PHYSICAL EXERCISE AND THE PSYCHOLOGICAL WELL BEING OF ADOLESCENTS WITH BEHAVIOUR DISORDERS

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A thesis submitted in partial fulfilment of the requirements for the degree, Doctor of Philosophy in Community Psychology at the University of Zululand

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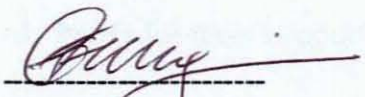
Date :15 August 2005

DECLARATION

I declare that **Physical exercise and the psychological well being of adolescents with behaviour disorders** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references



15/08/05

Mrs G T Mnguni

Date

Acknowledgements

I would like to express my sincere gratitude to the following persons or

institutions for their contributions to the success of this study:

Prof S Edwards, my supervisor, for his guidance, support and patience. His encouragement was much appreciated.

Adolescents who participated in this study

My family for their support, patience and understanding during this time

My friends for their encouragement and support.

Newcastle and Bergsig Schools of industry for agreeing to the implementation of my programme.

SUMMARY

Behaviour problems in class rooms are an old story that has and will continue to bother teachers for many years. In some cases children and adolescents with severe behaviour disorders are admitted in schools of industry. Schools of industry offer different support programmes but none of these look at physical exercise as a strategy to enhance psychological well being. This research was aimed at exploring the impact of physical exercise on the psychological well being of adolescents with behaviour disorders. Sixty adolescents from two schools of industry were randomly assigned into experimental and control groups. Both groups were pre and post tested on behaviour, feelings about the self, physical self perception and wellness scales. A physical exercise programme was administered to an experimental group.

Quantitative results reveal that adolescents who were exposed to the physical exercise programme showed general improvements in behaviour, feelings about the self, physical self-perception and wellness. Qualitative results indicated a decrease in smoking habits, absenteeism, aggression and cases of absconding. In the light of the above findings it can be deduced that physical exercise brought about enhanced self-esteem, self confidence, healthy interactions and social harmony among the adolescents. These attributes contribute positively to the psychological well being of an individual. This research does provide for the relative influence of physical exercise on the psychological well being of adolescents with behaviour disorders.

SUMMARY

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CHAPTER 1: INTRODUCTION

1.1 Introduction

There is nothing new about violent and disruptive behaviour in schools (Galloway, Ball, Blomfield & Seyd, 1982). Behaviour disorders in children are one of the most interesting and complex areas of study in psychology and special education (Epanchin & Paul, 1987).

"Children with behaviour disorders are those who chronically and markedly respond to their environment in socially unacceptable and/ or personally unsatisfying ways but who can be taught more socially acceptable and personally gratifying behaviour" (Kauffman, 1985, p. 23).

Apparently appropriate interventions can bring some hope in shaping behaviour in children and adolescents.

Department of Education (2001) advocates for support programmes for all learners who are experiencing barriers to learning in one education system instead of separating learners.

Inclusive education calls for one education system for all regardless of differences in learners, whether due to age, gender, ethnicity, language, class,

disability, HIV, behaviour disorders or other diseases. Inclusive education focuses on interventions in the form of support that should be given to individual learners who are experiencing barriers to learning.

Currently the education system has mainstream and special schools. In both mainstream and special schools there are learners who in one way or another experience behaviour disorders. In severe cases learners who are experiencing behaviour disorders are placed in schools of industry that cater for their specific needs. The appropriateness of removing adolescents from mainstream schooling has always been controversial (Lovey, 1992, p. 9).
The extent of success of the programmes offered by the schools of industry has not been adequately measured and supported by research.

Researchers such as Berger (2001) and Williams (1996) emphasise the value of physical exercise in promoting physical fitness and health of individuals in general. The value of various forms of physical activity, exercise and sport for the promotion of public health in general and mental health in particular has been emphasized in recent research and intervention programmes with recognition given to physical activity as a multi- faceted social enterprise (Edwards, 2004). The use of physical exercise as a medium for health promotion is based upon international research evidence for the general and mental health benefits of physical activity, exercise and fitness intervention (Edwards, 1999; 2001a; Fox, 2000; Williams, 1996).

Many problem behaviours can be viewed as a consequence of a failure to learn successful ways of dealing with the environment or as a result of acquiring inappropriate and deviant strategies for coping with life. This study focuses on the possible benefits of physical exercise on the psychological well being of adolescents with behaviour disorders. The belief carried here is that a psychologically well adolescent will manifest healthy behaviour

1.2 Adolescent mental health and behaviour disorders

Many children and adolescents, for reasons we do not fully understand, lack the essential social repertoire required to cope with social life in a satisfactory manner (Herbert, 1978, p.24). The fact that behaviour disorders are sometimes related to social, medical, psychological and/or legal problems has contributed to the failure to centralize administrative responsibility for children with behaviour disorders into a single service delivery system (Epanchin& Paul, 1987). There are also increasing signs that less than optimal mental well being is common in the population. Furthermore, mental well being is a critical element of quality of life (Biddle, Fox & Boutcher, 2000).

The mental health problems of children give rise to deviant behaviours which impede healthy social growth and development. Yet, few mental health professionals receive adequate training in understanding childhood disorders, and there have been few attempts in the literature to synthesize the

psychological, developmental and educational factors of variant behaviour (Clarizio & McCoy, 1983). In addition, there is a growing recognition of widespread mental malaise in the general public that is expressed as mild depression, low self-esteem, high stress and anxiety and coping (Biddle *et al*, 2000).

A community psychological model of mental health promotion, essentially views mental health promotion with primary, secondary and tertiary components of both prevention and promotion (Edwards, 2002). Mental health promotion involves both the promotion of positive health (mental, physical and social) and the prevention of ill health (Tannahill, 2000). Teachers have spent their energies on correcting deviant behaviour rather than promoting positive health. It seems that schools have spent more time putting children and adolescents with behaviour disorders as far away from society as possible instead of designing intervention programmes aimed at giving support. Coleman (1980) focuses on the need for support of young people who are passing from the dependency of childhood to the accountability of adult life.

Integrating mental health promotion strategies into an effective primary health care system offers a viable, contemporary prospect for reaching the goal of healthy minds in healthy bodies in healthy communities and society (Edwards, 2002a; 2004; WHO, 1986). Mental, physical and social aspects of health are inextricably interlinked (Tannahill, 2000).

To date, little attention has been paid to the contribution of exercise in the prevention and treatment of the increasingly burgeoning problem of mental disorders, illnesses and general mental malaise (Biddle *et al*, 2000). High self-esteem is associated with healthy behaviours – such as not smoking, lower suicide risk, greater involvement in sport and exercise and healthier eating patterns (Torres & Fernandez, 1995).

Perhaps it is time to acknowledge the fact that the need for treatment in psychiatry can never be fully met by health professionals (Biddle *et al*, 2000). Community psychology is often viewed as the answer to many of the social and psychological problems that exist in South Africa (Pillay, 2003, p. 261). The Truth and Reconciliation Committee (TRC) constituted to rehabilitate those who suffered the injustices of the apartheid regime is one example of such view. In some countries, the evidence for exercise and mental health has already been accepted and formalized into delivery systems (Biddle *et al*, 2000). The general public burden of inactivity is high in adolescence and activity promotion could provide a cost effective strategy for public health improvement (Morris, 1994).

There is an ancient African saying that it takes a village to rear a child (Ivey, Ivey & Simek- Morgan, 1997; Ngubane, 1977). The IsiZulu speaking people describe this process as "umuntu umuntu ngabantu", which literally means a person is a person through others (Edwards, 2002, p. 5). This implies that it is up to the

family and community to instill values and healthy habits in its young for the mental well-being of every member of society.

Secondary prevention has mainly been restricted to cardiac rehabilitation (Biddle *et al*, 2000). The use of exercise has been slow in secondary prevention which, according to Edwards (2002), reduces prevalence of illness, disability and handicap in persons at risk in disempowering contexts, such as children and adolescents in schools of industry as this study purports to research.

1.3 Physical exercise for improving mental health and behaviour

Although it is clear that the case of exercise in reducing physical illness is well established (Biddle, *et al*, 2000) the amount of physical activity at school and in the home among the children and adolescents has declined due to the use of labor saving aids (Fox, 1990). Various researches 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, Kremer, Meade, Graham & Dudgeon, 1998).

Psychological explanations of why exercise enhances psychological well being include the following: enhanced feelings of control, improved self-concept, self-esteem and self-efficacy and more positive social interaction (Edwards, Basson,

& Edwards, 2004; Scully *et al*, 1998). Moreover exercise 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 school or work, alcohol abuse, anger, confusion, depression, headaches, hostility, phobias, psychotic behaviour, tension , type A behaviour and work errors (Weinberg & Gould, 1999).

Gruber (1986) concluded that the effect of activity programmes was positive particularly for those initially low in self- esteem. When comparing the effects on the range of mental benefits, Calfas and Taylor (1995) found that the strongest changes were for self- esteem, self- concept or self-efficacy with nine out of ten studies revealing positive results.

Epanchin and Paul (1987) contend that among the major challenges to professionals in understanding and providing services for children with behaviour disorders, the following issues have been especially problematic: the role of values in defining normalcy and the standards for acceptable behaviour, communication problems, the often poorly defined responsibilities among the different service systems that provide special education and treatment, and the imperfect science that guides professional practices.

In relation to clinical conditions, physical activity, exercise and sport should not be seen as competing with other strategies for promoting psychological well being, but rather as being an important addition to a range of therapeutic options (Biddle *et al*, 2000). Edwards *et al* (2004) compared the psychological well being of sixty university hockey players, twenty seven health club members and one hundred and eleven non-exercising students. Findings revealed that both hockey players and health club members were generally more psychologically well and had more positive physical self-perceptions than non- exercising students. Previous research has established that health club members are more mentally healthy and / or psychologically well than non- members (Edwards 2002).

The evidence is sufficient to conclude that physical exercise is an effective medium for developing a positive self in children, is particularly effective for those with low self-esteem and has greatest potential when presented in a style that will encourage mastery and self development (Biddle *et al*, 2000, p108).

1.4 Statement of the problem

Whether all behaviour is lawful and can ultimately be understood scientifically or whether much is a function of free will, so that choices can never be predicted with certainty, is a philosophical question to which scientists and scholars give very different answers (Epanchin & Paul, 1987). Coleman, Butcher and Carson

(1988) maintain that the best criteria for determining the normality of behaviour is not whether society accepts it, but rather whether it fosters the well being of the individual and ultimately, of the group.

In the past decade, there has been increasing concern about the behaviours that children and adolescents act out in schools (Millman, Schaefer & Cohen, 1980). Traditional school intervention programmes such as scouts, brownies, girl guides and physical training /education made some difference in shaping behaviour in children. These programmes focused on building and introducing children and adolescents to adult roles. They relied strongly on transmitting attitudes, values and skills that aimed at shaping behavour and facilitated the integration of youth into society. These intervention strategies were replaced by programmes that focused more on teaching job skills. Consequently a paradigm shift in teaching was conceived - from life and coping skills to job related skills. Therefore, there was a sharp increase in the prevalence of behaviour disorders in children and adolescents.

In view of the above problem the South African Department of Education has recently introduced Outcome Based Education (OBE) which incorporates the teaching of life skills education in the foundation phase (Edwards & Louw 1998). This becomes Life Orientation learning area in the intermediate and secondary phase. From grades ten to twelve there is no continuity with this learning area as

it is replaced by Guidance. Guidance as a subject focuses more on career information and orientation.

Apparently the intervention programmes in schools are not enough to offer the necessary support to children and adolescents with emotional and behaviour disorders. It has become evident over the years that the traditional individual approach to psychotherapy is not adequate to deal with psychological problems in the South African context (Pillay, 2003). The concern expressed here is that public health personnel ranging from teachers to public health educators have not done enough to encourage children and adolescents to engage in physical exercise as a form of health promotion.

1.5 Aims of the study

1.5.1 To determine the relative impact of physical exercise on the psychological well-being of adolescents with behaviour disorders

1.5.2 To compare the psychological well being of adolescents with behaviour disorders who will be engaged in a physical exercise programme to that of the adolescents with behaviour disorders who will not be engaged in this programme.

1.6 Hypothesis

It is hypothesized that adolescents who participate in the exercise programme will rate higher on a psychological well being scale and they will show improved behaviour compared to the control group.

1.7 Method

A total of sixty adolescents from two schools of industry participated in this research. Only thirty adolescents engaged in the exercise programmes and the other thirty constituted the control group.

1.8 Clarification of terms

1.8.1 Behaviour disorders

"A universally accepted definition of behaviour disorders has yet to be developed" (Brown, McDowell & Smith 1981). Behaviour disorders are generally defined as excessive, chronic and deviant behaviours ranging from withdrawal to aggression and commonly described as a behaviour that violates some cultural norm or others' expectations of what is considered appropriate or normal (Apter & Conoley, 1984). The term 'behavioural disorder' has greater utility for

education as it is not associated exclusively with a particular theory of causation and therefore with any particular set of interventions (Epanchin & Paul, 1987).

1.8.2 Physical activity

An umbrella term describing any bodily movement produced by skeletal muscles resulting in energy expenditure (Biddle *et al*, 2000; Williams, 1996).

1.8.3 Physical exercise

A subset of physical activity that is volitional, planned, structured, repetitive and aimed at improvement or maintenance of an aspect of fitness or health (Biddle *et al*, 2000; Edwards, 2002). To some, exercise includes just about any form of physical exertion, from walking to work, to planting the garden. Others, however, believe that the term exercise is reserved for vigorous aerobic activity or vigorous resistance training (Seraganian, 1993). For the purposes of this study physical exercise refers to planned and structured bodily movements aimed at improving psychological well being with an ultimate aim of changing negative behaviours in adolescents.

1.8.4. Mental health promotion

WHO (1986) defines health promotion as the process of enabling people to increase control over, and to improve their health. Mental health promotion is any action taken to maximize mental health and well being among populations

and individuals. (Saraceno & Saxena, 2002) view mental health promotion as a process promoting the value of mental health and improving the coping capabilities of individuals rather than amelioration of symptoms and deficits.

1.8.5 Psychological well being

WHO (1946), defined health in terms of not merely the absence of disease, but also a state of complete physical, mental and social well being. In the context of this paper 'psychological well being' implies a state of positive psychological health or psychological wellness. "In general, wellness can be conceptualized as the positive component of optimal health and psychological wellness conceptualized as the positive component of psychological health. For example health may be experienced as an energized feeling of well-being leading to community psychological conceptualizations such as the Chinese term *chi* or IsiZulu word *impilo*" (Edwards, 2002 p. 31).

1.9 Plan of study

Chapter 1

This chapter gives an outline of the study. It includes an overview of the problem to be investigated. The preliminary literature study gives a brief analysis of

literature on the topic. In the statement of the problem, a question is formulated and the aims of the study are stated.

Chapter 2

Chapter 2 gives a theoretical background to the study. This chapter presents literature review.

Chapter 3

This chapter provides a description of the empirical investigation to this research.

Chapter 4

The results of the investigation are analysed and interpreted in this chapter.

Chapter 5

The main findings of the investigation are discussed, conclusions are drawn and the recommendations are made.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

According to Newton (1988) the aims of health promotion are to reduce inequalities in health and increase access to health care, to develop environments conducive to health and to strengthen community and individual resources to help maintain health. Among strategies of health promotion are physical activity and exercise. Although not so popular, these are still effective in maintaining health in populations of all age groups. Physical exercise may be of particular importance during adolescence when excessive accumulation of fat may contribute to health problems (Millstein, Petersen & Nightingale, 1993). Adolescence is a stage characterized by rapid growth and development which makes it important at this stage to inculcate positive health behaviours. Millstein *et al* (1993) argue that if we limit our views of health to physical illness, adolescents fare pretty well in this aspect.

Psychological well being is influenced by personal, interpersonal and environmental factors and invariably changes within the context of life stages and developmental tasks (Edwards, Ngcobo & Pillay, 2003). Factors such as self-acceptance and purpose in life determine how one looks at the self and whether a person has adopted a positive or negative view of the self. A child who has a behaviour disorder, however is one for whom the behaviour state or disorder condition persists (Epanchin & Paul, 1987). It is better to promote psychological

wellness than to prevent factors impeding wellness. There are many routes to psychological wellness and methods to promote it (Edwards, 2002). The focus of this research is on physical exercise with special interest on its impact on psychological well being of adolescents with behaviour disorders.

2.2 Behavioural disorders in children and adolescents

Definitions of behaviour disorders differ among child behaviour specialists, reflecting different ways of understanding and labeling children's behaviour problems (Epanchin & Paul, 1987, p. 15). It is generally agreed that the goal of behavioural science is to acquire knowledge that would enable us to predict and control behaviour (Erickson, 1987). Epanchin and Paul (1987) note that one of the major challenges to professionals concerned with children with behaviour disorders has been the development of an adequate definition. Different types of definitions serve different professionals and scientific purposes and reflect different perspectives.

Herbert (1978) states that antisocial ('abnormal') behaviour in children and adolescents is not different from prosocial ('normal') behaviour in its development, in its persistence and the ways in which it can be changed. Behaviours judged to be problematic are typically considered deviant from some standard, harmful to the individual and inappropriate (Wicks-Nelson & Israel, 2003).

Bower (1960, p. 28) developed a list of behaviour characteristics which he believed identified the emotionally disturbed child. A display of one or more of the following characteristics either to a marked degree or over a period of time indicates emotional disturbance in a child;

- An inability to learn which cannot be explained by intellectual, sensory or health factors.
- An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
- Inappropriate types of behaviour or feelings under normal conditions.
- A general, pervasive mood of unhappiness or depression.
- A tendency to develop physical symptoms, pains or fears associated with personal or school problems.

Reviewing classification studies Quay (1979) concluded that problem behaviours in children can be categorized under four major headings: *conduct disorder*, *anxiety withdrawal*, *immaturity* and *socialized aggressive disorders*.

- *Conduct disorder* involves aggressive behaviour such as fighting; temper tantrums, defiance, disobedience, destruction of property, uncooperative and resistive behaviour, oppositional disorder, irritability, attention seeking, inattentiveness, impulsivity, distractibility, and others.
- *Anxiety – withdrawal* includes such behaviours – besides anxiety and withdrawal – as tenseness, shyness, seclusiveness, lack of

friends, depression, feelings of inferiority, low self-confidence, and hypersensitivity.

- *Immaturity* suggests a general lack of adaptive skills and is reflected in such behaviour as attention deficits, daydreaming, clumsy and uncoordinated behaviour, absentmindedness, passivity, low initiative, lack of interest, inability to complete tasks, and so on.
- *Socialized aggressive disorder* involves social maladaptation: having 'bad' companions, stealing in the company of others, belonging to a gang, showing loyalty to delinquent friends, keeping late hours, and being truant from home or school.

Children are referred to schools of industry because of their conduct. The focus on admission is the child or adolescent's relationship to social norms and rules of conduct. Conduct disorders involve misdeeds that may or may not be against the law. Delinquency and juvenile delinquency are legal terms used to refer to misdeeds involving violations of the law committed by minors (Coleman *et al*, 1988).

Attempts to help the individual imply belief in a psychological model, based on the view that the individual's disruptive behaviour results from problems which can be treated (Galloway *et al*, 1982). Wissing and van Eeden (1997) indicate that qualities that characterise general well being include having an interest in the world and the motivation to carry out activities on a behavioural level.

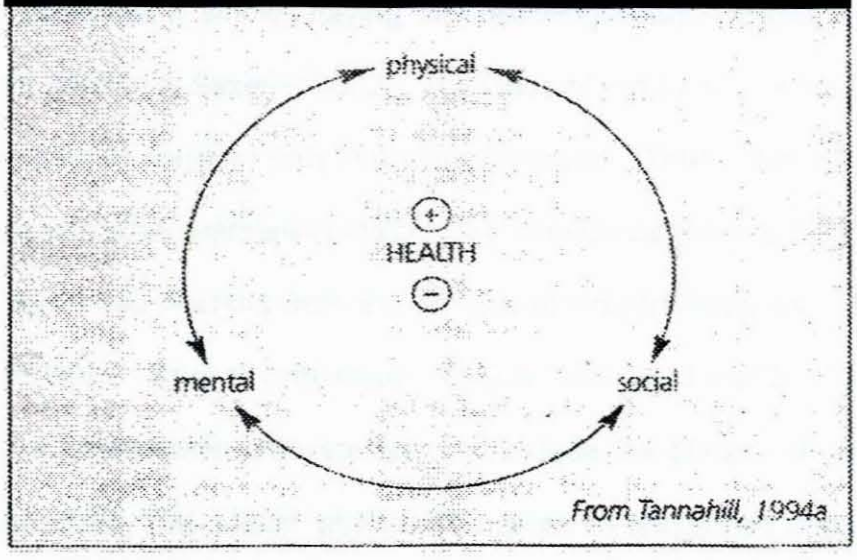
Consequently, it would seem that psychological well being can be conceptualized with reference to affective, physical, cognitive, spiritual self and social processes. Hence, similar to infancy it is useful to look at adolescence as a stage of human development that has both great importance for the development of the personality as well as certain irreversible influences (Lovey, 1992, p. 4).

Department of Education (2001) aims at enabling education structures, systems, learning methodologies, curricula and the environment to meet the needs of all learners. More emphasis is placed on the educational and social context, in which the pupil must work and play, than on the individual himself/herself (Galloway *et al*, 1982). Coleman *et al*, (1988) contends that therapy for the conduct – disordered child is likely to be ineffective unless some means can be found for modifying the child's environment.

2.3 Health

WHO (1946) defines health as a state of complete physical, mental and social well being, and not merely the absence of disease or infirmity. It should be noted that mental, physical and social health can affect each other, that social circumstances can affect mental and physical fitness (Tannahill, 2000). The following figure represents the WHO (1998) definition of health:

FIGURE 1



Apparently mental, social and physical aspects of life are not mutually exclusive. It is against this background that this research purports to prove that physical fitness influences mental fitness. Consequently social fitness as manifested in behaviour will indicate positive health as reflected in his interactions with others. Positive health comprises physical, mental and social well being and fitness (Tannahill, 2000). The focus should be on positive health education which is an intervention strategy to promote mental health and health in general.

2.4 Prevention and promotion in mental health

Mental disorders affect the functioning of the individual, resulting in not only enormous emotional suffering and diminished quality of life, but also alienation,

stigma and discrimination. This burden extends further into the community and society as a whole, having far- reaching economic and social consequences (Saraceno & Saxena, 2002). The issue of stigma is a serious one especially with regard to learners with behaviour disorders. These learners would not compete or visit other learners in mainstream schools as these schools want nothing to do with these learners from the schools of industry because of the stigma attached to them. This discrimination impacts badly on the integration of these children and adolescents into society. To reduce the burden of mental disorders, it is essential that greater attention be given to prevention and promotion in mental health at the level of policy formulation, legislation, decision-making, resource allocation and the overall health care system (Saraceno & Saxena, 2002).

Prevention is concerned with avoiding disease while promotion is about improving health and well being (Hodgson, 1996). Prevention and promotion of health may involve similar activities for example physical exercise can be used as a preventive as well as promotional strategy. The target group determines whether the strategy to be employed is preventive or promotional.

The difference between mental health prevention and promotion applications is that prevention programmes focus more on groups that are at risk of having mental disorders while promotion programmes targets the general population developing age appropriate life skills (Edwards, 2002). Preventive and promotional elements can be present within the same programme and hold

different meanings for two groups of the targeted population (Saraceno & Saxena, 2002). Both illness prevention and health promotion depend on the use of health education for provision of information and knowledge to the target individuals and communities. Empowerment of the individual and emphasis on rationality and free choice are also necessary for behaviour change (Thorogood, 1992).

Caplan (1964) drew a distinction among primary, secondary and tertiary prevention strategies in mental health. Edwards (1999, p. 14) notes that the distinction becomes more subtle in terms of the intention and goal of the intervention and outlines this distinction as follows:

- Tertiary prevention is indicated prevention to reduce illness, disability and handicap typical in persons at high risk e.g. lithium carbonate for bipolar affective diagnosed in a person with extensive genetic history.
- Secondary prevention is selective prevention to reduce prevalence and /or duration of illness of persons at risk e.g. interventions to reduce harmful drugs during pregnancy.
- Primary prevention is universal intervention to reduce incidence of illness/ disorder in persons of potential risk e.g. safe – sex campaigns and smoking cessation intervention.
- Primary promotion is universal intervention to promote and improve health e.g. walk/ run for life campaigns, survival/life skills instruction, children's enrichment programmes, parent effectiveness training, community

counseling, self-help bibliotherapy. This interaction constitutes the greatest challenge to researchers and policy makers to actively improve humanity in health promotion of all persons and communities but particularly in terms of basic need satisfaction and development of survival skills.

- Secondary promotion refers to interventions to improve human rights, empowerment and advocacy for health promotion for all persons and communities but especially in cases of disempowerment. Here the emphasis is on empowerment and human rights activism in terms of balanced interventions that ensure harmony
- Tertiary promotion refers to interventions to improve meaning and social self realization and actualization and other higher order survival needs.

In general health promotion is concerned with improving attitudes and behaviour that enhance well being (Edwards, 1999). WHO (1984) defined health promotion as the process of enabling people to increase control over and to improve their health. Health promotion programmes are assigned for an individual, groups or communities with an aim to influence well being. There are many factors that influence well being, health promotion programmes are holistic and contextual as well as goal and skill orientated (Edwards, 1999).

The emphasis of health promotion is on wellness and quality of life of the individual, general population, social and environment (Hodgson, 1996). Positive

health education as an intervention strategy to promote mental health can play an important role in the enhancement of well being. Tannahill (2000) looks at positive health education as having two strands: first, a focus on positive health objectives (such as encouraging physical activity on the basis of benefits to well being and fitness); second, investment in fostering positive health attributes. The latter author identifies these attributes to include self-belief, self-confidence, a healthy level of self-esteem, and a set of empowering skills – decision making and assertive skills.

Physical exercise can be understood in this context as aiming at enhancing well being and fitness as well as boosting positive health attributes. It can be argued that such attributes not only help protect against unhealthful behaviour and ill health, but also inherently contribute to a sense of empowerment and life control, and thus to mental well being (Tannahill, 2000).

2.5 Physical exercise

Berger (2001) contends that regular moderate intensity, exercise interventions involving non competitive activity, rhythmic abdominal breathing of twenty to thirty minutes' duration in comfortable, predictable contexts as with Tai, Chi, Yoga, aerobic exercise and weight training seem particularly meaningful, if the type intensity and the intervention are tailored to suit the particular exercisers.

Williams (1996, p.114) distinguishes between structured and unstructured physical activity: "Unstructured physical activity includes many of the usual activities of daily life such as walking, climbing stairs, cycling, dancing, gardening and yard work, various domestic and occupational activities. Structured physical activity is a planned program of physical activities usually designed to improve physical fitness". Although unstructured physical activity is usually of low intensity it does help reduce the development of certain diseases. One should realize that both moderate unstructured physical activity and moderate structured physical activity, as exercise, independently convey health benefits (Williams, 1996).

Recently, there have been many changes to meet the challenges of modern civilization. Schools have tried hard to keep up with these changes. Unfortunately one of the programme that had to give way to the 'more important' and examinable subjects was physical education. In many South African secondary schools physical education is no longer taught as learners are now being prepared for the corporate world, therefore subjects such as mathematics, accounting and others receive more attention. Some primary schools still have periods for physical education or physical training, some do not. Even in those that still teach physical education, it is not treated with the seriousness it deserves. Exercise sessions and programs should provide distraction from worry and anxiety- inducing thoughts and provide the exerciser with a sense of a mastery and achievement (Biddle *et al*, 2000).

A vast majority of studies examining the role of exercise on psychological well being and mood, support the notion that exercise will improve well being and mood states such as anxiety, stress, depression, tension and fatigue (Seraganian, 1993, p. 362). Research concerning the benefits of physical exercise on health is well documented. In a general sense, physical fitness is defined as a set of abilities individuals possess in order to perform specific types of physical activity (William, 1996, p. 14). There has been much debate into how the older generation lived healthier lives than the present generation. One example that has been given concerning the lifestyle of the older generation is that they walked long distances as technology was not as advanced then.

Today's living promotes sedentary lifestyles with around forty percent of the middle aged and elderly population taking part in moderate to vigorous physical activity either infrequently or not at all (Biddle *et al*, 2000). Our technologically advanced society has become affluent as well as sedentary and with this advanced form of civilization has come the recognizable need for physical activity (Daughtrey & Woods, 1971, p. 21). Adolescents in particular are hit hard by this advancement in technology. There are many alternative sedentary behaviours that compete with physical activity for the adolescent's time (Millstein *et al*, 1993, p.221). Contemporary adolescents' most favoured form of recreation is typically socialization, watching videotapes and eating. While it is true that physical activity can be performed free of charge, it is also true that these activities require

an individual to manage his or her own programme. Some supervision is necessary initially until some form of responsibility is achieved by adolescents. It is therefore the responsibility of a health promoter to put some supervision measures in place to ensure that physical activity is sustained.

An adolescent's physical ability and skill provides considerable self-esteem. Arnold (1968) contends that physical activities do not only provide a means by which young people can come together but serve as a vehicle through which the adolescent can be helped to social adjustment. Exercise initially allows us to become a bodily centred moment in the world. This here and now experience and presence, are a precondition for meaning and transcendence (Edwards, 2002, p.43).

2.6 Psychological well being

A positive healthy lifestyle is based on a wellness model that views the individual as a whole (William, 1996, p.5). The importance of a healthy mind and body interrelationship cannot be overemphasized. Positive mental health and /or psychological well being have been the subject of extensive research (Cowan, 2000; Edwards, 2003a; 2003b). Psychological well-being is influenced by personal, interpersonal and environmental factors, and invariably changes within the context of life stages and developmental tasks (Edwards *et al*, 2003).

In the past adolescents have enjoyed care-free years in as far as diseases are concerned. Nowadays with dreaded diseases such as HIV/AIDS focus has to be turned to them in ways never thought of before. Research has demonstrated that mental health can be promoted through the application of different strategies such as physical exercise. An objective, standardized scale of psychological well being was developed by Ryff (1989). This scale includes six dimensions of psychological well being in self acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth.

Health is an integral part of mental well being and health promotion plays an important part in enhancing psychological wellbeing. This research has identified physical exercise as a health promoting strategy to enhance psychological well being. The benefits received from exercise and training will vary among

individuals, and are dependent upon age, current fitness level, and type of exercise as well as the frequency intensity and duration of the workout (Lindsey, Jones & Whitley 1974, p.25).

Adolescents find it difficult to accept their bodies and themselves because they are at a stage of development where they are highly critical of themselves. 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, performance in all areas, career expectations and success (Gouws & Kruger, 1994).

2.7 Adolescents and physical exercise

'Early man was primarily concerned with survival. His life was hard and most of his waking hours were devoted to hunting for food. Formal and informal education consisted of learning the physical skills necessary for self-preservation' (Daughtrey & Woods, 1971, p.19). These authors further contend that in the1940's American physical education attempted to improve youth physical fitness for war. The twenty first century is characterized by advanced technology which eliminates opportunities for physical activity. In general, the results of research with children have supported the notion that children exhibit the same health- risk factors as adults (Seraganian, 1993, p.310).

Throughout the twentieth century schooling has become increasingly central in preparing young people for adulthood. Physical education programmes in schools played an important role in inculcating positive attitudes. Physical education programmes are primarily interested in the development and maintenance of high levels of health, not just average health, but superior health, not just physiological health, but mental and emotional health as well (Daughtrey & Woods, 1971). Schools are important context for adolescent health promotion because of the amount of time adolescents spend there (Millstein *et al*, 1993, p.27).

With the outbreak of HIV/AIDS, the South African government has introduced a Life-skills based HIV/AIDS programme to be taught in schools. This programme aims at transmitting life skills such as assertiveness, decision-making, conflict management, negotiation and others. The programme was meant to be delivered to learners in activities designed to promote physical activity. It does not happen this way as many teachers are not properly trained to implement the programme accordingly. The programme is one health promoting strategy, there are many others, such as physical exercise as intended to be promoted by the present research.

Fox (1990) states that it is known that a physically active lifestyle is healthy but relatively few people actually are benefiting from it. South African society has seen members of the working class population joining health clubs recently.

These are people who can afford these facilities. Previously only adolescents from well off families enjoyed this privilege. Such facilities provide opportunities for various forms of physical exercise as well as social support for members, which factors are known to be related to mental health (Weinberg & Gould, 1999). Edwards' (2002) research findings reveal that health club members are more psychologically well and significantly less stressed than non-exercisers. Self acceptance is one construct which is important in bringing about a well balanced and a psychologically well human being.

2.8 Self - acceptance and self - talk

An adolescent is critical of his or her body image. "The young adolescent is frequently fascinated with and critically appraising of, his or her body. Is it the right shape? The right size? Is he or she coordinated or clumsy? How does he or she compare to the ideal?" (Craig, 1979, p. 427). If the appraisals are positive, well and good, but more often than not, these appraisals tend to be negative in the majority of adolescents. Self -acceptance does not come easy with many adolescents who are highly critical of themselves.

With the development of formal-operational thought, adolescents become able to describe the self more abstractly (Millstein *et al*, 1993, p.18). The extent to which a child accepts himself or herself is directly related to the extent to which he or she is accepted by others (Duminy, Dreyer & Steyn, 1990, p.106). As peers play

an important role at this stage, an adolescent needs to feel accepted by his or her peers. This is revealed by his or her willingness to conform in order to belong. Positive statements about the self enhance mental well being. Behaviour is influenced by the kind of self-talk an individual makes about the self. If, for example an adolescent experiences problems with making friends it is likely that he or she might start negative self – statements about the self such as, 'everyone hates me'. These negative self – statements may result in negative behaviour.

2.9 Relations with others

The basic self is acquired within the family early in life. At the beginning of life, the child must become aware that he or she is distinct and separate from other people (Samuels, 1977, p.67). One cardinal feature of the adolescent's relations with his parents is striving for independence, self- reliance and autonomy (Gouws & Kruger, 1994, p.110). An adolescent must develop trust in his or her parents in order to feel safe in his or her environment. Parents are the ones who reflect the earliest appraisals. Parents are ranked high as 'significant others' by adolescents in research findings (Purkey, 1970, p.31).

An adolescent who has healthy relationships with his or her parents is likely to have healthy relationships with peers. It depends on the kind of meaning an adolescent ascribes to relationships with parents, objects and other people.

It seems that parenting styles have a marked influence on personality development and can hamper or enhance the development of independence and self-reliance in children (Gouws & Kruger 1994, p.113). The authoritative parental style fosters a democratic relationship based on mutual respect and love. The following description by a sixteen year old girl is typical of such parents:

"I guess the thing I think is great about my parents, compared to those of a lot of kids, is that they really listen. And they realize that eventually I'm going to have to live my own life – what I'm going to do with it. A lot of the time when I explain what I want to do, they'll go along with it. Sometimes, they'll warn me of the consequences I'll have to face if I'm wrong, or just give me advice. And sometimes, they just plain tell me no. But when they do, they explain why, and that makes it easier to take" (Conger, 1979, p. 49).

Research has shown that such parents are most likely to foster the development of confidence and self-esteem, social competence, autonomy and close, positive relations between parent and child (Mussen, Conger, Kagan & Huston, 1990)

Authoritarian and autocratic parents do not feel an obligation to explain the reasons for their directives, and they view unquestioning obedience as a virtue (Elder, 1980). Adolescents with autocratic parents are less likely to be self-reliant and able to think and act for themselves, probably because they are not

given enough opportunities to test their own ideas or take independent responsibility and because their opinions have not been viewed as worthy of consideration(Lewis, 1981).

Laissez-faire parents who are permissive, neglecting, or who assume a false and exaggerated egalitarianism, also do not provide the kind of support that adolescent need (Mussen, *et al,* 1990). It seems that the authoritative parental style encourages responsible independence in many ways.

A young man or woman who has not learned how to get along with others of the same sex and to establish satisfactory heterosexual relationships by the time he or she reaches adulthood is likely to face serious obstacles in the years ahead (Conger, 1979). Peers play a crucial role in the psychological and social development of most children and adolescents (Mussen, *et al,* 1990). The need to conform to peers may vary with socioeconomic background, relationships with parents and other adults, school environment, and personality factors (Steinberg & Silverberg, 1986). Consequently being accepted by peers in general, and especially by one or more close friends, may make a great difference in the young person's life (Mussen, *et al*, 1990).

2.10 Adolescents and health promotion

The term "adolescence derives from the Latin verb *adolescere* meaning "to grow up" or to grow to adulthood", thus referring to a development phase in the human life cycle that intervenes between childhood and adulthood (Gouws & Kruger, 1994, p.3). It is characterised by drastic biological, cognitive and psychosocial changes (Millstein *et al*, 1993). This is the time when teenagers are learning who they are first in the context of small groups and friendships and later as thoughtful, self-critical individuals.

Why is health important now? Gouws and Kruger (1994), state that adolescents are usually healthier than people in other phases of life. Although adolescents are generally healthier, nowadays this positive health status has to contend with severe health hazards such as HIV/AIDS. Although this disease is transmitted through other forms as well it is mainly transmitted through sexual intercourse, particularly in adolescence, a period of increasing physical and sexual maturity (Millstein *et al*, 1993, p.13)

It is contended that biological, cognitive and psychosocial changes provide a wealth of developmental opportunities for adolescents to engage in behaviours that lead to health risks on the one hand, or to develop a healthy lifestyle on the

other (Millstein *et al*, 1993). Adolescence may be an opportune time to prevent the onset of health damaging behaviours. 'Physical Education programs are primarily interested in the development and maintenance of a high levels of health- not just average health, but superior health, not just physiological health but mental and emotional health as well' (Daughtrey & Woods, 1971, p.19).

Throughout the twentieth century schooling has become increasingly central in preparing young people for adulthood. Physical education programmes in schools played an important role in inculcating positive attitudes towards health improvement. A majority of school programmes for behaviour disorders has been designed and exist primarily in the elementary schools. Secondary programmes have been adaptations of these programmes into the high schools (Brown *et al*, 1981).

Different programmes satisfy different needs in children as they progress through different developmental stages. Specific milestones are attained in different developmental stages. Some are more important than others such that if a certain milestone is not mastered at a specific stage a behaviour disorder is likely to develop in some children. Behaviour disorders in adolescence need to be studied against the background of different developmental stages, if a clear picture has to be attained

2.11 Individual developmental change

2.11.1 Biological development and physical self perceptions.

The first phase of adolescence is puberty. Van den Aardweg and Van den Aardweg (1988) also refer to the puberty phase as preadolescence and state that this is the period during which an individual's reproductive organs become functional and secondary sexual characteristics develop. This is a time of hormonal and somatic change in both sexes, increase in hormone production lead to development of reproductive capability and a mature physical experience (Millstein *et al*, 1993, p.15).

In most children the onset of adolescence is marked by a growth spurt resulting in a clear increase in body height & mass as well as changes in bodily proportions (Gouws & Kruger, 1994). The individual's last dramatic growth spurt occurs during adolescence (Gerdes, Moore, Ochse & van Ede, 1988). In boys height may increase by as much as twenty percent hence a major adaptation has to be made to a different body (Bockneck, 1980). Individual differences in timing and tempo mean that youngsters enter the pubertal period with differing levels of preparation and that peers of the same age will show large variation in physical maturity (Millstein *et al*, 1993).

2.11.1.1 Implications for psychological well-being

The drastic and rapid change of the body, more often than not creates problems and stress for the adolescent. He or she is acutely aware of his or her body and worries whether it will develop naturally and acceptably (Gouws & Kruger, 1994). Self- acceptance plays an important role, if an adolescent has to learn to accept his or her body. Moreover, he or she has to retain a sense of continuity, that is, the feeling that she is still the same person (Mussen *et al*, 1990). For boys, physical maturation leads to improved body image, probably because increased size and muscular development enhance their social status (Millstein *et al*, 1993, p.15). If a boy feels that he has not achieved this increase in muscular development it is a great concern for him and usually a source of stress. Early maturation in girls may not be a pleasant experience as this may be a source of embarrassment to their peers.

A particular way in which the adolescent perceives his or her body -whether distorted or not – may therefore have important psychological consequences and may impede or enhance the forming of his or her self-concept (Gouws & Kruger, 1994). Self-concept is not a pre-determined variable that remains static across situations and time, like other self-descriptive behaviours, it can be enhanced (Obiakor, 1992, p.164). Exercise can be used as a medium to promote physical self-worth and other important physical self-perceptions such as body image (Biddle *et al*, 2000, p.157). These authors further argue that physical self-worth

carries mental well-being properties in its own right and should be considered as a valuable end point of exercise programmes.

Determining the mechanisms for the psychological effects of exercise in general, and for depression in particular, is perhaps the greatest challenge to exercise scientists trying to illuminate the relationship between exercise and mental health (Biddle *et al*, 2000).

2.11. 2 Cognitive development

According to Piaget (1971), the highest level of intellectual development occurs during adolescence (formal-operational phase), "and by the end of adolescence the development of the cognitive faculties is almost complete, although further knowledge can still be acquired" (Gerdes *et al*, 1988, p.284). Between ages eleven and fourteen most youngsters become increasingly capable of thinking hypothetically, applying formal logic and using abstract concepts (Gerdes *et al*, 1988; Inhelder & Piaget, 1958).

Decision-making ability increases over the adolescent decade (Millstein *et al*, 1993). Van den Aardweg and Van den Aardweg, (1988), summarise the formal-operational phase as follows:

- Think in abstract
- Formulate hypotheses and problems

- Recognize imperfect assumptions
- Verify the results of reasoning
- Review own reasoning process
- Distinguish the real from the impossible
- Devise solutions to problems
- Reason hypothetically -deductively
- Handle many possibilities simultaneously
- Conceive of what might be
- Detect logical inconsistencies.

2.11.2.1 Implications for psychological well being

The cognitive changes adolescents experience, should facilitate their psychological wellbeing, since adolescents become better able to comprehend health risks, reflect on their behaviour and consider the long-term consequences of their actions (Millstein *et al*, 1993, p.16). Mwamwenda (1989), states that the results of research indicate that qualitatively as well as quantitatively the cognitive faculties of children in Africa compare well with those of children in Western cultures.

Adolescents who are capable of formal-operational thought are capable of using sophisticated mnemonic techniques with the result that they are able to accomplish intellectual tasks more rapidly and effectively (Millstein *et al*, 1993,

p.54). This can lead to feelings of self-confidence and self-worth, which are important in psychological well-being. Health promotion efforts may need to include physical activity as a strategy because of its researched benefits to mental health. Positive effects of exercise on self-perceptions can be experienced by all age groups, but there is strongest evidence for change for children and middle aged adults (Biddle *et al*, 2000, p.157).

2.11.3 Self, identity, autonomy and personality development

According to Erikson (1968), the process of identity development begins in early childhood, but becomes a developmental crisis demanding resolution during the period of adolescence and youth. If a clear definition of identity is to be achieved, role confusion and identity uncertainty will stand in the way of commitment to adult roles and long-term objectives.

Van den Aardweg and Van den Aardweg, (1988), define identity as "knowing who and what one is and the knowledge that one is distinguishable from others". It implies a sense of self (Gouws & Kruger, 1994) whereby adolescents can conceptualize themselves in terms of abstract psychological characteristics, compare themselves to others draw conclusions about their future prospects (Millstein *et al*, 1993). These latter authors further argue that with development of formal-operational thought, adolescents become able to describe the self more abstractly. Erikson (1958) postulated that there are two identity states which

2.11.3.1 Implications on psychological well being

To support a healthy sense of self–esteem adolescents need opportunities to feel competent and successful (Millstein *et al*, 1993). This means improving young people's competence in traditionally approved areas such as academics but may also mean supporting areas of competence outside scholastic achievement to engage less academically inclined students (Harter, 1990).

Self-understanding can be fostered through social cognitive interventions in which adolescents learn to express personal points of view while keeping an open mind to alternative perspective (Harter, 1990). The development of autonomy is a normal and necessary part of becoming a responsible adult (Millstein *et al*, 1993).

Health promoters are faced with a task of making sure that young people are well informed about the possible consequences of various courses of action. Monitoring of adolescents' behaviour can be a tough task as one may not be with them all the time. It may be possible to capitalize on adolescents desire for autonomy in health promotion efforts (Millstein *et al*, 1993, p.21). These authors further argue that introducing health in the context of personal choice and control provides an opportunity for young people to exercise their autonomy by committing to health promoting patterns of behaviour such as exercise and proper diet.

2.11.4 Social development

The focal theme in social development is the matter of shedding egocentricity and achieving social maturity (Wiechers & Prinsloo, 1994, p.66). These authors further state that this means achieving a place in society, coping with changes in that society and being able to accept particular roles that occur there.

During adolescence, key social contexts are family, peer group, school, and workplace which are embedded in the local community and the broader society (Millstein *et al*, 1993). The family lays the foundation of later relationships and may influence how the child feels about himself or herself. One of the cardinal features of the adolescents relations with his parents is striving for independence, self-reliance and autonomy (Gouws & Kruger, 1994). Although adolescents' relations with parents are generally good (Coleman & Henry, 1990), they clash as adolescents begin to question parents values, interest and attitudes. It seems that the parenting styles have a marked influence on personality development and can hamper or enhance the development of self-reliance with children (Gouws & Kruger, 1994).

Consequently, the adolescent gradually moves away from his parents, and acceptance by and consorting with the peer group assume increasing importance (Gouws & Kruger, 1994). During adolescence relations with peers are highly

significant for self- concept formation and for self-actualization (Gouws & Kruger, 1994). The need for social intimacy and acceptance is very strong, but it is juxtaposed with another need which is just as strong the need for autonomy or mastery (Craig, 1979). Issues that cannot be shared with parents are freely discussed with peers.

Peers are as important as teachers and occasionally the peer group exerts more influence than teachers. The adolescent wants to be accepted as part of the peer group "world" and therefore endeavors to slot in with a particular group by conforming to its dress, speech and conduct, thus contracting a temporally emotional dependence on their approval (Gouws & Kruger, 1994). Vrey (1979, p.104) notes in this regard "In order to emancipate from the role of child as subordinate, the parental home as sanctuary is functionally replaced by the peer group as a basis of safety".

2.11.4.1 Relations with teachers and other adults

The process of self- image formation bears important consequences with respect to the adolescent relationships with others. The development of the self and emancipation does not take place outside social context and interactions with others (Myburg & Anders, 1989, p.124). The literature pays little attention to adolescents relations with other adults who are important to them, yet these relations exert a tremendous influence on their maturation (Gouws & Kruger, 1994).

Teachers represent major sources of interaction for adolescents. However, a number of studies suggest that teachers are not looked upon as major sources of support (Millstein *et al*, 1993). Unlike young children adolescents no longer accept without question whatever their teachers tell them (Gouws & Kruger, 1994). There will therefore be a continuous struggle to achieve independence in the school context.

2.11.5 Conative development

Human beings are essentially attuned to the accomplishment of certain objectives (Gouws & Kruger, 1994, p.147). The aforegoing paragraphs have characterized adolescents as striving for independence, autonomy, and acceptance. Van den Aardweg and Van den Aardweg (1988, p.46) note that conative development is the active striving towards the realization of a goal. The adolescent displays certain aspirations and a motivation that gradually stabilizes as a clear conative disposition (Gouws & Kruger, 1994). During this period adolescents attempt to match their aspirations and capabilities with available opportunities (Super, 1980).

Adolescents' vocational goals are influenced by their parents, teachers and significant others. More generally, if parents set high educational goals and

reward good schoolwork, their children will have high levels of aspirations (Mussen, *et al*, 1990).

2.11.5.1 Implications for psychological well being

The family is the most influential of all educational situations in which children find themselves (Wiechers & Prinsloo, 1994, p.66). Parents probably exert the most significant influence on adolescent's conative life (Gouws & Kruger, 1994). The development of the self-concept is dependent on the type of relationship a child has with the parents and significant others in his or her life. If a child is exposed to a healthy parent-child relationship, he or she is likely to have a positive self-concept and if a child feels insecure and threatened in his relationship with his or her parents, he or she is likely to have a negative self-concept.

The teacher can do a great deal to motivate an adolescent to realize a goal. The principle that negative self-concept should be prevented, is ignored by many schools (Purkey, 1970, p.40). Adolescents need skills to manage unsupervised time productively to select, analyse and criticize mass media in ages, to develop trusting peer relationships, and to communicate more fully with parents and other adults (Millstein *et al*, 1994).

Mental health promoters cannot afford to leave the psychological well being of adolescents to develop on its own. Intervention strategies need to be employed to inculcate skills for proper development and the attainment of autonomy so critical at this phase of development. Self esteem- itself widely recognized as a critical indicator of mental health – is important in many contexts. An individual with high self-esteem is more likely to be emotionally stable, and to cope better with life demands, and is likely to be less dependent on support services (Biddle *et al*, 2000).

2.12 Conclusion

Today's living has left much in the hands of technology. Whilst this makes life easier for people and saves time in many aspects, some things still need to be done the old way. Inculcating values to children still remains an adult, parental and national duty. It can be argued that not much has been done in instilling physical activity as a form of health promoting strategy in adolescents.

The problem is that parents believe that health promotion is a duty of schools. In their quest for better matric results schools have concentrated on examinable learning areas. This has resulted in adolescents resorting to sedentary lifestyles. Given the current status quo with regard to crime, divorce and unemployment in South Africa, behaviour disorders in children and adolescents are almost inevitable. Something drastic has become eminent. The different stages in the

development of adolescents serve to highlight the importance of each stage in the life of the adolescent. Hence, failure to master the development of any of the stages can lead to many developmental disorders in adolescents such as behaviour disorders.

Recent research findings indicate that, physical activity is beneficial in enhancing psychological wellbeing. A psychologically well person is associated with many positive aspects such as self-discipline, self-acceptance, autonomy, better relations with others, environmental mastery, purpose in life.

CHAPTER 3: DESCRIPTION OF THE EMPIRICAL INVESTIGATION

3.1 Introduction

Researchers differ in the way they conceptualise psychological well being. Some researchers emphasise physical processes and advocate focusing on the connection between good physical health and high quality of life (Goldberg & Hillier, 1979).

The previous chapter was concerned with literature review on physical exercise and psychological wellbeing in adolescents with behaviour disorders. This chapter will focus on the rationale for the empirical investigation, the purpose of the empirical investigation and the method of the investigation.

3.2 The rationale for the empirical investigation

The literature study revealed that:

- There are less and less physical education programmes in secondary schools as the focus is now on examinable learning areas. A large number of adolescents and youth are not physically active because of enhanced technology and many other factors

- Adolescence is the most critical stage of development, self acceptance and self-esteem becomes particularly important during this stage. These attributes are largely influenced by mental wellness of the adolescent which consequently influences behaviour.

- The role of physical exercise can never be under estimated in promoting psychological well being. It can be used as a disease prevention as well as health promotion strategy in primary and secondary categories of both applications.

In order to explore the relationship between physical exercise and psychological well being in adolescents with behaviour disorders in more depth and detail, it was necessary to launch an empirical investigation into the matter

3.3 Purpose of the empirical investigation

The purpose of this study was to explore the impact of physical exercise on the psychological wellbeing of adolescents with behaviour disorders.

It was specifically intended that participants explore their experience of exercise and group inferences with regard to psychological effects the experience might have on these adolescents. It was conceptualized that such an experience might also have beneficial indirect effects on the participant's behaviour.

3.4 Methodology

3.4.1 Research design

The approach to this empirical investigation was both quantitative and qualitative in nature. This study was motivated by secondary prevention of behaviour disorders and promotion of mental health (Edwards, 2001a).

A participative, action orientated experimental and control group pre - test post - test research design was used.

A pre-test post - test control group research design was conducted.

3.4.2 Participants

The study was conducted at Amajuba district in KwaZulu Natal. It was conducted on adolescents with behaviour disorders. At the time of the study Newcastle School of Industry had an enrolment of 31 boys. All 31 adolescent boys participated in this study. This sample was considered very small by the

researcher and for this reason another sample was drawn from Bergsig School of Industry. A total of 29 boys participated from this school.

All in all 60 adolescent boys participated in the study. Their average age was 14,4 years. These adolescents represented the following cultural backgrounds: 38 Africans, 16 Whites and 6 Indians. In terms of home language; 36 were IsiZulu speaking, 2 Xhosa speaking 12 Afrikaans and 10 English speaking. A larger sample could not be drawn as the numbers in these schools are limited.

3.4.3 Schools of industry

KwaZulu Natal province has three schools of industry. A school of industry only admits children with severe behaviour problems. Department of Education (1997) reporting on the National Commission on Special Needs in Education and Training (NCSNET) and the National Committee on Education Support Services (NCESS), state that such a school is defined as school maintained for the reception, care, education and training of children sent or transferred there under this Act. The main thrust of the philosophy of this Act was the care and protection of children and the promotion of wellbeing (Department of Education, 2001).

According to the Department of Education (2001), a child may only be placed at a School of Industry when his or her behaviour is such that the home is not able

to manage, or control it, the Commission of Child Welfare rules that the child is in need of care in terms of the Child Care Act and issues a Court Order to that effect.

Bergsig School of Industry is situated in Utrecht, it is the only school in South Africa catering for young children (ages 7-13). As the focus of this research was on adolescents only boys between the ages 12 and 13 participated from this school.

Newcastle School of Industry is situated in Newcastle and is controlled jointly by the departments of welfare and education. It caters for adolescent boys and on admission, age/level of social maturity takes precedence over scholastic level.

3.4.4 Measuring instruments

The measuring instruments were presented in English as the medium of instruction in both schools is English. A Behaviour Rating Profile (BRP-2) was used in this study. The BRP-2 is a battery of six instruments designed to evaluate students' behaviours at home, in school and in interpersonal relationships. For purposes of this study only the Teacher Rating Scale was used as the participants of this study were all boarders.

The Teacher Rating Scale has 30 items and is completed by the teacher, principal, librarian or non teaching staff member who has regular contact with the learner. Each item is a sentence stem describing behaviours that may be observed at school. The respondent classifies each item as "Very Much Like the Student ", "Like the Student", "Not Much Like the Student" or "Not At All Like the Student." Scoring is quite simply, a tally of the responses to the test items. These raw scores are converted into standard scores.

Significantly low standard scores below 7 may be indicative of poor self concept, immature or deviant behaviour patterns, or negative feelings or perceptions from teachers. Significantly high standard score of 12 and above may indicate that the learner is perceived as more mature and better adjusted than that of age mates. Unusually high scores are just as representative of emotionally or behaviorally disordered learners as very low scores (Brown & Hammill, 1990). The latter authors establishing the internal consistency and stability reliability of the Behaviour Rating Scale with a group of 97 emotionally disturbed adolescents. They reported an alpha coefficient of .80 for the Teacher Rating Scale.

Due to the educational level of the respondents (between grade 4 to 9) and the fact that the majority experienced reading and writing problems, it was extremely difficult to construct measuring instruments which required participants to read and respond in writing. Therefore the following measuring scales were simplified

to suit the level of understanding of participants and to cater for their different academic levels.

A Feelings Profile was constructed from various questionnaires chosen. Participants had to respond to questions on how they felt about themselves, their lives and their relations with other people. Respondents had to answer 10 true or false questions; four negative items and six positive items.

The respondent's correct answers ('true' to positive item and 'false' to negative items) were tallied out of 10. This indicated how the respondent felt about a certain item, which may be indicative of their self-esteem probably related to them behaving in a certain way.

A Physical Self Perception Profile was also constructed from various questionnaires. Participants had to respond to ten 'true' or 'false' questions on *sports competence, physical condition, body attractiveness, physical self-worth* and *physical strength.* Again respondents correct answers ('true' to positive items and 'false' to negative items) were tallied out of 10.

A short 13- item Wellness Profile adapted from Edwards (2002) was used. The focus was on mood and satisfaction with life assessment. Respondents were required to evaluate their current feelings on a 4- point scale with regard to 4 negative and 6 positive mood states. Satisfaction with life assessment required respondents to make cognitive judgments with regard to satisfaction with their

quality of life. Respondents were required to evaluate their judgments on a 4-point scale.

After discussions with the educators on the academic level of these adolescents, it became evident that they were struggling with written work. Literature review supports the fact that adolescents with behaviour disorders are likely to have learning disabilities. For this reason it was extremely difficult to ask participants direct qualitative questions relevant for this study. The relevant questions in this case should have been: what do you understand by physical exercise and psychological well being? Instead two questions were asked in which they had to write ± 5 lines. The two questions asked were: what do you understand by a healthy mind? What do you understand by a healthy body? It was felt that all respondents will know something about health, body and mind instead of using big words such as 'psychological' and 'well being'.

3.5 The process of gaining entry

Newcastle School of Industries is controlled by both department of welfare and department of education. Permission was sought from the principals of schools and the senior social worker of Newcastle School of Industry. Both managers were excited about the programme as the idea was to keep the boys occupied.

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It was explained to the adolescents that physical exercise would be the central part of the research. This was welcomed by the adolescents as they thought of it as something that would take them away from classes. After random selection had been done it was difficult to separate the two groups (control and experimental) as some had to part with friends. The other group was told their turn would come as well.

The first day of the programme was the most difficult day of all. When the adolescents realized that the programme started after school and they were not so interested any more. According to them it no longer served the purpose of relieving them from classes. It was some persuasion from the researcher and some help from the care staff that the adolescents dragged their feet to the ground.

3.6 The programme

The researcher entered into a discussion with the boys who were on the programme. It was explained to them that the programme was to be designed by the participants themselves in that they were to choose their favourite sport to play. After weighing a few options the participants decided on playing soccer, it was chosen because the majority of participants knew it better than the other sports.

The captains (two per school) were then chosen by the participants based on their competence in the sport. It was verified as to whether the captains were comfortable with the position or not. It was then explained that the captains would take turns every day to choose members for their team for the day. As there were fifteen participants on the programme, they played seven each side and the outstanding participant became a referee. The list of the fifteen boys was used to choose a referee, the first on the list was the first referee for the match. No training was given to any of the participants and officials as the aim was not on perfecting the participants' skills of soccer but to engage them on physical exercise.

Each school had assigned an official to help with the control and monitoring of the boys. Both schools had chosen an official who monitor sporting activities in the school. Their role in the programme was explained to them by the researcher as that of general supervision of the participants. The researcher was mainly involved with monitoring of the programme. The researcher and the officials acted as trainers during the twenty minutes of warming up.

Soccer as chosen by the participants proved to be an appropriate programme of physical exercise. It is structured, involves a lot of running and concentration. It also promotes communication as the players had to strategise on how to win the game. Moreover, it fosters decision making, sharing and team work among the players. The application of the programme was done as follows in both schools:

- The exercise programme ran for eight weeks

- It ran for one hour four times a week (14H00 –15H00).
- The adolescents were involved in warm up exercises for twenty minutes before the game began.

Chapter 4 discusses the results of the investigation

CHAPTER 4: RESULTS OF THE INVESTIGATION

4.1 Introduction

This research attempts to determine the impact of physical exercise on the psychological well being of adolescents with behaviour disorders. The following is an interpretation of results obtained from the application of the programme discussed in the previous chapter.

4.2 Quantitative findings

Teachers' ratings of adolescents on the Behaviour Rating Profile as well as the adolescents own ratings on Feelings, Physical Self-Perception and Wellness Profiles formed quantitative data. The following is a presentation of pre-test as well as post-test results of the four rating profiles of both the experimental and the control groups.

Table 1. Pre and post test means and standard deviation for BRP, feelings, physical self-perception and wellness components

Condition		Behaviour Rating Profile (BRP)		Feelings Profile		Physical Self-Perception Profile		Wellness Profile	
		Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test
Experimental Group	Mean	8.07	8.50	7.60	9.10	7.77	8.80	9.43	10.57
	N	30	30	30	30	30	30	30	30
	Std. Dev.	2.80	2.67	1.96	.80	1.50	.89	1.83	1.76
Control Group	Mean	7.67	7.97	7.93	8.20	9.37	9.43	9.93	10.20
	N	30	30	30	30	30	30	30	30
	Std. Dev.	2.55	2.4	1.46	1.27	1.61	1.61	1.62	1.67

From inspection of Table 1 pre and post test mean scores it is clear that there were improvements for BRP, feelings, physical self-perception and wellness in both experimental and control groups with improvements in the experimental (exercise) group seeming to be better than those in the control group.

Paired samples t tests indicated that there were significant changes between pre and post test scores at the 1% level for the experimental group BRP1 vs. BRP2, $t = 2.8$, Feelings 1 vs. Feelings 2, $t = 5.8$, Physical Self Perception PSP1 vs. PSP 2, $t = 5.9$ and Wellness 1 vs. Wellness 2, $t = 7.2$. Significant changes were also noted in the control group for three of the dependant variables; BRP 1 vs. BRP 2, $t = 2.5$ $p < .02$, Feelings 1 vs. Feelings 2, $t = 2.5$, $p < .02$, Wellness 1 vs. Wellness 2, $t = 2.1$, $p < .04$. These findings taken inclusively indicate particularly significant changes with respect to Physical Self Perception in the experimental group only.

Separate one way analysis of variance was run to investigate differences between the experimental and control groups on the dependent variables. Significant differences were only found for the Feelings post test (Feelings 2) $f = 10.76$ $p < .002$. No significant differences were found for the analysis of other dependent variables between the two schools.

As observed in table 1 above, even if not all analyses were significant, trends were in the expected direction of improvement in post test scores as perceived by learners in their responses to the pre and post test assessment measures. Responses of the care worker, deputy principal, educators and adolescents themselves support the findings. These findings appear in the qualitative results section below:

4.3 Qualitative results

The researcher interviewed the participants, teachers and care workers before, during and after the programme, their comments formed qualitative data. The qualitative questionnaire could not yield much information as many participants from both groups could not respond to this question. They left blank spaces and the few that responded did so in one sentence. Those that responded seemed to share the notion that *a healthy mind* means that 'you are happy' and *a healthy body* means that 'you are not sick'.

The qualitative findings relied much on the adolescents' comments on how they experienced the programme as the writing of sentences could not yield any results worth interpretation. The following cases were chosen as representatives of the samples views on the programme.

- M a 14 year old IsiZulu speaking boy who was on the programme voluntarily talked about the programme. He was described by care workers as reserved and a loner. The care workers had said that he was inclined to day dreaming and seemed lost. He was reported to have experienced problems with carrying out of instructions. He had earlier reported that he did not like to exercise or to play sport. After having been exposed to the programme, he reported that the school used to be 'boring', but he did not get bored anymore as he looked forward to the

soccer game in the afternoon. He also mentioned that soccer 'keeps us out of trouble'. His score on physical self perception improved from 8 to 10.

- P a 16 year old Indian boy made a remark about their smoking habits. He reported that he and his friends would smoke about 10 cigarettes a day. He said that he has seen a decrease in their smoking habits because they spent the whole hour engaged in the playgrounds. He also said he had noticed that he no longer craved to smoke as much as he did in the past. This boy's score in all the scales did not show any improvement.

- Z a 15 year old Afrikaans speaking boy made a comment about his soccer skills. He said that he was shocked to realize that he has good soccer skills. He reported that though he liked soccer he never played it before as he did not have time to do so. His scores on the Feelings Scale, Physical Self Perception Scale and Behaviour Scale improved from 9 to 10, 6 to 8 and 7 to 10 respectively.

- Q a thirteen year old IsiZulu speaking boy was reported to have been having problems adjusting to the school. He had been in and out of the principal's office because of problems with aggression. He was also found to have a high record of absconding. He reported that he had never found time to fight since the beginning of the programme. When he was asked

what he thought caused this he said he used to be so tired at the end of the soccer game that he could not even lift a finger. His score on behaviour improved from 4 to 6.

- G a 15 year old Xhosa speaking boy who was not on the programme commented that he had seen the boys who were on the programme 'sticking together like one big family' – this indicating improvement in interpersonal skills. This was echoed by other adolescents who were not on the programme. This boy's score on Physical Self Perception Scale improved from 7 to 8 and so did the scores of other boys who were not on the programme like him.

- Comments coming from the majority of boys who were on the programme indicated that soccer brought them together. They reported that they no longer fight as they used to do before they started playing. They commented on the 'team spirit' that prevailed among them since the beginning of the programme. These were the boys who had been known by the teachers and care workers to hang out together teasing others, stealing other children's things and doing all sorts of things that were against school rules.

- Adolescents who were not on the programme reported that not much has changed for them. They reported that they were not spending much time with the others as the others spend a lot of time in the play ground.

- The deputy principal reported that there was a slight improvement in class attendance. This was supported by class registers that reflected eighty percent attendance during the period of the programme. He also commented on the decline of disciplinary cases brought to the principal.

- D a lady care worker came out strongly about the drop in incidents of absconding. She reported that the adolescents who were on the programme would be so tired by supper time that all they made less noise. She also talked about the observation she made about the boys on the programme being inclined to group together. The other care workers commended the programme on its ability to effect easier control of the boys. They said that the boys, now that they were on the programme were not as difficult with the rules as they were before. They noted that this was helping the other boys who were not on the programme as well as they did not cause much trouble.

The researcher observed with fascination as the participants went through different phases of transformation during the course of the programme. Name calling, swearing and disrespect for each other and adults as observed in the

beginning of the programme was replaced by respect, tolerance and improved interpersonal skills at the end of the programme. The researcher's assessment of the situation was that through the stages of the programme each participant's self-image, self-esteem and self-confidence was enhanced.

4.4 Discussion

Table 1 is a comparison of the means and standard deviations of thirty adolescents with behaviour disorders exposed to an exercise programme and thirty adolescents with behaviour disorders who were not exposed to an exercise programme. The conclusions from the analysis revealed that adolescents with behaviour disorders who were exposed to the programme showed general improvements for behaviour, feelings about the self, physical self-perceptions and wellness components.

There was a significant improvement indicated for physical self perception for adolescents who were on the programme only. This suggests that after the programme adolescents appreciated their bodies more than they did before the programme. It may also indicate that they saw themselves physically fit and more capable after the programme. It also suggests that they were happier with their bodies than before the programme.

Although an improvement was also noticed with the post test results of the adolescents who were not on the programme as well, the scores for those who were on the programme for the four scales were slightly higher. The reason for the improvement of the scores for the group that was not on the programme was difficult to explain except to hypothesize that it could be attributed to the fact that they copied good behaviour from the others. The adolescents who were not on the programme could have found it lonesome to abscond, steal and fight in the absence of their friends who spent more time on the programme.

The assessment instruments used in this study asked subjects to rate themselves on personal qualities and abilities. Rosenberg (1979) argues that simply to add up the parts in order to assess the whole is to ignore the fact that the global attitude is the product of an enormously complex synthesis of elements which goes on in the individual's phenomenal field. It is not simply the element per se but their relationship, weighting, and combination that is responsible for the final outcome. However, even with the problem as highlighted above, this data does provide information with which to compare adolescent exercisers and non exercisers regarding behaviour and psychological well being.

Another important point worth mentioning here is the fact that the majority of adolescents in schools of industry have learning difficulties. Many learners with

learning disabilities experience reading difficulties as well. The issue of learning disability as inherent in the participants had impact on the responses of the five - sentence question. It was noted that the respondents in both groups would respond in one word or sentence instead of five sentences. The writing part of the instrument, it can be argued, acted as a barrier and prevented respondents to express their comprehensions of the concepts of physical exercise and psychological well-being. It further prevented the respondents to express their experience of exercise freely.

It may be argued that the programme did much to boost self-esteem in the adolescents in the experimental group. The comment of the fifteen year old boy (Z.) on his soccer skills suggests an enhanced self-esteem. It also indicated an improved self confidence and a belief in the self which are all important attributes in mental wellness. The boy's improved results on Feelings, Physical self perception and Behaviour Scales bear evidence to this.

It is contended that the adolescents on the programme gained feelings of control. This can be deduced from the statements made by Q. a thirteen year old who reported that he had not found time to fight again since he had been involved in the programme. This may also suggest that this adolescent's social interaction skills improved through physical exercise. This was supported by his improved test results in behaviour.

The sixteen year old boy's remarks on decline in smoking habits may indicate the newly discovered skills of self control. It must be mentioned that some people smoke to control anxiety. Physical exercise reduces anxiety. The reduction in anxiety means reduction in craving for cigarette. Although the participant did not report having stopped smoking, he did however, report some reduction. Scully (1998) puts it clearly in pointing out that the role of exercise is probably best described as preventative than corrective.

A point can be made regarding remarks by care workers, teachers and adolescents themselves that, in bringing the boys together, the programme improved social interaction, interpersonal skills, team spirit, cohesiveness ,social support and harmony. Supporting the notion of social cohesion are Edwards' (2001b) findings, in his research with forty three postgraduate students and staff on "exercise experience", social aspects were especially emphasized in terms of promotion of social support, interaction, connection, cohesion and harmony through the shared community experience and context. This harmony among adolescents may be associated with psychological wellness which can be conceptualized as a positive component of optimal psychological health (Edwards, 2002).

The programme was appreciated by the staff as it facilitated easier control as the adolescents in the experimental group would no longer cause trouble for them. Probably, they would be so tired after playing that there would be no time to think

about mischief. One can therefore hypothesize that exercise facilitated good sleeping habits which in turn contributed to relaxation. As much as these perceived improved behaviour patterns were attributed to tiredness by the care workers in this study, the effects of regular exercise on behaviour cannot be disputed. Unfortunately, enlightenment regarding our understanding of the nature of physical self, the manner in which it relates to other aspects of self-perception and also of behaviour, has been slow (Fox, 2000).

In general both quantitative and qualitative results as revealed by the instruments used, support the hypothesis of this study. The hypothesis was that adolescents with behaviour disorders, when exposed to exercise programmes would show improved behaviours and would score higher on the psychological wellbeing scale. The effects of the programme on academic performance was not sufficiently investigated. However, reports on less trouble by the adolescents may suggest general improvement in class interactions which may enhance performance.

4.5 Conclusion

Quantitative as well as qualitative results in this research support earlier studies emphasizing the value of physical activity and exercise interventions in promoting mental health (Edwards, 2001a; Fox, 2000; Morehouse & Gross, 1977; Noakes & Granger, 1995). The findings support and extend earlier studies on the effects of

physical exercise on mental health and psychological well being in general (Biddle et al 2000; Fox 2000; Hayes & Ross 1986; Scully, 1998; Stephens, 1988). The findings provided further support for the vital role that regular exercise play in secondary prevention and in the promotion of psychological well being.

In view of findings as to decreased smoking habits, decreased absenteeism in class, decreased cases of absconding and increased social support and cohesion, the impact of physical exercise on behaviour needs to be accentuated.

Although this research cannot boast population representativeness as it was limited in sample size it did however, provide information with which to compare psychological well being and healthy behaviours of adolescent exercisers and non-exercisers. The concept of psychological well being has great potential for promoting health in general and mental health in particular in its positive emphasis on survival, health and strength, through managing stress, coping with crisis and developing competencies, skills supplies and resources such as regular exercise and membership of some form of a health, sport or exercise association (Edwards, 2004).

This research was concerned with preventive and promotive models of mental health, it has provided further evidence that the concept of psychological well

being has great potential for promoting health in general and mental health in particular.

Finally the thesis is intended as a resource for other research and interventions in the mental and public health fields with special reference to physical exercise, psychological well being and behaviour disorders of adolescence.

CHAPTER 5: FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The aim of this study was to:

- Determine the relative impact of physical exercise on the psychological well being of adolescents with behaviour disorders.

- Compare the psychological well being of adolescents with behaviour disorders who were engaged in the physical exercise programme to that of the adolescents with behaviour disorders who were not engaged in physical exercise programme.

This chapter will discuss the following:

- Findings
- Limitations
- Recommendations and
- Conclusion

5.2 Findings

The focus of this research was on physical exercise programmes and their impact on the psychological well being of adolescents with behaviour disorders. Psychological well being was conceptualized as a state of positive psychological health or psychological wellness (WHO, 1946). A psychologically well person is associated with many positive aspects of life such as positive self-esteem, (including physical self-perception), positive feelings about self, healthy relationships and a positive outlook on life.

Post test results in this research reveal that adolescents who were engaged in the programme show improvement with regard to feelings about themselves, physical self- perception, wellness and behaviour.

Body image was measured by the Physical Self-Perception scale (PSP). Findings indicated significant changes with respect to physical self perception in those adolescents who were on the programme only. The implication is that these adolescents felt good about their bodies after having been exposed to the programme. Comments of some adolescents on their soccer talents suggested enhanced self confidence, a healthy level of self-esteem and a set of empowered skills. Literature review indicates that such attributes not only help protect against unhealthy behaviour and ill health but also inherently contribute to a

sense of empowerment and life control, and thus to mental well being (Tannahill, 2000).

The post test results for the Behaviour Rating Scale revealed a higher improvement for the adolescents who were on the physical exercise programme than those who were not exercising. This is evidence that children and adolescents with behaviour disorders can be taught more socially acceptable and appropriate behaviour. They require intensive and prolonged intervention and should be taught at home, in special classes, special schools or residential institutions (Kauffman, 1985).

The qualitative results as revealed by comments of adolescents who were on the programme support literature review discussed in chapter two. These adolescents reported more control over their lives. Statements such as 'keeping us out of trouble' as echoed by a fourteen year old boy who was on the programme is evidence of the increased amount of control of their lives. Exercise 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 school or work, alcohol abuse, anger, confusion, depression, headaches, hostility, phobias, psychotic behaviour, tension, type A behaviour and work errors (Weinberg & Gould, 1999; Edwards, Basson & Edwards, 2003).

Responses of the care worker indicated a drop in the incidents of absconding and attendance registers for that period, showed an improvement in the adolescents' class attendance. These are manifestations of healthy behaviours. All of which support the notion that physical exercise decreases absenteeism and increases self-control as discussed in the literature. The care workers commented that this improvement in behaviour of the boys in the experimental group was helping the other boys as well, as they themselves did not cause much trouble. Half the enrolment boys in one school were involved in the programme this group is large enough to influence a change in the whole school. The other school had a higher enrolment but only boys in the senior class participated in the programme, again similar results could be expected with regard to the influence to the others not on the programme. Smoking was reported to have decreased in frequency as the adolescents spent some time in the play ground. Most people smoke for a purpose – essentially to reduce stress, or anxiety. If exercise makes people less tense, it certainly has effect on smoking habits.

Fighting was observed to have diminished by the care staff of the schools. The deputy principal reported on the decline of discipline cases. Fighting was cited in the literature as one of the many characteristics of conduct and socialized aggressive disorders. Many adolescents in schools of industry exhibit aggression, irritability, truancy, disobedience and many other maladaptive

behaviours. If a decrease was noticed it may mean that adolescents gained self control and were more aware and sensitive of other people's feelings something which is uncharacteristic of children and adolescents with behaviour disorders. Soccer teaches interpersonal relationship skills and team work spirit. With better interpersonal skills certainly aggression or fighting may be reduced.

When comments of the adolescents who were on the programme were compared to those of adolescents who were not on the programme indications were that the former group experienced enhanced confidence, cooperation, self-esteem and positive relations with others. This is supported by the statements by the educators and the care workers on 'team spirit' indicating cooperation. Comments about newly found 'soccer skills' by the fifteen year old boy indicate increased coordination, visual motor coordination and improved interpersonal relationship skills. The issue of decreased fighting suggests positive relations with others.

The adolescents on the programme were also observed to have bonded nicely - 'sticking together' - which suggests an improvement in social interaction and relations both of which indicate direction towards more socially acceptable behaviour. From this it may be deduced that the programme did bring more unity among the boys. Briefly put, reports by participants on their experiences of the programme can be conceptualized as having brought about social cohesion. In their comments the boys indicated that soccer had brought them together. This

paved way to healthy interactions resulting in social harmony as evidenced by the boys' remarks on the decrease of fighting incidents.

The programme was appreciated by both the teachers and care workers for having contributed in facilitating easier control of the boys. The statement 'easier control' suggests less problem behaviour by the adolescents. This supports the reports on a decline in absconding and cases brought to the principal for discipline. Against this background one is tempted to say that the adolescents showed some cooperation and obedience, to a certain extent, after having been exposed to the programme.

The conclusion drawn here is that the physical exercise programme implemented on adolescents with behaviour disorders, was responsible for enhancing and influencing self-confidence, self-esteem, social cohesion, social harmony and improved behaviour. These attributes contribute to a sense of empowerment and life control and thus mental well being (Tannahill, 2000). In other words the physical exercise programme did have some impact on the psychological well being of adolescents with behaviour disorders.

5.3 Limitations of this study

The learning disability factor as presented by children with behaviour disorders posed a limiting factor in terms of written responses of participants in this investigation.

The sample was limited in size and population representativeness due to the number of adolescents with behaviour disorders that can be accommodated in schools of industries. Hence, results in this research can not be generalized to all the adolescents with behaviour disorders. Also, this sample could not be representative of both sexes as the number of adolescent girls in Bergsig is limited, while Newcastle School of Industries does not have girls at all.

As schools of industry are residential institutions, this created a problem preventing adolescents from mixing and sharing information, skills and attitudes. This could have affected the results of this investigation. On the other hand, information and experience passing between members of control and experimental groups constituted a probable confounding variable, probably leading to less significant differences between the groups and less chance of making any causative conclusions

The programme was implemented for a relatively too short time (eight weeks) to effect desired results.

5.4 Recommendations

Future research should use two schools - one as an experimental group and the other as control group take care of confounding variables.

Physical exercise programmes should run for longer periods. Kauffman (1985) recommends intensive and prolonged interventions for children with severe behaviour disorders.

Incentives should be given to motivate adolescents to stay committed to the programme.

The use of audio and visual aids could facilitate reliable data collection.

Regular physical exercise programmes in schools particularly secondary schools are a strong recommendation to promote healthy lifestyles.

Further quantitative as well as qualitative research is needed to extend previous and this study's findings on the benefits of physical exercise on psychological well-being with special reference to adolescents with behaviour disorders.

5.6 Conclusion

The literature review reveals that adolescents are vulnerable to behaviour disorders because of many factors such as the need to belong, heightened negativism and the struggle for autonomy. Nevertheless, literature indicates that children and adolescents can be taught more socially acceptable and appropriate behaviour through intensive intervention programmes.

The problem of adolescents with behaviour disorders is an old one, yet, health professionals still struggle with a universally acceptable definition. Treatment through intervention programmes has been slow. It has been difficult to choose the right intervention programme for these adolescents.

Previous studies indicate that physical exercise is associated with many positive benefits on psychological well being. This study was aimed at determining the impact of physical exercise on the psychological well being of adolescents with behaviour disorders. It was hypothesized that adolescents who participate in the exercise programme would rate higher on the psychological well being scale, and that they would show improved behaviour compared to the control group.

Empirical findings in this study reveal that adolescents who were in the physical exercise programme showed improved physical self perceptions and behaviour patterns, also felt better about themselves and showed enhanced wellness.

From these findings it may be deduced that the physical exercise programme implemented on these adolescents influenced self-confidence, self-esteem, social cohesion, social harmony and improved behaviour in general. Therefore, physical exercise does have an impact on the psychological well being of adolescents with behaviour disorders.

It is important for teachers and education specialists to realize that these findings are an important contribution to the support that schools may offer to the general population of learners. Undoubtedly, physical exercise programmes administered to any other ordinary learner in the school, would yield the same results or better. Probably, exercise programmes can also enhance academic performance.

This research does provide evidence for the relative influence of physical exercise on the psychological wellbeing of adolescents with behaviour disorders. However, there remains great need for further, better- controlled research into physical activity, exercise, and sport with special reference to children and adolescents with behaviour disorders.

Adolescents' comments on the benefits of the programme – 'sticking together like one big family', 'team spirit' and 'keeps us out of trouble' - seem to support previous qualitative studies on the value of exercise experience in enhancing positive mood states and satisfaction with life (Berger 1996, 2001; Edwards

2001a, 2001b; Stelter 2000, 2001). These findings provide clear support for the public health benefits of regular exercise in terms of an association with psychological wellbeing and healthy behaviours.

REFERENCES

Adams, J. F. (1980). *Understanding adolescence: Current development in adolescent psychology*. Boston: Allyn58
and Bacon.

Adams, G. R., Montemayor, R. & Gullota, T. P. (1996). *Psychological development during adolescence: Progress in developmental contextualism*. London: Sage.

Apter, S. J. & Conoley, J. C. (1984). *Childhood behavior disorders and emotional disturbance*. Englewood Cliffs, NJ: Prentice-Hall.

Arnold, P. J. (1968). *Education, physical education and personality development*. London: Heinemann.

Berger, B. G. (1996). Psychological benefits of an active lifestyle: what we know and what we need to know. *Quest*, 48,330-353.

Berger, B. G. (2001). 'Feeling good': mood alteration and meaning in exercise. In Papaioanou, A.; Goudas, M. and Theodorakis, Y. (Eds) *In the dawn of the new millennium*. Proceedings of the 10th World Congress of sport Psychology, May 28 to June 2, Skiathos, Greece. Thessaloniki: Christodoulidi.

Biddle, S. J., Fox, K. R. & Boutcher, S. H. (2000). *Physical activity and psychological wellbeing*. London: Routledge.

Bockneck, G. (1980). *The young adult.* Monterey, CA: Brooks/Cole.

Bower, E.M. (1960). *Early identification of emotionally handicapped children in school*. Springfield: Charles C Thomas.

Brown, L. & Hammill, D. D. (1990). *Behaviour Rating Profile. Second Edition. A comprehensive approach to measuring the behaviour of school age children at home, at school and with peers*. Austin: Pro. Ed.

Brown, G., McDowell, R. L. & Smith, J. (1981). *Educating adolescents with behaviour disorders*. Columbus: Merrill Publishing Co.

Calfas, K. J. & Taylor, C. (1995). Effects of physical activity on psychological variables in adolescents. *Pediatric exercise Science*, 6,406-423

Caplan, G. (1964). *Principles of preventive psychiatry*. New York: Basic Books

Clarizio, H. F. & McCoy, G. F. (1983). *Behavior disorders in children*. New York: Harper & Row Publishers.

Cole, L. & Hall, I. N. (1970). *Psychology of adolescence. (2nd ed)*. California: Holt, Rinehart and Winston, Inc.

Coleman, J. (1980). *The nature of adolescence*. London: Methuen & Co.

Coleman, J. C., Butcher, J. N. & Carson, R. C. (1988). *Abnormal psychology and modern life. (7th ed.)*. Glenview, IL: Scott, Foresman.

Coleman, J. C. & Hendry, L. (1990). *The nature of adolescence. (2nd Ed)*. New York: Routledge.

Conger, J. J. (1979). *Adolescence: generation under pressure*. New York: Harper & Row.

Cowan, E.L. (2000). Community psychology and routes to psychological wellness. In Rappaport, J. & Seidman, E. (Eds) *Handbook of community psychology*. New York: Plenum Publishers.

Craig, G. J. (1979). *Child development*. Massachusetts: Allyn and Bacon.

Daughtrey, G., & Woods, J. B.(1971). *Physical education programs: Organization and administration*. London: Saunders Company.

Department of Education. (1997). *Report of the National Commission on Special Needs in Education and Training (NCSNET) and the Commission on Education Support Services (NCESS)*. Pretoria: Department of Education.

Department of Education. (2001). *Education White Paper 6: Special Needs Education: Building an Inclusive Education and Training System*. Pretoria: Department of Education.

Department of Education. (2001). *KwaZulu Natal Policy Framework. Education of Learners with Special Education Needs*. Pretoria: Department of education

Donatelle, R., Snow, C. & Wilcox, A. (1999). *Wellness: Choices for health and fitness*. California: Wadsworth Publishing Company.

Duminy, P. A., Dreyer, H. J. & Steyn, P. D. G. (1990). *Education for the student teacher*. Cape Town: Maskew Miller Longman.

Dusek, J. B. (1987). *Adolescent development and behavior*. New York: Prentice-Hall, Inc.

Edwards, D.N. & Louw, C.D. (1998). *Outcomes based sexuality education*. Pretoria: Kagiso.

Edwards S. D. (1999). Promoting mental health in Zululand, South Africa. *International Journal of Mental Health Promotion*,1, 16-21.

Edwards, S. D. (2001a). The experience of being fit: community implications. In Papaioannou, A., Goudas, M and Theodorakis, Y. (Eds.) *In the dawn of the new millennium*. Proceedings of the 10th World Congress of Sport Psychology, May 28 to June 2, Skiathos, Greece. Thessaloniki: Christodoulidi.

Edwards, S. D. (2001b). Promoting mental health: community effects of the exercise experience. *International Journal of Mental Health Promotion*, 3,(4), 7-15.

Edwards, S. D. (2002). *Promoting mental health through physical exercise*. KwaDlangezwa: University of Zululand.

Edwards, S. D. (2002a). *Health promotion: community psychology and indigenous healing*. KwaDlangezwa: Zululand University.

Edwards, S. D. (2003a). The structure of a psychological wellness profile. *International Journal of Mental Health Promotion*, 5,2, 6-10.

Edwards, S. D. (2003b). Physical exercise and psychological wellness in health club members: a comparative and longitudinal study. *South African Journal for Research in Sport, Physical Education and Recreation*, 25(1), 23-33.

Edwards, S. D. (2004). *Mental health, physical activity and public health; a South African perspective.* Paper presented at the third World Congress of Mental health Promotion held on 13-15 September 2004. Auckland, New Zealand.

Edwards, D. J., Basson, C. & Edwards, S. D. (2004). Psychological wellbeing and physical self-esteem in sport and exercise. *International Journal of Mental Health Promotion*, article submitted for consideration

Edwards, S. D., Ngcobo, H. S. B., & Pillay, A. L. (2004). Psychological wellbeing in South African university students. Article submitted to Journal, *Psychological Reports.*

Elder, G.H. Jr. (1980). *Family structure and socialization.* New York: Arno Press.

Epanchin, B. C. and Paul, J. L. (1987). *Emotional problems of childhood and adolescence: A multidisciplinary perspective.* Ohio: Merill Publishing.

Erickson, M. T. (1987). *Behaviour disorders of children and adolescents.* New Jersey: Prentice-Hall, Inc.

Erikson, E. H. (1958). *Young man Luther*. London: Faber& Faber.

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York: Norton.

Erikson, E. H. (1981). *Identity and the life cycle*. New York: International Universities Press.

Fox, K. R. (1990). The physical self-perception profile manual. Northern Illinois University. *Office for Health Promotion*.

Fox, K. R. (2000). Physical activity and mental health promotion: the natural partnership. *International Journal of Mental Health Promotion*, 4-12.

Galloway, D., Ball, T., Blomfield, D. & Seyd, R. (1982). *Schools and disruptive pupils*. England: Longman.

Gerdes, L. C., Moore, C., Ochse, R. & Van Ede, D. (1988). *The developing adult*. Durban: Butterworth Publishers.

Goldberg, D .P. & Hillier, V. F. (1979). A scaled version of the General Health Questionnaire. *Psychological Medicine*,9,139-145.

Gouws, E. & Kruger, N. (1994). *The adolescent:An educational perspective*. Durban: Butterworths.

Greenberg, J. S. & Pargman, D. (1989). *Physical fitness. A wellness approach*. New Jersey: Simon & Schuster.

Gruber, J. J. (1986). Physical activity and self-esteem development in children:A meta analysis. *America Academy of Physical Education Papers*, 19,330-48.

Harter, S. (1990). Self and identity development. In S.S. Feldman and G.R. Elliott (Eds) At the threshold: *The developing adolescent* (pp352-387). Cambridge, MA: Harvard University Press.

Herbert, M. (1978). *Conduct disorders of childhood and adolescence*: *A social learning perspective (Second edition)*. Great Britain: John Wiley & Sons.

Hayes, D. & Ross, C. E. (1986). Body and mind: the effects of exercise, overweight, and physical health on psychological well- being. *Journal of Health and Social Behaviour*, 27, 387-400.

Hodgson, R. J. (1996). Mental health promotion. Journal of Mental Health, vol, 5, (1), 1.

Inhelder, B. & Piaget, J. (1958). *The growth of logical thinking from childhood to adolescence*. New York: Basic Brook

Ivey,A. E. Ivey, M.B. & Simek-Morgan, L. (1997). *Counseling and psychotherapy: A multi-cultural perspective*. Boston: Allyn and Bacon.

Kane, W. M., Barnes, R. C., Giarratano, S. & Huner, J. (1985). *Healthy living*: *An active approach to wellness*. United States of America: Bobbs-Merrill.

Kauffman, J.M. (1985). *Characteristics of children's behaviour disorders*. (3rd ed). Columbus: Charles E. Merrill.

Lewis, C.C. (1981). The effects of parental firm control: A reinterpretation of findings. *Psychological Bulletin*, 90, 547 -563.

Lindsey, R., Jones, B. J. & Whitley, A.V. (1974). *Fitness for the Health of it*. USA: Brown Publishers.

Lovey, J. (1992). *Teaching troubled and troublesome adolescents*. London: David Fulton Publishers.

Meyer, W. F., Moore, C. and Viljoen, H. G. (1989). *Personality Theories*. Johannesburg: Lexicon Publishers.

Millman, H., Schaefer, C. & Cohen, J. (1980). *Therapies for school behaviour problems*. U.S.A. Jossey-Bass Inc.

Millstein, S. G., Petersen, A. C. and Nightingale, E. O. (1993). *Promoting the Health of Adolescents: New directions for the twenty-first century*. New York: Oxford.

Mnguni, G. T. (2002). *Self-concept enhancement of Zulu-speaking adolescents in multicultural schools*. Unpublished Masters of Education Dissertation. Pretoria: University of South Africa

Morehouse, L. & Gross, L.(1977). *Maximum performance*. Simon and Schuster: New York.

Morris, J. (1994). Exercise in the prevention of coronary heart disease: Today's best buy in public health. *Medicine and Science in Sport and Exercise*, 26, 807-814.

Morris, T. and Summers, J. (1995). *Sport psychology, theory, applications and issues*. Brisbane: John Wiley and sons.

Mussen, P. H., Conger, J. J., Kagan, J. and Huston, A. C. (1990). *Child development and personality (Seventh Edition)*. New York: Harper and Row.

Mwamwenda, T. S. (1989). *Educational psychology: An African perspective.* Durban: Butterworths.

Myburg, C. P. H. and Anders, M. M. (1989). Identity formation of black adolescents. *South African Journal of Education*, 9(1) 122-130.

Noakes, T. & Granger, S. (1995). *Running your best.* Cape Town: Oxford.

Ngubane, H. (1977). *Body and mind in Zulu medicine.* London: Academic Press.

Newton, J. (1988). *Preventing mental illness.* London: Routledge.

Obiakor, F. E. (1992). Self-concept of African American students: An operational model. *Exceptional Children*, 59(2) 160-167.

Piaget, J. (1971). *The child's conception of movement and speed.* New York: Basic.

Pillay, J. (2003). "Community psychology is all theory and no practice": Training educational psychologists in community practice within the South African context. *South African Journal of Psychology*, 33(4): 261-268.

Pretorius-Heuchert, J. W. & Ahmed, R. (2001). Community psychology: Past, present, and future. In J. Pillay, " Community psychology is all theory and no practice': Training educational psychologists in community practice within the South African context. *South African Journal of Psychology*, 33(4): 261-268.

Purkey, W.W. (1970). *Self-concept and school achievement*. New Jersey: Prentice-Hall.

Quay, H. C. (1979). Classification. In J. C. Coleman, J. N. Butcher & R. C. Carson (Eds), *Abnormal psychology and modern life*. United States of America: Harper Collins Publishers.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57,1069-1081.

Robbins, G., Powers, D. and Burgess, S. (1997). *A wellness way of life (Third Edition)*. New York: McGraw-Hill.

Rosenberg, M. (1979). *Conceiving the self*. New York: Basic.

Samuels, S.C (1977). *Enhancing self-concept in early childhood: Theory and practice*. New York: Human Sciences Press.

Saraceno, B. & Saxena, S. (2002), *Prevention and promotion in mental health*. Geneva: WHO.

Scully, D. (1998). Physical exercise and psychological well-being: a critical review. *British Association of Sport and Medicine*, 32, 111-120.

Scully, D., Kremer, J., Meade, M. M., Graham, R. & Dudgeon, K. (1998). Physical exercise and psychological well-being: a critical review. *British Journal of Sport Medicine*. 32: 111-120.

Seraganian, P. (1993). *Exercise Psychology.The influence of Physical Exercise on Psychological Processes*. USA: John Wiley & Sons.

Steinberg, L. D. & Silverberg, S. B. (1986). The vicissitudes of autonomy in early adolescence. *Child Development*, 57, 841 -851.

Stelter, R. (1998). The body, self and identity. Personal and social constructions of the self through sport and movement. *European Yearbook of Sport Psychology*, 2, 1-32.

Stelter, R. (2000). The transformation of body experience into language. *Journal of Phenomenological Psychology*, 31 (1), 63-77

Stelter, R. (2001). Unraveling the meaning of experience. In Papaioannou, A. Goudas, M. and Theodorakis, Y. (Eds.). *In the dawn of the new millennium* Proceedings of the 10th World Congress of Sport Psychology , 2, 10-12. Thessaloniki: Christodoulidi

Stephens, T. (1988). Physical activity and mental health in the United States and Canada: evidence from four population studies. *Preventive Medicine*, 17, 35-47.

Super, D. E. (1980). A life span, life space approach to career development. *Journal of Vocational Behaviour*, 16, 282 -298.

Tannahill, A. (2000). Integrating mental health promotion and general health promotion strategies. *International Journal of Mental health Promotion*, 2(1), 19-25

Thorogood, N. (1992). *What is the relevance of sociology for health promotion? Health promotion: discipline and diversity*. New York: Routledge.

Torres, R. and Fernandez, F. (1995). Self-esteem and the value of health as determinants of adolescent health behaviors. *Journal of Adolescent Health Care*, 16, 60-63.

Van den Aardweg, E. M. and Van den Aardweg, E. D. (1988). *Psychology of education. A dictionary for students*. Pretoria: E & E Enterprises.

Vrey, J. D. (1979). *The self-actualising educand*. Pretoria: Unisa.

Weinberg, R. S. and Gould, D. (1999). *Foundations of sport and exercise psychology*. Leeds: Human Kinetics.

Weiner, I. B. (1992). *Child and adolescent psychopathology*. Canada: John Wiley & Sons.

Wenar, C. (1994). *Developmental Psychopathology. From infancy through adolescence*. U.S.A.: McGraw-Hill. Inc.

Wicks-Nelson, R. & Israel, A.C. (2003). *Behaviour disorders of children (*Fifth Edition). New Jersey: Upper Saddle River.

Wiechers, E. and Prinsloo, E. (1994). *Psychology of education. Only study guide for OSI431-5*. Pretoria: UNISA.

Williams, M.H. (1996). *Lifetime fitness and wellness: a personal choice*. United States of America: Brown & Benchmark.

Wissing, M. P. & Van Eeden, C. (1997, September). *Psychological well-being: A fortigenic conceptualization and empirical clarification.* Paper presented at the Third Annual Congress of the psychological Society of South Africa, Durban, South Africa.

World Health Organization. (1946). Constitution. New York: WHO.

World Health Organisation. (1984). *Health Promotion. A discussion document on the concept and principles*. Copenhagen: WHO.

World Health Organisation. (1986). Ottawa Charter for Health Promotion. Geneva: WHO.

World Health Organisation. (1998). *Social determinants of health. The solid facts*. Copenhagen: WHO.

Annexure A

The Behaviour Rating Form The Teacher Rating Scale Items

This Behaviour Rating Form contains a list of descriptive words and phrases. Some of these items will describe the referred student quite well. Some will not. What we wish to know is this: Which of these behaviours are you concerned about at this particular time and to what extent do you see them as problems?

Take for example, Item 1, "Is sent to the principal for discipline." If the student frequently is sent to the principal's office, the rater might check the "Very Much Like the Student" space. If the student is sent to the principal's office on an infrequent but regular basis, the rater might check the "Somewhat Like the Student" space. If the student has been sent to the principal's office on rare occasions, a check in the "Not Much Like the Student" space might be appropriate. If the student never has been disciplined by the principal, the "Not At All Like the Student" space would be indicated. These ratings should reflect your perception of the student's behaviour. Please do not confer with other teachers in completing this form.

	Very Much Like the Student	Like the Student	Not Much Like the Student	Not At All Like the Student
The student...				
1. Is sent to the principal for discipline.....				
2. Is verbally aggressive to teachers or peers.....				
3. Is disrespectful of others' property rights.....				
4. Tattles (gossips) on classmates.....				
5. Is lazy.....				
6. Lacks motivation and interest.....				

7. Disrupts the

classroom.....

8. Argues with teachers

and

classmates.....

9. Doesn't follow

directions.....

10.Steals.....

11.Has poor personal

hygiene

habits.....

12. Is passive and

withdrawing.....

13. Says that other children

don't like

him/her.....

14. Can't seem to

concentrate in

class.....

15. Pouts, whines,

snivels.....

16. is overactive and

restless.....

17.Is an academic

underachiever.....

18. Bullies other

children.....

19. Is self –

centred.....

20. Does not do homework

Assignments.....

21. Is kept after

school.....

22. Is avoided by other

students in the

class.....

23.Daydreams.....

24. Has unacceptable

personal

habits.....

25. Swears in

class.....

26. Has nervous

habits.....

27. Has no friends

among

classmates.....

28.Cheats.....

29. Lies to avoid

punishment.....

30. Doesn't follow

class

rules.....

Sum of Marks in each column = _____ _____ _____ _____

Multiply Sum by _x0___ _x1___ _x2___ _x3___

Add Products ___0___ +___ +_____ +_____

Total Points Scored = _____

Normative Table

Standard Score	Grades 1 -8	Grades 9 -10	Grades 11 -12	Percentile Rank
1	0-9	0-21	0-29	.1
2	10-13	22-26	30-39	.4
3	14-21	27-30	40-45	1
4	22-32	31-36	46-52	2
5	33-37	37-38	53-57	4
6	38-45	39-46	58-68	9
7	46-54	47-55	69-70	16
8	55-62	56-63	71-74	25
9	63-67	64-71	75-78	37
10	68-74	72-78	79-82	50
11	75-80	79-82	83-86	63
12	81-84	83-86	87-88	75
13	85-86	87-88	89	84
14	87-88	89	90	91
15	89-90	90		96
16				98
17				99

18				99.5
19				99.9
20				‹99.9
M	68.7	70.4	78.5	M
SD	17.7	17.2	11.2	SD
N	1047	179	127	N

Annexure B

Sport and exercise questionnaire

Name :

Age :

Gender :

Home Language :

A. Information on physical exercise

Answer the following questions:

1. Do you exercise and /or take part in sport?

Yes No

2. If yes , your favourite sport is: _____

3. You play your sport 2, 3, 4, 5, 6, 7, times a week and for _____ minutes.

B. Feelings Scale

The following set of questions deals with how you feel about yourself and your life. Answer **true** or **false**, remember that there is no right or wrong answer.

1. I like myself _____

2. I like to be with people so that I can learn new thing _____

3. I do not really think about the future _____

4. I learn new things about life everyday _____

5. I am happy about how life has been to me _____

6. I enjoy playing with others _____

7. People are not good to me _____

8. I do not care anymore what happens to me _____

9. I am going to work hard to make my life better _____

10. I have tried everything in life but nothing comes right _____

C. Physical Self Perception Scale (PSP)

The following statements describe people, if the statement describes you, answer **true** if it does not describe you answer **false**. Remember there is no right or wrong answer.

1. I am very good when it comes to playing sport _____

2. I am physically fit _____

3. I have a beautiful body _____

4. I am stronger than my friends _____

5. I can play rough sport _____

6. I do not like to exercise _____

7. I have strong muscles _____

8. I am not proud of my body _____

9. I am good at running _____

10. I am happy with the way I am _____

D. Wellness Profile

Tick the number that best describes how you are feeling right now

	Not at all	A little	Moderately	Quite a bit	Very
How anxious do you feel?					
How confused do you feel?					
How angry do you feel?					
How confident do you feel?					
How happy do you feel?					
How healthy do you feel?					
How strong do you feel?					
How stressed do you feel?					
In many ways my life is close to ideal.					

The conditions of my life are excellent.					
I am satisfied with my life.					
So far I have got the important things I want in life.					
If I could live my life over, I would change almost nothing.					

E. What does the following mean to you?

1. A healthy mind

---

2. A healthy body
