.**

Presented by Master Liang Jun Ping and Dr. James F. Hartzell

In response to a request by the Honorable Obed Mlaba, Mayor of Ethekwini Municipality, D.r Urmila Sankar, Head of Department, Ethekwini City Health, and Mr. Vusi Mazibuko, Head of Department, Ethekwini Sports and Recreation, Master Liang Jun Ping, and his student Dr. James Hartzell have put together a proposal for training of 50 Tai Ji teachers. After one full year of training, these teachers will become qualified to provide basic training in the first 15 movements of Chen style Tai Ji in community halls in Ethekwini.

#### **Liang Jun Ping (aka Stephen Liang, Stephen Young)**

Master Liang teaches Chen style Tai Ji—the original version of Tai Ji passed down through family lineages in China for thousands of years. He is the only such teacher in Durban. All other teachers teach only versions of the simpler Yang style—a modern derivative from Chen style. The title “Master” is earned in China by training under acknowledged masters of the tradition, and is only achieved after years of rigorous training and practice. Master Liang is the only such master living in Durban, and is the 20<sup>th</sup> lineage holder of Chen style Tai Ji.

Born and raised in Shanghai China, Master Liang comes from a family of XiaoLin Martial Arts masters. Liang Jun Ping was born December 12, 1969, and began training in Tai Ji at the age of 14. From 1984 he started Tai Ji with Master Kang Ming Qiang, the 19<sup>th</sup> lineage holder of Chen style Tai Ji. Master Kang Ming Qiang was Master Chen Zhao Kwei's number 1 student and is presently head of the Shanghai Chen Tai Ji Association. In 1986 he joined the Chen Tai Ji Association. There he met Master Ker Peng Fei. Master Ker Peng Fei started Tai Ji at the age of 6 with masters Chen Zhao Kwei, and Feng Jir Chiang (18<sup>th</sup> lineage holder of Chen style Tai Ji—he's world famous, still living in China)—both of whom also taught Master Liang Jun Ping. The teacher of Master Kang Ming Qiang was Grand Master Chen Fa Ker (17<sup>th</sup> Lineage holder of Chen Tai Chi).

Master Liang also studied “push-hands” for two years with Master Li Ren Lian (Wu style master), Master Ker Peng Fei's teacher. Master Li Ren Lian studied Wu style Tai Chi with the Founder of Wu Style Tai Chi's son Wung Gung I. From Master Ker Pang Fei he learned Chen style Tai Ji, Wu style Tai Ji, and Hsing I. Since 1984 till now he has not stopped with Chen Tai Ji, Wu Tai Ji, and His I, as well as Qi Gong.

#### **Honors and Medals in Tai Ji**

In 1988 and 1990 Master Liang Jun Ping was the Tai Ji Martial Arts Champion of Shanghai.

#### **Previous Experience Training Tai Ji Teachers:**

Over 5 years Master Liang trained hundreds of students in Tai Ji while living in Shanhai.

During 1997-1998 he taught at the Shanghai Sports University Training teachers of Tai Ji. Between 100-150 people came from various cities in China and other countries, 2 lessons a week for one year. These newly trained teachers now teach Chen style Tai Ji throughout China and in other countries.

#### **Current Teaching Experience in Durban:**

Master Liang moved to Durban in 2001. In 2002 he began teaching Tai Ji at a studio on the corner of Umbilo and Wadley Road. He has since moved to temporary quarters at the Umbilo Congregational Church, where he teaches classes Monday-Thursday from 3:30pm-7:30pm. Tuesday morning, 9-10, and Friday and Saturday evening, 5:30-7:00, he teaches at The Spa at 130 Fairway Road in Durban North. He additionally provides free training in Qi Gong on Saturday mornings to his regular students. He currently has 30-35 students training with him.

#### **How Master Liang's Chen Tai Ji Training Differs from other Tai Ji teaching:**

Most people learn tai ji just from the exterior, obvious movements. They don't know anything about the inside movements. The inner tai ji movement is key to learning the authentic Chen style tai ji, and is very involved. It includes an understanding of Chinese medicine, and how to exercise in stages the muscles, bones, joints, internal organs, etc. so the entire body gets stronger.

To accomplish this one learns how to strengthen each part of the body through practicing and understanding the deeper aspects of the tai ji movements, not just copying the external movements. One learns why each of these exercises were developed and why they are still practiced after so many hundreds of years. Each movement and each part of the movements are specific to different organs and aspects of the entire body.

For a student to become a teacher they must first know what to teach another student.

Second they must know how each student can improve—so they must be able to identify how each individual student can grow and progress.

Teachers must also find a way to teach the person how to train by themselves with the way that is best for that individual student

So first the future teacher must learn the movements, must learn to see the students' movements to see how the student can improve their movement, and then how the student can find the idea of training by themselves. Eventually each student leaves the master and must be able to train on their own. Only then is a teacher able to teach other people, who are all different.

Tai Ji is not just about the movement. It's about knowledge of Tai Ji. The external movements are hiding the internal movements, i.e. what the body does inside. The future teacher must learn how to see the internal movements, how to feel these movements themselves, and how to know the feeling the students have inside themselves. This takes years of training, and most people don't have any ability to do this otherwise. In the first place feeling the energy yourself is difficult. People tend not to know what is really good or

bad for themselves. This is where the real Tai Ji tradition from China is so important. Most Western students (and teachers) only know the external movements, even if they know them well. The real Tai Ji movement is from the mind. The inside movement is expressed in the outside movements, and one can only learn this by training under a genuine Tai Ji Master.

In real Tai Ji one uses the mind to focus the movement, and use the clearer mind to lead the movement. It is not just about the qi moving inside the person; it's about how to teach the mind to control the movement—this is key point: One learns in your mind to make the mind control the movement. Must also learn mediation and qi gong to help the mind become more clear more quickly—from more clear mind one can better learn how to control the movement. Meditation is without movement. In proper meditation one keeps the same level of concentration constantly. In sitting meditation it is difficult to maintain the same level of concentration steadily—but in tai ji the movement keeps you focused, so the meditation practice is much more successful. Tai Ji has up and down, side to side, plenty of change of the movement—mind can't relax too much and get distracted. Change of speed—quick and fast, open and closing movements, firm and gentle movements, make the mind stays focused.

Yang style Tai Ji is much simpler, much easier to learn, much softer, with less exercise. Yang style developed in the last 100 years from the Chen Style as an easier version. Chen style Tai Ji is the original, proper form of tai ji—all the others came from it.

Chen style has more circular movements—much more strenuous, much stronger movements than other tai ji.

Why is yang style so easy to learn? Because it leaves out the intricate movements of chen style. If you learn the chen style you can learn other forms much more easily. Chen is much more about strength, health, power. Chen has much longer history—yang style only started about 100 years ago. Chen style from more than 500 years ago, from the Chen family. Before that time the practice has an even a longer history, dating back thousands of years, when Chen style was more of a secret tradition.

*Yang form is more easy for older people. Chen style is good for all ages, young and old.*

The Chen style Tai Ji taught by Master Liang contains, in the first phase, 83 movements. The program proposed for the Sports and Recreation Department trainees will include, in the first year, concentration on just the first 15 of these 83.

1-15 is the basic set of movements, and contain within them the fundamental exercises and movements that make up the later movements. If these first fifteen are mastered, the later movements (i.e. 16-83) become much easier to learn and practice correctly. So it is important to spend time working on the first 15 movements. There are many aspects to these. First one learns just the exterior movement. Secondly one must learn the inside movement—which is learning how to get the qi movement inside. After this one begins to learn the yi (the mind controlling the movement, the mind thinking the movement), then after lots of work this can change to the shen (calm, clear, clean mind that sees everything clearly), etc. The Chen style Tai Ji system has many steps further than this that a student can learn.

1	起势	( beinning of tai ji )
2	金刚捣碓	( king kong mailed fist )
3	懒扎衣	( grasp sparrow`s tail )
4	六封四闭	( withdraw and push )
5	单鞭	( single whip )
6	金刚捣碓	( king kong mailed fist )
7	白鹤亮翅	( white crane spreads wings )
8	斜行拗步	( walk and twist step )
9	初收	( fist conclusion )
10	前蹬拗步	( kick forward and twist step )
11	斜行拗步	( walk and twist step )
12	再收	( second conclusion )
13	前蹬拗步	( kick forward and twist step )
14	掩手红捶	( hidden hand pouch )
15	金刚捣碓	( king kong mailed fist )
16	披身捶	( opponent with fist )
17	背折靠	( bending back and shoulder-strike )
18	青龙出水	( blue drangon flies up from water0
19	双推水	( push with both hands )
20	三换掌	( three changes of plam )
21	肘底捶	( fist under elbow )
22	倒卷红	( upper arm rolls )
23	退步压肘	( backward and press elbow )
24	中盘	( middle stage )
25	白鹤亮翅	( white crane spreads wings )
26	斜行拗步	( walk and twist step )
27	闪通背	( fan through the back )
28	掩手红捶	( hidden hand pouch )
29	六封四闭	( withdraw andpush )
30	单鞭	( single whip )
31	云手	( waving hands like clouds )

32 高探马	( high pat on horse )
33 右擦脚	( rub right foot )
34 左擦脚	( rub left foot )
35 左蹬一根	( turn body and kick )
36 前蹬拗步	( kick forward and twist step )
37 击地捶	( hit ground with fist )
38 二起脚	( jump and kick twice )
39 兽头势	( animal head posture )
40 旋风脚	( hurricane kick )
41 右蹬一根	( turn body and kick )
42 掩手红捶	( hidden hand pouch )
43 小擒打	( small grasp and hit )
44 抱头推山	( embrace head and push mountain )
45 三换掌	( three changes of plam )
46 六封四闭	( withdraw andpush )
47 单鞭	( single whip )
48 前招	( front posture )
49 后招	( back posture )
50 野马分鬃	( mustang ruffling its mane )
51 六封四闭	( withdraw andpush )
52 单鞭	( single whip )
53 双震脚	( shake foot twice )
54 玉女穿梭	( fair lady works at shuttles )
55 懒扎衣	( grasp sparrow's tail )
56 六封四闭	( withdraw andpush )
57 单鞭	( single whip )
58 云手	( waving hands like clouds )
59 摆脚踏叉	( sweep leg and cross kick )
60 金鸡独立	( golden pheasant stangs on one leg )
61 倒卷红	( upper arm rolls )
62 退步压肘	( backward and press elbow )

63 中盘	( middle stage )
64 白鹤亮翅	( white crane spreads wings )
65 斜行拗步	( walk and twist step )
66 闪通背	( fan through the back )
67 掩手红捶	( hidden hand pouch )
68 六封四闭	( withdraw and push )
69 单鞭	( single whip )
70 云手	( waving hands like clouds )
71 高探马	( high pat on horse )
72 摆莲腿	( cross hands and sweep lotus with one leg )
73 指裆捶	( punch opponent's groin )
74 白猿献果	( white ape offers fruits )
75 六封四闭	( withdraw and push )
76 单鞭	( single whip )
77 雀地龙	( sparrow ground dragon )
78 上步七星	( step up to form seven stars of the dipper )
79 退步跨虎	( step back to ride tiger )
80 转身摆脚	( turn around and sweep lotus )
81 当头炮	( face opponent cannon )
82 金刚捣碓	( king kong mailed fist )
83 合太极	( conclusion of tai-ji )

## **ANNEXURE D**

### **Confirmation letter**

Mr B Naidoo

The Department of Education

41 Voortrekker Street

Ashley

3603

To: Dr U Sankar

Head of Department

Ethekwini Department of Health

Attention: Ms Leslie Coetzee

Re: The Tai Chi programme with street children

Dear Madam

Our telephonic conversation refers.

I would be glad to evaluate the Tai Chi programme with the street children. Could you arrange a meeting with me and your team to discuss the ethical issues surrounding this research proposal? It would be greatly appreciated if the details of the logistics could be outlined.



Kindly note that strict ethical principles will be adhered to and participants can be assured confidentiality and anonymity at all times.

I look forward to working with your team on this project.

Kind Regards

B Naidoo

## **ANNEXURE E**

### **Programme evaluation focus group (Discussion questions)**

1. What was your experience of the Tai Chi programme?
2. What did you appreciate about the programme?
3. How can the programme be improved?