

***PSYCHOLOGICAL, PHYSICAL AND SOCIAL WELL-BEING IN AN
INDIVIDUAL AND TEAM SPORT: A PHENOMENOLOGICAL AND
QUANTITATIVE STUDY.***

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The author hereby declares that this study, unless otherwise indicated, is a result of his own work.

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Abstract

The purpose of this study was to investigate psychological, physical and social well being in a team and an individual sport. It has been contextualized within a broader public health paradigm with special reference to health and sport psychology. This new paradigm re-establishes a balanced view of both illness prevention and health promotion. To explore the relationship of psychological, physical and social well-being in a team and an individual sport, the study entailed a triangulation approach which consisted of a quantitative and a qualitative component of the team and the individual sport.

Psychological well-being was measured using Ryff's Psychological Well-Being Scale (PWB); physical well-being was assessed using the Physical Self-Perception Profile (PSPP) and social well-being was measured using the Perceived Social Support Scale from Family (PSS-Fa) and from Friends (PSS-Fr).

Results from the study indicated a significant relationship between perceived body attractiveness and surfing. Surfers perceived themselves as being more physically attractive and more confident in appearance. A higher importance of sport competence was recorded by the surfers which suggest that being able to master and ride the surf is important. More importance was placed on conditioning for the soccer players. Soccer was experienced as being a more competitive sport than surfing, and subsequently, more emphasis was placed on physical condition, stamina, fitness and confidence in ability.

Key Words

psychological, physical, social well-being, team and individual sport, surfing, soccer.

CHAPTER 1: GENERAL OVERVIEW

1.1 Introduction

The research was inspired by the World Health Organization's (1946) recognition of the importance of perceiving health not only as the absence of illness but a state of psychological, physical and social well-being. Similarly, mental health encompasses components of psychological, physical and social well-being.

1.2 Research Context

This study has been contextualized within a broader public health paradigm. The public health paradigm has gained increasing viability as an alternative, complimentary approach to the medical model. It re-establishes a balanced view of both illness prevention and health promotion. Mental health promotion is any action taken to maximize mental health and well-being among populations and individuals, whereas mental health prevention is concerned with avoiding illness. In 1986, the World Health Organisation defined health promotion as the process of enabling people to increase control over and to improve their health (WHO, 1986). Preventative and promotional elements can be present within the same programme and hold different meaning for the two groups of the targeted population. Thus, the two approaches may sometimes involve similar activities but produce different outcomes.

Drawing from researchers such as Caplan (1964), Antonovsky (1984), Strumpfer (1995, 1990) and Orford (1992), Edwards (2002) has proposed a holistic and integrative model for structuring mental and public health promotion through physical activity programmes. This model of mental health promotion is one of both illness prevention and health promotion, with special focus on optimising health, strength, competencies, skills, resources and supplies, towards an ever changing, dynamic balance of optimal

harmony and order. The model views health promotion as existing of three categories, namely: primary, secondary and tertiary (Edwards, 2002). Similarly, health prevention is also viewed as encompassing three categories, namely; primary, secondary and tertiary. Primary promotion is universal intervention to promote solutions for living and increase incidence of health in all persons and in all contexts. Primary prevention is universal intervention to prevent problems for living and reduce the incidence of illness in all persons in all contexts. Secondary promotion is selective intervention to improve solutions for living and increase prevalence of health, strength and skills in persons of potential health in empowered contexts. Secondary prevention aims at prevention of problems in living and reduces prevalence of illness, disability and handicaps in persons at risk in disempowered contexts. Tertiary promotion is indicated intervention to improve solutions for living and increase prevalence of health, strength, skills and human rights for persons of much health potential in very empowering contexts. Tertiary prevention is indicated intervention to prevent problems in living and decrease illness, disability, handicap and human rights abuses in persons at risk in very disempowering contexts (Edwards, 2002). This study focuses its attention on secondary mental health promotion and prevention.

The study was especially inspired by recent research on the influence of physical activity, exercise and sport on mental health. There have been various studies of psychological well being and physical self perception but social aspects have been relatively neglected. The study aims to address this aspect with special reference to a team and individual sport. Soccer players have been chosen as representative of a team sport and surfers as representative of an individual sport. The differences that participation in surfing or soccer may have on psychological, physical and social well being will be investigated.

1.3 Psychological Well-Being

Ryff (1989) conceptualises psychological well-being as a positive component of mental health which can be viewed as a multi-faceted domain encompassing six distinct components, namely; positive self-regard (self-acceptance), mastery of the surrounding environment (environmental mastery), quality relations with others (positive relations with others), continued growth and development (personal growth), purposeful living (purpose in life), and capacity for self-determination (autonomy) (Ryff & Keyes, 1995). Research with Ryff's (1989) scale has revealed that psychological well-being develops through a combination of emotional regulation, personality characteristics, identity and life experience (Helson & Srivastava, 2001), increases with age, education, extraversion and conscientiousness and decreases through neuroticism (Keyes, Shmotkin & Ryff, 2002).

1.4 Physical Well-Being

Physical well-being may be conceptualised as a component of psychological well-being. Fox (1990) has developed a physical self-perception profile (PSPP), which describes physical self-perception in terms of five categories, namely; sport competence, physical condition, body attractiveness, physical strength and overall physical self-worth. Sport competence refers to perceptions of sporting ability, ability to learn sport skills and confidence in a sporting environment. Physical condition includes perceptions of level of physical condition, stamina and fitness, ability to maintain exercise and confidence in exercise setting. Body attractiveness refers to perceived attractiveness of physique, ability to maintain an attractive body and confidence in appearance. Physical strength includes perceived strength, muscle development and self-assurance in situations requiring strength. Physical self-worth is a global measure of physical self-perception, which includes general feelings of happiness, satisfaction, pride, respect and confidence in the physical self (Fox, 1997; 1990). The Physical Self Perception Profile (PSPP) includes a Perceived

Importance Profile (PIP), which is linked to physical self-perception and has an impact on an individual's global self-esteem (Fox, 1997; 1990). The amount of importance that an individual attaches to different aspects of the self may also have significance in describing individual differences in self-esteem content and structure.

The structure of global self-esteem is hierarchical in nature (Marsh & Shavelson, 1985; Shavelson, Hubner & Stanton, 1976). The importance attached to such aspects of physical self-perception as sport competence, *physical condition, body attractiveness and physical strength* contributes to *physical self-worth*. In turn, the importance attached to physical self-worth contributes to global self-esteem. The PSPP and the PIP in combination provide great insight into the part that physical self-worth plays in people's global self-esteem, and into their motivations to participate in physical exercise (Fox, 1990). The PSPP is an indicator of psychological health and well-being of particular relevance in various health, physical activity, exercise and sport settings and has been extensively used in cross-cultural research (Asci, Asci & Zorba 1999; Fox, 1990, 1997, 2000a, 2000b).

1.5 Social Well-Being

Social well-being may be conceptualised according to individuals' perception of social support. Procidano and Heller (1983) conception of perceived social support is understood as the extent to which the individual perceives that his/her needs for support, information and feedback are fulfilled by friends and family. The *perception of social support plays an important role in coping behaviour of individuals*. The perceived social support scale from family (PSS-Fa) and friends (PSS-Fr) was used to measure social well-being. Good social networks and relationships are often associated with lower risk of premature death and greater well-being. However, little is known about the potential of physical activity to alleviate social exclusion (i.e. where

communities or individuals suffer from clusters of problems such as poor education, housing, employment and health) or to enhance social outcomes (such as increased social interaction and feelings of 'community'). It is likely that the impact of physical activity on such social outcomes is greater than the limited evidence base suggests. Many community-based projects involving physical activity programs have been carried out, but they have rarely been rigorously evaluated and results are rarely published in scientific journals (Acheson, 1998).

1.6 Sport

Physical activity is an umbrella term that encompasses both physical exercise and sport. Physical exercise is volitional, planned, structured and repetitive and is aimed at the improvement or maintenance of an aspect of fitness and health (Department of Health, Physical Activity, Health Improvement and Prevention, 2004). Fox, Boutcher, Faulkner and Biddle (2000) refer to sport as physical activity that involves structured recreational or competitive situations governed by rules (cited in Biddle, Fox & Boutcher, 2000). More specifically, an individual sport refers to individually oriented physical exercise which may or may not involve others and/or be competitive in nature, whereas a team sport is defined as exercise involving a collective of two or more people with common interests, perceptions and goals and who consider themselves to be a group (Carron & Hausenblas, 1998; Horn, 2002).

1.7 Research Design

A comparative study was conducted which consisted of a quantitative and a qualitative component of the sports under investigation. The quantitative component consisted of a collection of psychological, physical and social well being data from samples of 30 soccer players and 30 surfers. This was followed by a qualitative phenomenological analysis where 3 participants from the surfing and 3 from the soccer sample

were selected according to qualitative research criteria, whereby the participants were known, formed a good relationship with the researcher, had experience of the sport under investigation, insight into their experiences and a willingness to discuss. Interviews consisted of the participants' indepth exploration with regards to the meaning their sport has in their lives and the relationship that it has on psychological, physical and social well-being.

In addition to testing the stated hypotheses, further exploratory correlations were conducted between the individual and team sport.

Results from this study were then compared with results from recent research conducted by Edwards, Ngcobo, Edwards and Palavar (2005) in which comparisons between health club members, hockey players, runners and a control group of non-exercising students were investigated on the psychological well-being and physical self-perception scales.

1.8 Sample Group

A convenience sample was selected based on participants' involvement in the sports that were under investigation. Thirty soccer players were selected from the soccer team at the University of Zululand and from the Fynnlans soccer club in Durban along with 30 surfers from Durban. The researcher approached both soccer teams and selection was based on the athletes' willingness to participate. The surfers in Durban were selected in the same manner. Three participants from each sample were then included in a phenomenological analysis in order to gain a more indepth understanding of their experiences in their sport.

1.9 Psychometric Instruments

Ryff's 3-item Psychological Well-Being Scale (PWB) was used to objectively assess the participants on six dimensions of psychological well-being, namely: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth.

Physical Self-Perception Profile (PSPP) was used to assess participants on five subscales each composed of six questions, namely: sport competence, physical condition, body attractiveness, physical strength and physical self-worth. The Perceived Importance Profile (PIP), which was constructed to accompany the PSPP provides a measure of importance attached by individuals to their respective levels of sport competence, body attractiveness and physical strength.

The Perceived Social Support from Friends (PSS-Fr) and from Family (PSS-Fa) scale was used to assess the participants' social well-being.

1.10 Research Hypotheses

The hypotheses are:

- 1) Participants from the soccer and surfing sample will have different psychological, physical and social well-being profiles,
- 2) The team sport is hypothesized to show a higher perceived social support profile than the individual sport,
- 3) The male participants from both sports are expected to show higher physical self-perception scores than the female participants,
- 4) The older age group of both the surfing and soccer participants are expected to show higher levels of psychological well-being.

5) Increased levels of overall well-being are expected to be associated with higher frequency, duration and intensity exercise scores.

1.11 Statistical Procedures

The Statistical Package for the Social Sciences (SPSS) was used to analyse data. Quantitative data is presented in mean tables and a correlational matrix, followed by interpretations. Qualitative data was analysed in terms of phenomenological method in natural meaning units, ie. smallest natural occurring units of experience.

1.12 Value of the study

It is envisaged that results will show variations that involvement in surfing and soccer may have on an individual's psychological, physical and social well being. Highlighting the impact that sport has on overall mental health may assist in the development of mental health programmes and community interventions. Community interventions that emphasis the use of sport may aim at social aspects such as social cohesion, social support, social interaction and harmony through shared community experience.

1.13 Summary

The essence of this chapter has been concerned with a general introduction to the study. Chapter two will encompass the literature review of the concepts of psychological well-being, physical self-perception, social well-being and exercise and sport. Chapter three entails the research methodology, with Chapter four focusing on results and discussion. Chapter five presents the conclusion and recommendations.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The use of 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 interventions (Edwards 2000b, 2001a, Fox 2000, Morris & Sommers 1995, Weinberg & Gould, 1999). Most studies have indicated that individual and team, resistance and aerobic activities are generally related to improved mental health, well-being and physical self-perception (Edwards, Ngcobo, Edwards & Palavar, 2005).

In a qualitative, phenomenological study by Edwards (2001b), a culturally diverse sample of Australian and South African postgraduate students and staff completed an open-ended questionnaire on the exercise experience and its community effects before taking part in focus group discussions. A great variety of positive aspects were reported, essentially describing an holistic, enjoyable, experience of well being characterized by healthy, bodily feelings with enhanced movement, energy, mood, consciousness, social and spiritual behaviour. Afterwards, there were satisfying feelings of achievement, refreshment, revitalization, self-responsibility, accountability, social harmony, mild to extreme euphoria and perceived health. There was also the enjoyment of challenges, channelling of energy, relaxation, calmness, happiness, stability, improved self esteem, self- actualization, problem-solving, sleep, diet, weight control, mental alertness, mental and physical flexibility and balanced individual, familial and social life.

2.2 Psychological Well-Being

The psychological well-being tradition draws much emphasises on the formulation of human development and existential challenges of life (Keyes, Shmotkin & Ryff, 2002). The theoretical formulation of psychological well-being is based on theorists such as Erik Erikson (1959) and Bernie Neugarten (1973) who articulated age-graded tasks and the way they are negotiated, Maslow's (1968) conception of self-actualisation, Rogers' (1961) view of the fully functioning person, Jung's (1933) formulation of individuation and Jahoda's (1958) six criteria of positive mental health (Keyes, Shmotkin & Ryff, 2002; Ryff, 1989; Ryff & Keyes, 1995). These multiple perspectives of human development and models of positive health have served as a theoretical foundation to generate a multidimensional model of well-being (Ryff, 1989b, 1995). Ryff's (1989) Psychological Well-being Scale encompasses six distinct dimensions of positive psychological functioning. The dimensions include positive evaluation of oneself and one's past life (self acceptance), a sense of continued growth and development as a person (personal growth), the belief that one's life is purposeful and meaningful (purpose in life), the possession of quality relations with others (positive relations with others), the capacity to manage effectively one's life and surrounding world (environmental mastery), and a sense of self-determination (autonomy). These dimensions draw much similarity to Jahoda's criteria (Jahoda, 1958). Ryff (1989) includes the dimensions of positive relations with others and purpose in life whereas Jahoda (1958) takes into account personal integrity and perception of reality.

In a study conducted by Ryff and Keyes (1995), the six dimensions that encompass psychological well-being were tested with data from a nationally representative sample of adults. The respondents were divided into three age groups: young adults, between 25 and 29 years old, midlife adults, between 30 and 64 years old and older adults, 65 years and older. Mean-level analyses replicated many findings previous obtained by

similar studies. Purpose in life and personal growth showed significantly lower scores than those of the two younger age groups. Environmental mastery showed age increments with the two older age groups scoring significantly higher than the younger group. Self acceptance recorded no change with age. Positive relations with others recorded increments with age and autonomy showed age increments but only from young adulthood to midlife. The only scale that showed significant sex differences was positive relations with others with women scoring higher than men.

Research has demonstrated that psychological well-being is promoted through regular exercise and sport, which occurs for at least twenty minutes a day, three or more times a week (Edwards *et al*, 2005). A study conducted by Edwards (2002), on psychological wellness and regular exercise in samples of health club members and university students in Zululand, South Africa, found that health club members were more psychologically well than students. Whether they were members of a health club or not, participants who were regular exercisers were found to be more psychologically well than irregular exercisers.

Studies show that, independent of socioeconomic or health status, physically active people feel happier and more satisfied with life (Biddle, 2000; cited in Biddle, Fox & Boutcher, 2000). According to Taylor (2000), higher levels of physical activity are associated with higher subjective well-being, mood and emotions, life satisfaction and quality of life. A large number of experimental studies, most of which use aerobic forms of exercise, indicate that a single bout of physical activity can result in improved mood and vigour (cited in Biddle, Fox & Boutcher, 2000).

Ekkekakis, Hall, VanLanduyt and Petruzzello (2000) reported that the strongest evidence for improvement in mental well-being is from bouts of moderate intensity activity which last between 20 and 60 minutes (cited in

Department of Health, Physical Activity, Health Improvement and Prevention, 2004). The types of exercise which seem to be most consistently effective are rhythmic aerobic forms of exercise, such as brisk walking, jogging, cycling, swimming or dancing. Resistance exercise may be useful for enhancing self perceptions, as it can have rapid effects on how the body feels and functions. According to Arent, Landers and Etnier (2000), larger effects in improving mood have been found for resistance training compared with aerobic exercise in older adults. Competitive sports and vigorous forms of exercise are an important source of psychological well-being for those who are already accustomed to this type of activity. Group recreational sports and activities are also likely to bring social and mood benefits (cited in Department of Health, Physical Activity, Health Improvement and Prevention, 2004).

Steptoe and colleagues (Steptoe & Bolton, 1988; Steptoe & Cox, 1988; Moses, Steptoe, Matthews & Edwards, 1989) (cited in Biddle, 2000) showed in three studies that moderate, not high intensity exercise enhances mood. Parfitt, Markland and Holmes (1994) supported these findings that high intensity exercise results in significantly worse feeling states in less active individuals (cited in Biddle, 2000). Ragin (1997), suggests that high intensity exercise may delay anxiety reductions after exercise (cited in Biddle, 2000). Steptoe's research, however suggests that although there seems to be an increase in negative mood following high exertion, positive mood is still enhanced some time later. Boutcher, McAuley and Couneya (1997) reported greater positive affect after aerobic treadmill exercise amongst trained individuals as compared to untrained individuals thus suggesting that the fitness level of the individual may account for post exercise affective responses (cited in Biddle, 2000).

In 1992, the International Society of Sport Psychology endorsed the position statements earlier issued by the American National Institute of Mental Health which described the link between regular exercise and

psychological well-being. Psychological dysfunctions such as depression, anxiety and stress can benefit from involvement in physical activity. The evidence for a significant and positive relation between physical activity and psychological variables is taken as compelling for mentally healthy individuals but seen as even stronger for the psychiatric population (Scully, Kremer, Meade, Graham & Dudgeon, 1998). A meta-analysis study based on 80 studies conducted between 1969 and 1989, and included 290 effect sizes in their analysis. The results provided positive support for a relation between physical exercise and depression. It was concluded that acute and chronic exercise effectively reduced clinical depression (North, McCullagh & VuTran, 1990). All groups of participants, regardless of gender, age, health status, experienced the anti-depressant effects of exercise, with the greatest benefit noted among those experiencing medical and psychological care (Scully, Kremer, Meade, Graham & Dudgeon, 1998).

In a study on the anxiolytic effects of exercise, Lannders and Petruzzello (1994) concluded that regardless of anxiety measures taken or exercise regimen invoked, the results indicated a consistent relationship between exercise and anxiety reduction. Meta-analysis conducted by Long and Stavel (1995), with regards to those who are coping with stress and those who are not, concluded that aerobic exercise was effective in reducing anxiety, particularly those experiencing chronic work stress. Fox (2000) reported overwhelming and convincing evidence that both aerobic and resistance exercise are as effective as psychotherapy in the treatment of depression, anxiety and stress. There is clear evidence that appropriate exercise interventions improve general health, quality of life, subjective well being, self-esteem and self-perception (Fox 2000).

2.3 Physical Well-Being

Physical self-perception may be viewed as a sub-set of physical self-worth and in turn a sub-set of global self-esteem, well-being, health and life. Physical self-worth acts as a mediator between the relationship of physical self-perception and self-esteem and is a valuable indicator of the general well-being of the individual in the physical domain (Fox, 1990, 1997, 2000a).

Self-esteem research has moved through many phases over the years, initially being conceptualised as a unidimensional construct whereby assessment instruments would measure an individual on a host of rated personal qualities and abilities in a wide range of life settings (Coopersmith, 1967; Piers, 1969). The total of all the items would thus provided an individuals' self-esteem score. Rosenberg (1979) highlighted that to simply add up the parts in assessing global self-esteem ignores the complex relationship between the parts, the combination and their weighting attached to each separate part. The multidimensional view of self-esteem recognises the complexity of self-esteem and the importance of self-perception. This model of the self indicates the integral part that the physical self plays in the structure of the whole self. The Physical Self-Perception Profile (PSPP) represents the multidimensional view of the self and allows for the study of the relationships among the different domains and with a global self-esteem.

A growing number of studies have suggested that individuals may adapt their self-esteem structure and content by the importance they attach to aspects of self-perception and thus only those aspects of the self which are considered important will have a significant impact on global self (Harter, 1986; Rosenberg, 1982; Watkins & Park, 1972). Harter (1985a) describes the phenomenon of discounting, a self-serving mechanism in which areas of low competence are attached low importance and thus does not impact significantly on the self-esteem. This is known as the importance-competence discrepancy. The construction of the Perceived

Importance Profile (PIP) (Fox, 1990) to accompany the PSPP reflects these foregoing ideas in self-esteem research and enables further investigation into the constructs of the PSPP.

The PSPP was developed through a sequence of pilot studies, instrument trials and modifications. Data was obtained through research carried out with students at a University in Illinois. The mean age across the samples was 19.7 years. Further data was obtained from students at a college in Missouri. The mean age was 23.2 years. The three samples were comprised of both male and female groups. Sample A, male (n=128), female (n=106), sample B, male (n=180), female (n=175), sample C, male (n=75), female (n=150). These norms indicated that all samples illustrated significant differences with females scoring lower than males in all subscales (Caglar, Karaca & Cinemre, 2001; Hayes, Crocker & Kowalski, 1999). Maschette and Sands (2001) indicated that males and females focus on different body areas after exercising. Girls were found to have a higher fat perception and body dissatisfaction than boys (Silva, Borrego & Matros, 2001) thus impacting on their physical self worth.

Taylor and Fox (in press) demonstrated in randomized controlled trials that physical activity contributes to positive changes in self-perceptions in all ages (cited in Department of Health, Physical Activity, Health Improvement and Prevention, 2004). Positive changes are seen in overall physical self-worth as well as specific aspects of physical self-perceptions such as body image, perceived fitness and strength. According to Fox (2000) the degree to which changes in physical self-perception are accompanied by improvements in overall feelings of worth or general self-esteem is variable (cited in Department of Health, Physical Activity, Health Improvement and Prevention, 2004).

Recent research conducted by Edwards *et al* (2005), compared psychological well-being and physical self-perception of persons who regularly engaged in various forms of physical activity, exercise and sport with a control group of non-exercisers. Comparisons between health club members, hockey players, runners and a control group of non-exercising students revealed that all three forms of physical activity were associated with higher scores on the psychological well-being and physical self-perception scales than the control group. More specific findings were that persons engaging in regular physical activity perceived themselves to be having more autonomy, personal growth, environmental mastery, purpose in life, positive relations with others, self-acceptance, sport competence and conditioning than non-exercisers. Regular exercisers also attached more importance to sport, conditioning, body attractiveness and strength than non-exercisers. The findings highlighted the importance of the relationship between social or team sport factors and physical activity. Hockey players perceived themselves as having more positive relations with others and sport competence than either health club members or runners. These findings support and extend health promotion research on the general beneficial effects of team and individual, aerobic and resistance orientated physical activity, exercise and sport on mental health, psychological well-being and physical self-perception.

2.4 Social Well-Being

A substantial amount of research has been conducted which indicates the role that stressful life has on the development of physical and psychological problems. One potential moderator of the effects of life stress is physical fitness (Roth & Holmes, 1985). In addition to the well accepted notion that physical fitness generally enhances physical health, a variety of research has suggested that fitness training programs lead to improved psychologic functioning (Roth & Holmes, 1985). Research conducted by Roth and Holmes (1985) examined the utility of stressful life events and physical fitness for predicting physical and psychologic problems. It was found that individuals who experienced high life stress were more likely to experience

subsequent physical and psychologic health problems than individuals who experienced low life stress. Among individuals who were exposed to high life stress, only those who were relatively low in physical fitness developed more problems with physical health and depression. Individuals who experienced high levels of life stress and were physically fit, did not develop more physical health problems than did individuals who did not experience high levels of life stress (Roth & Holmes, 1985).

Sinyor, Sandra, Schwartz, Peronnet, Brisson and Seraganian (1983) demonstrated that aerobically trained persons were able to recover faster from experimentally induced psychosocial stress than untrained persons on physiological, biochemical and psychological measures. Various similar physiologically orientated studies have demonstrated similar effects (Anshel, 1996; Scully, 1998; Summers, 1999). Related studies by Roth and Holmes (1987; 1985) have indicated that physical fitness moderates the stress–illness relationship and that increasing fitness, through aerobic training, decreases the experience of stressful life events. Moderate intensity of physical activity can reduce the short-term physiological reactions to brief psychosocial stressors (Department of Health, Physical Activity, Health Improvement and Prevention, 2004).

The quality of the social environment has far-reaching effects on the human capacity to cope (Mechanic, 1974). Supportive relationships with family and friends may be crucial in sustaining individuals through life crises (Caplan, 1974). One assumption in community mental health practice is that while some stressors can neither be avoided nor modified, interventions which increase available social supports can facilitate coping in the face of stress (Caplan & Killilea, 1976; Silverman & Murrow, 1976).

The role of social agents as additional determinants of psychological well-being indicates the need to promote social exercise and team sport in particular (Edwards *et al*, 2005). In a study conducted by Procidano and Heller (1983), perceived social support from friends (PSS-Fr) and family (PSS-Fa) were both inversely related to symptoms of distress and psychopathology. This relationship was stronger for family. PSS-Fr was closely related to social competence. High PSS-Fr subjects were significantly lower in trait anxiety and talked about themselves more to friends and sibs than low PSS-Fr subjects. Low PSS-Fa subjects showed marked verbal inhibition with sibs. Perceived social support refers to the impact that social networks have on an individual, thus providing a buffering effect on stressful life events which are detrimental to one's physical and psychological health (Procidano & Heller, 1983).

2.5 Summary

This chapter has explored the literature on the concepts of psychological well-being, physical well-being, social well-being and exercise and sport. There is general consensus in the literature that regardless of the type of exercise or sport that the individual is involved, higher levels of well-being are obtained compared to individuals who are not involved in regular exercise or sport.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The following chapter contains information regarding the type of research and sampling procedures utilised in this study in order to explore the constructs of psychological, physical and social well-being in surfers and soccer players.

3.2 Research Design

The study entailed a triangulation approach which consisted of quantitative and a qualitative component for both the team and the individual sport. This enabled a more holistic and deeper understanding of the sports under investigation. The comparative component consisted of a collection of psychological, physical and social well-being data from samples of 30 surfers and 30 soccer players. The qualitative phenomenological analysis consisted of 3 participants from the surfing and 3 participants from the soccer sample and were selected according to qualitative research criteria, whereby the participants where known, formed a good relationship with the researcher, had experience of the sport under investigation, insight into their experiences and a willingness to discuss. Interviews consisted of participants' indepth exploration with regards to the meaning their sport has in their lives and the relationship that it has on psychological, physical and social well-being. Common phenomenological experiences were coded according to smallest natural occurring units and summarized to gain a perspective of the surfing and soccer experience.

3.3 Sampling

A non-random convenience sample was chosen to investigate the two sports. The rationale for selecting this sampling technique was based on the availability of participants at the University of Zululand and in Durban.

Participants were selected based on their involvement in the sports that was under investigation and their willingness to participate in the study. Thirty soccer players were selected from the soccer team at the University of Zululand and from the Fynnlans soccer club in Durban. Thirty surfers from Durban, who were known to the researcher and willing to participate, were selected for the surfing sample. The surfing sample involved 26 male and 4 female participants, aged between 20 and 34 years old. The average ages of the participants were 25 years old. The soccer sample comprised of 19 male and 11 female participants, aged between 18 and 29 years old. The study is based on the assumption that the convenient samples of surfing and soccer would represent an individual and team sport and that sufficient sample sizes which represent the sports would cancel out any possible confounding of variables.

Results from this study were then compared with results from recent research conducted by Edwards, Ngcobo, Edwards and Palavar (2005). In this study, comparisons between health club members, hockey players, runners and a control group of non-exercising students on the psychological well-being and physical self-perception scales were investigated.

3.4 Psychometric Instruments

The well-being questionnaire included biographical data and the use of the following scales; the Psychological Well-Being Scale (PWB), Physical Self-Perception Profile (PSPP) and the Perceived Social Support Scales from Friends (PSS-Fr) and Family (PSS-Fa). The biographical data captured the age, gender, occupation and language of the participant in addition to the type of sport, the frequency, duration and intensity. The frequency, duration and intensity scores were divided into two levels according to the means attained from the 60 participants. The questionnaires were written in English. This choice of language posed no apparent difficulties to the Zulu speaking participants who were well educated.

3.4.1 Psychological Well-Being Scale

Ryff's 18 item Psychological Well-Being Scale (PWB) was used to objectively assess the participants on six dimensions of psychological well-being, namely: autonomy (a), personal growth (pg), environmental mastery (em), purpose in life (pl), positive relations with others (pr) and self-acceptance (sa). The combined scores can also provide an overall well-being total. The scale is presently regarded as the best objective measure of psychological well-being (Conway & Macleod, 2002) and has received extensive cross-cultural validation (Staudinger, Baltes & Fleeson, 1999). The 18 item scale used in this study is a shortened version of Ryff's 120 item scale. Participants were required to respond to questions ranked from "strongly agree" to "strongly disagree".

The six subscales have high levels of internal consistency and high correlation with the 20-item parent scale. The levels of internal consistency and correlation with the parent scale are listed respectively. Autonomy .83 and .97, personal growth .85 and .97, environmental mastery .86 and .98, purpose in life .88 and .98, positive relations with others .88 and .98 and self-acceptance .91 and .99.

Autonomy (a): Higher scorer: the individual is self-determining and independent; able to resist social pressures to think and act in certain ways; regulate behaviour from within; evaluates self by personal standards.

Low scorer: the individual is concerned about the expectations and important decisions; conforms to social pressures to think and act evaluations of others; relies on judgements of others to make in certain situations.

Personal growth (pg): High scorer: the individual has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realizing one's potential; sees

improvement in self and behaviour over time; is changing in ways that reflect more self knowledge and effectiveness.

Low scorer: the individual has a sense of personal stagnation; lacks sense of improvement or expansion over time; feels bored and uninterested with life; feels unable to develop new attitudes or behaviours.

Environmental mastery (em): High scorer: the individual has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values.

Low scorer: the individual has difficulties managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world.

Purpose in life (pl): High scorer: the individual has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.

Low scorer: the individual lacks a sense of meaning in life; has few goals or aims; lacks sense of direction; does not see purpose of past life; has no outlook or beliefs that give life meaning.

Positive relations with others (pr): High scorer: the individual has warm satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection and intimacy; understands give and take of human relationships.

Low scorer: the individual has few close, trusting relationships with others; finds it difficult to be warm, open and concerned about others; is isolated and frustrated in interpersonal relationships; not willing to make compromises to sustain important ties with others.

Self acceptance (sa): High scorer: the individual possesses a positive attitude towards the self; acknowledges and accepts multiple aspects of self including good and bad qualities; feels positive about past life.

Low scorer: the individual feels dissatisfied with self; is disappointed with what has occurred in past life; is troubled about certain personal qualities; wishes to be different than what one is.

3.4.2 Physical Self-Perception Profile

Physical Self-Perception Profile (PSPP) was used to assess participants on five subscales each composed of six questions, namely: sport competence (sp), physical condition (co), body attractiveness (bo), physical strength (st) and physical self-worth (psw). Each of the thirty questions is sub-divided. The participant was required to select the statement most applicable to them and then tick off either “sort of true for me” or “really true for me”. The PSPP provides a multidimensional representation of an individual’s self-rating along several aspects within the physical domain. The development of the PSPP emerged from data gathered from a population of university students and has a high internal consistency of **.81** for males and **.92** for females.

Sport competence (sp): this subscale measures an individual’s perceptions of sport and athletic ability, ability to learn sport skills, and confidence in the sport environment.

Physical condition (co): the individual’s perception of the level of physical condition, stamina and fitness, ability to maintain exercise, and confidence in the exercise and fitness setting is measured by this subscale.

Body attractiveness (bo): perceived attractiveness of figure or physique, ability to maintain an attractive body and confidence in appearance is measured by this subscale.

Physical strength (st): this subscale measures perceived strength, muscle development, and confidence in situations requiring strength.

Physical self-worth (psw): general feelings of happiness, satisfaction, pride, respect, and confidence in the physical self.

3.4.3 Perceived Importance Profile

The perceived importance profile (PIP) was developed concurrently with the PSPP and is composed of four 2-item subscales, each assessing the perceived importance of the following physical self-perception subscales, namely; sport competence (spi), physical condition (coi), body attractiveness (boi) and physical strength (sti). The PIP is conceptualised as a filter between self-perception scores in each domain and physical self-worth.

3.4.4 Perceived Social Support Scale

The Perceived Social Support from Friends (PSS-Fr) and from Family (PSS-Fa) was used to assess the participant's social well-being. The scales each consist of 20-items where the participants were required to answer "yes", "no" or "don't know" to declarative statements regarding their perceived social support from both friends and family. The PSS-Fr has an internal consistency of **.88** and the PSS-Fa **.90**.

Perceived Social Support from Friends (PSS-Fr): this scale measures an individual's perception of social support from friends.

Perceived Social Support from Family (PSS-Fa): an individual's perception of social support from family is assessed.

3.5 Statistical Procedures

The Statistical Package for the Social Sciences (SPSS) was used to analyse correlations from the psychological well-being, physical self perception, perceived importance and perceived social support scales. Independent sample T-tests were conducted on the scores from the surfing and soccer participants. Quantitative results are presented in graphs, summary mean tables and in the correlational matrix. In the following results tables, dependent variables from the PWB, PSPP, PIP and PSS-Friends and PSS-Family scales are coded as follows: autonomy (a), personal growth (pg), environmental mastery (em), purpose in life (pl), positive relations with others (pr), self acceptance (sa), sport competence (sp), conditioning (co), body attractiveness (bo), strength (st), physical self worth (psw), importance of sport competence (spi), importance of sport conditioning (coi), importance of sport body attractiveness (boi), importance of sport strength (sti), and perceived social support friends (Fr) and family (Fa). The single (*) and double asterisks (**) indicate significant findings at the five and one percent level of significance respectively. Qualitative data were analysed in terms of phenomenological method involving natural meaning units.

3.6 Formal Hypotheses

Hypothesis 1: Participants from the soccer and surfing sample will have different physical, psychological and social well-being profiles.

Hypothesis 2: The team sport is hypothesized to show a higher perceived social support profile than the individual sport.

Hypothesis 3: The male participants from both sports are expected to show higher physical self-perception scores than the female participants.

Hypothesis 4: The older age group of both the surfing and soccer participants are expected to show higher levels of psychological well-being.

Hypothesis 5: Increased levels of overall well-being are expected to be associated with higher frequency, duration and intensity exercise scores.

3.7 Summary

The purpose of the present study was to investigate the differences between the individual sport, surfing and the team sport, soccer on psychological, physical and social well-being. Data was gathered from a non-random convenience sample of 30 surfers and 30 soccer players using self-administered questionnaires. Various statistical analyses of the data were computed using the Statistical Package for the Social Sciences (SPSS) in order to explore the significance of the hypotheses.

CHAPTER 4: RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results gathered from the self-administered questionnaires. Sample characteristics are presented, followed by the quantitative results which are illustrated using mean summary tables, graphs and a correlation matrix. The qualitative results follow illustrating the main themes that emerged from the interviews with the selected participants.

4.2 Sample Characteristics

Table 1 reflects the gender and age composite, table 2 illustrates the occupation composite followed by table 3 which shows the language composite of the research participants.

Table 1: Gender and age composition

Group	Number	Mean age	Minimum age	Maximum age
male	45	26.2	20.0	38.0
female	15	21.8	12.0	34.0
Total sample	60	25.1	12.0	38.0

Seventy five percent of the research sample were male (n=45). The male surfers made up 87% of the surfing sample. Sixty three percent of the soccer players were male. Females comprised of 25% of the research sample (n=15) with 37% of the soccer players and 13% of the surfers being female. The age for the male participants ranged from 20 yrs to 38 yrs and from 12 yrs to 34 yrs for the female participants. One-way ANOVA revealed a significant relationship between the male participants and importance of body attractiveness (**boi**) ($t=2.3$ $p=0.023^*$). No other significance was found on the other well-being scales. In

terms of age, significance was recorded on positive relations with others (**pr**) ($t=3.1$ $p=0.003^{**}$) and perceived social support from friends (**pss-fr**) ($t=4.6$ $p=0.000^{**}$) in favour of the participants 26 years and above.

Table 2: Occupation composition

Occupation	Number	Percent
Student	25	41.7
Other	35	58.3
Total sample	60	100

Students comprised 41.7% of the research sample ($n=25$). The remaining 58.3% ($n=35$) of the research sample was made up of the “other category”. This category included participants who were either employed or unemployed. One-way ANOVA recorded significance on perceived social support from friends (**pss-fr**) ($t=2.4$ $p=0.020^{**}$) and family (**pss-fa**) ($t=2.1$ $p=0.045^{**}$) in favour of the other category.

Table 3: Language composition

Language/ Race	Number	Percent
English/ white	44	73.3
Zulu/ black	16	26.7
Total sample	60	100

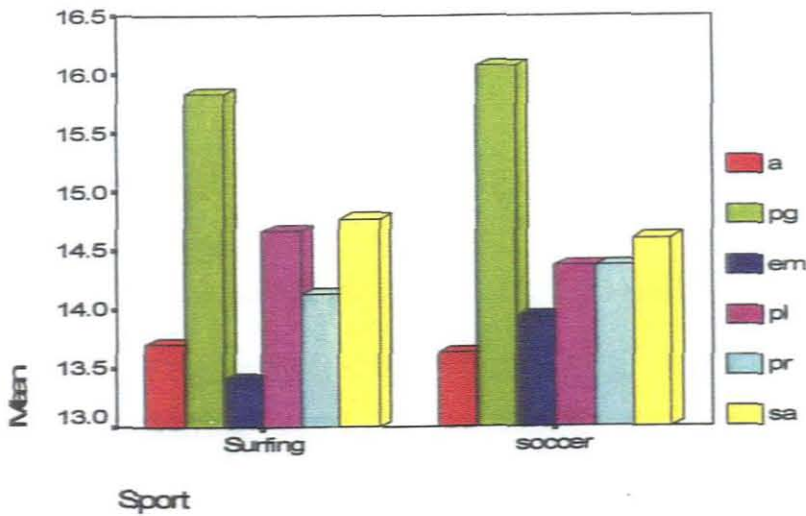
Seventy three percent of the research participants were White English speaking ($n=44$) and 26.7% of the participants were Black Zulu speaking ($n=16$). One-way ANOVA revealed no significant differences between language and dimensions on the well-being scales.

4.3 QUANTITATIVE RESULTS

Table 4: Mean scores of surfing and soccer on dimensions of psychological well-being, physical self-perception, perceived importance and perceived social support.

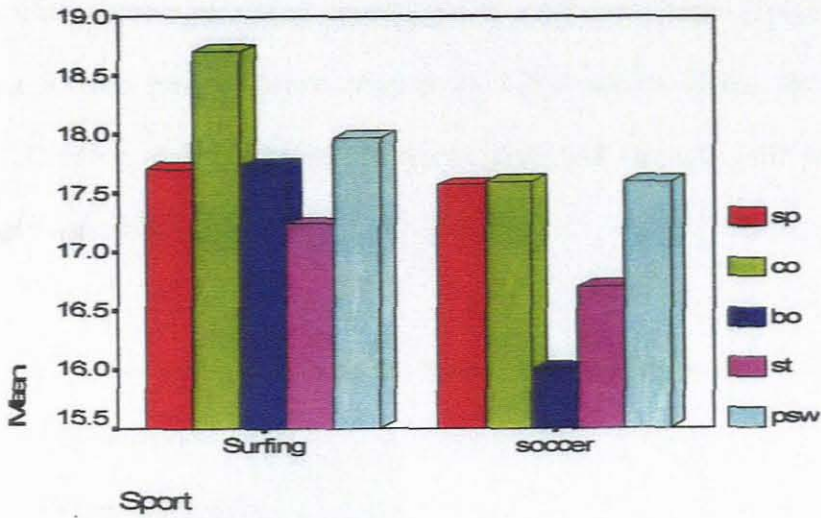
	a	pg	em	pl	pr	sa	sp	co	bo	st	psw	spi	coi	boi	sti	pss-fr	pss-fa
Surfing (N=30)	13.7	15.8	13.4	14.7	14.1	14.8	17.7	18.7	17.7	17.2	18	6.6	6.4	5.8	5.9	15	15.4
Soccer (N=30)	13.6	16	13.9	14.4	14.4	14.6	17.6	17.6	16	16.7	17.6	6.3	6.6	5.9	6	13.2	13.8
Surfing, male (N=26)	13.7	16.2	13.6	14.8	14	14.6	18.1	18.7	18.1	17.2	18.1	6.6	6.4	6.1	5.8	15.5	15.9
Surfing, female (N=4)	13.8	13.3	12.3	13.5	14.8	16	15.3	19	15.3	17.5	17.3	7	6.5	4.3	6	11.3	12
Soccer, male (N=19)	13.8	16	13.8	14.7	14.7	14.4	17.6	17.2	15.6	15.6	16.8	6.2	6.6	6.2	5.9	13.5	14.4
Soccer, female (N=11)	13.3	16.2	14.1	13.8	13.8	14.9	17.5	18.3	16.7	18.6	18.9	6.6	6.6	5.5	6	12.7	12.8

Figure 1: Mean scores between surfing and soccer on dimensions of psychological well-being.



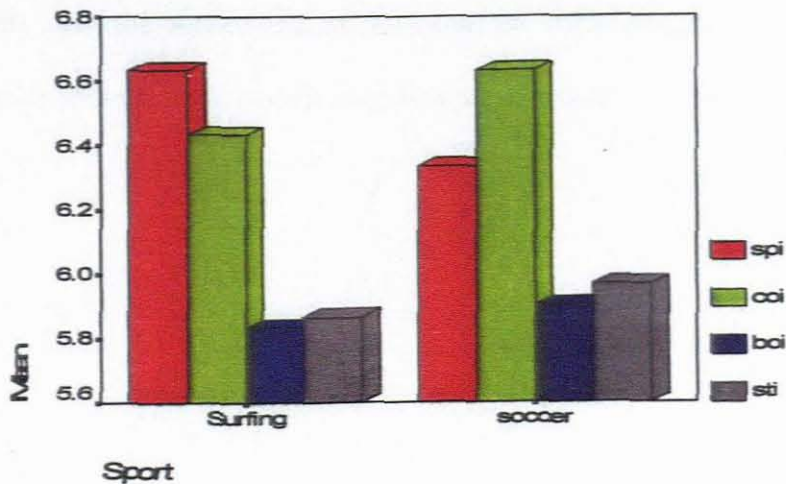
No significance was achieved between the surfing and soccer sample on dimensions of psychological well-being (table 1). A higher difference in mean scores for the surfing sample was revealed on purpose in life (pl) and self acceptance (sa). The soccer sample recorded a higher difference in mean scores on personal growth (pg), environmental mastery (em) and positive relations with others (pr) (fig 1).

Figure 2: Mean scores between surfing and soccer on dimensions of physical self-perception.



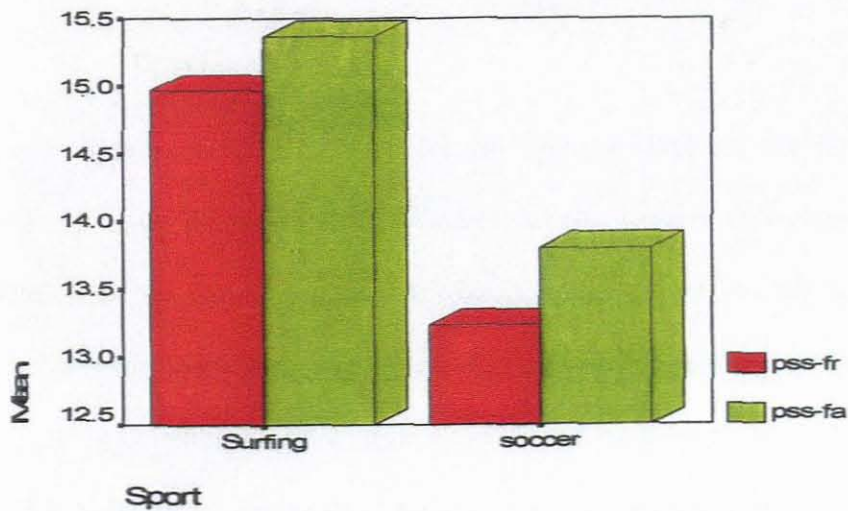
Differences were indicated on physical self-perception between the two sports. Surfing revealed a higher trend than the soccer players on all the physical self-perception dimensions, particularly on conditioning (co), body attractiveness (bo), strength (st) and physical self worth (psw) (fig 2). There was a significant relationship between the surfing sample and body attractiveness (bo) ($t=2.2$ $p= 0.035^{**}$). The soccer sample recorded no significant differences in mean scores.

Figure 3: Means scores between surfing and soccer on dimensions of perceived importance.



There were no significant differences in mean scores between the two samples on the perceived importance profile, however perceived importance of sport competence (**spi**) was more elevated for the surfing sample than for the soccer sample (**figure 3**). Mean scores of the soccer sample on perceived importance of conditioning (**coi**), body attractiveness (**boi**) and strength (**sti**) were higher than the mean scores of the surfing sample.

Figure 4: Means scores between surfing and soccer on dimensions of perceived social support.



The surfing sample had a higher trend of mean scores on perceived social support from both friends and family than the soccer sample, however no significant differences in mean scores were achieved. Both samples showed higher mean scores on perceived social support from family than from friends.

Figure 5: Number of male and female participants in the surfing and soccer sample.

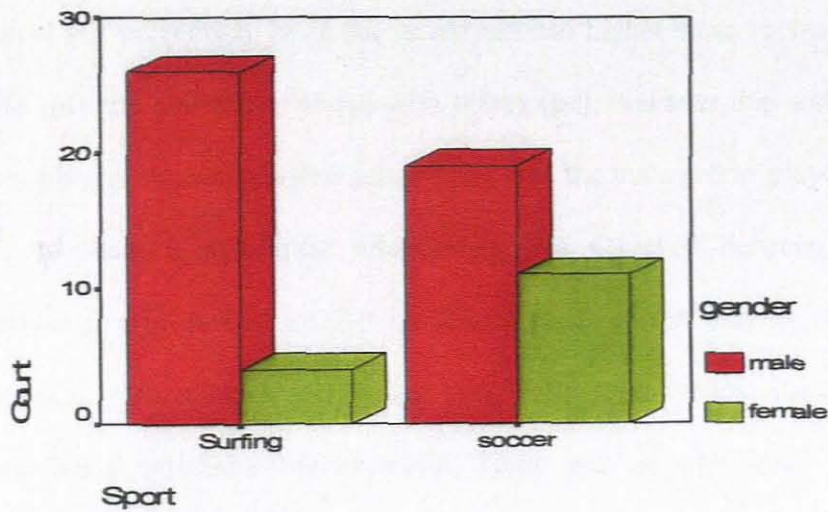


Figure 5, there were 26 male surfers and 4 female surfers in the surfing sample. In the soccer sample, there were 19 male players and 11 female players. Gender differences within the surfing sample revealed differences on psychological well-being, physical self-perception and perceived social support. On psychological well-being, the male surfers showed higher means scores than the female surfers in personal growth (pg), environmental mastery (em) and purpose in life (pl). Personal growth (pg) was significant ($t=3.0$ $p=0.005^{**}$) (table 4). Female surfers showed higher self acceptance (sa), however this was not significant. On physical self-perception, the male surfers had higher mean scores than the female surfers on the following: sport competence (sp), body attractiveness (bo) and physical self worth (psw). No significance was recorded. Female surfers had a higher mean score on conditioning (co) however there was no recorded significance. The importance of body attractiveness (boi) was significant in favour of the male surfers ($t=3.1$ $p=0.005^{**}$). The findings amongst the female surfers on the perceived importance profile revealed an importance-competence discrepancy on sport competence (sp) and importance of sport competence (spi). Perceived social support from friends (pss-fr) ($t=2.2$ $p=0.034^{*}$) was significant in favour of the male surfers.

Gender differences within the soccer sample indicated differences on both psychological well-being and physical self-perception. Male soccer players had higher mean scores than female soccer players on purpose in life (**pl**) and positive relations with others (**pr**), however this was not significant (**table 4**). The female soccer players showed a higher mean score than the male soccer players on self acceptance (**sa**). On physical self-perception, a significant relationship was achieved between the male soccer players and sport competence (**sp**) ($t=0.1$ $p=.001^{**}$). The female soccer players had a higher profile on physical-self perception, particularly, conditioning (**co**), body attractiveness (**bo**), strength (**st**) and physical self worth (**psw**). No significance was recorded. There was no significant difference recorded on the perceived importance profile (**table 4**), however the male soccer players did show importance-competence discrepancies in scores between body attractiveness (**bo**) and strength (**st**) and the respective importance profiles, namely (**boi**) and (**sti**). Findings among the female players did not indicate such discrepancies. Male participants showed a higher profile on the perceived social support scales than the female participants, however there was no significance recorded.

Male surfers were further compared to male soccer players on overall well-being. There were 26 male surfers and 19 male soccer players. A higher trend in scores was noticed on both physical self-perception aspects and the perceived social support scale in favour of the surfing participants, however only body attractiveness (**bo**) was significant ($t=2.9$ $p=0.006^{**}$) (**table 4**).

Female surfers were also compared with female soccer players on overall well-being. There were 4 female surfers and 11 female soccer players. A higher trend was recorded with the female soccer players on physical self-perception however no significance was recorded on any of the scales (**table 4**).

Table 5: Mean age scores of all participants on dimensions of psychological well-being, physical self-perception, perceived importance and perceived social support.

Age	a	pg	em	pl	pr	sa	sp	co	bo	st	psw	spi	coi	boi	sti	pss-fr	pss-fa
Surfing																	
25 (N=10)	13.2	15.3	13.2	14.6	12.3	14	17.5	18.6	17.6	16.4	18	6.6	6.9	5.5	6.1	12.3	13
26 (N=20)	14	16.1	13.5	14.7	15.1	15.2	17.8	18.8	17.8	17.7	18	6.7	6.2	6	5.8	16.3	16.6
Soccer																	
25 (N=23)	13.7	16.0	13.7	14.2	13.7	14.7	17.2	17.9	15.8	16.8	17.7	6.6	6.7	6.1	6.1	12.0	13.9
26 (N=7)	13.3	16.1	14.9	14.9	16.6	14.1	18.7	16.6	16.6	16.4	17.3	5.3	6.6	5.3	5.6	17.1	13.6

Figure 6: Number of participants in the surfing and soccer sample on age.

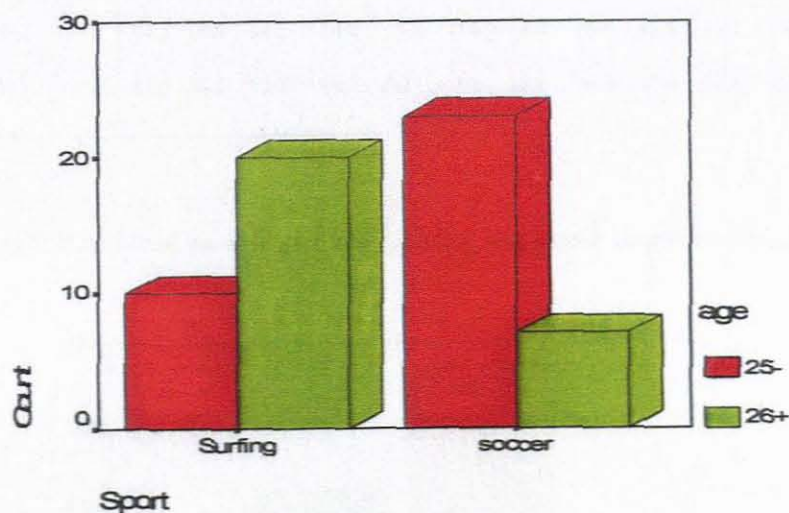


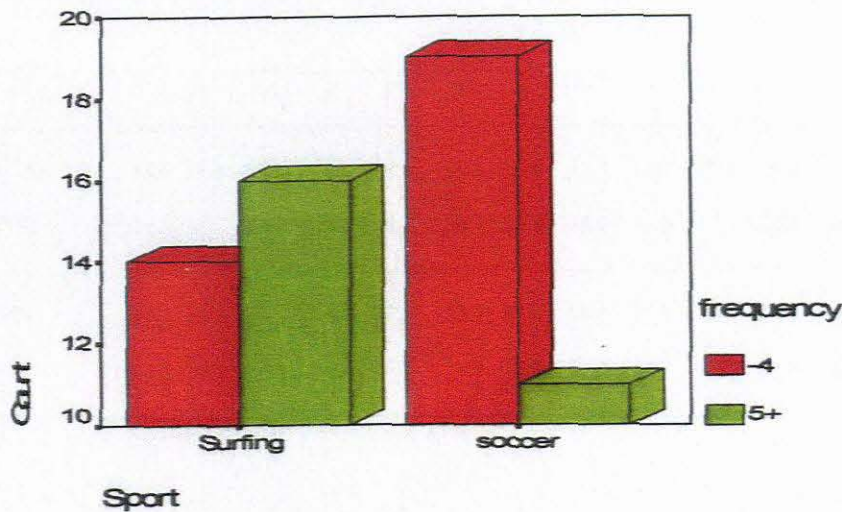
Figure 6, there were 10 participants below the age of 25 and 20 participants above the age of 26 in the surfing sample. The soccer sample comprised of 23 participants below the age of 25 and 7 above the age of 26. Participants from the surfing sample above the age of 26 showed a higher profile on all the well-being scales than surfers below 25 years of age (table 5). Significance was recorded on positive relations with others (**pr**) ($t= 3.0$ $p=0.014^*$) and perceived social support from family (**pss-fa**) ($t=2.2$ $p=0.001^{**}$) in favour of the older age group. Participants from the soccer sample above the age of 26 revealed higher mean scores than the younger age group on environmental mastery (**em**), positive relations with others (**pr**), sport

competence (**sp**) and perceived social support from friends (**pss-fr**). Significance was recorded on positive relations with others (**pr**) ($t= 2.3$ $p=0.027$). The younger age group indicated a higher mean on conditioning (**co**), however this was not significant.

Table 6: Mean frequency scores of surfers and soccer players on dimensions of psychological well-being, physical self-perception, perceived importance and perceived social support.

frequency	a	pg	em	pl	pr	sa	sp	co	bo	st	psw	spi	coi	boi	sti	pss-fr	pss-fa
surfing 4 (N=14)	14	16.9	13.9	15.1	15.3	15	18.8	18.4	17.7	18.1	18.1	6.3	6.5	6	5.8	17.5	17.9
5 (N=16)	13.4	14.9	12.9	14.3	13.1	14.6	16.6	18.9	17.8	16.4	17.8	6.9	6.4	5.7	5.9	12.8	13.2
soccer 4 (N=19)	14.3	15.9	14.1	14.2	13.9	14.9	16.4	16.6	14.6	15.6	16.3	5.9	6.4	5.7	5.5	12.5	14.7
5 (N=11)	12.5	16.3	13.7	14.7	15.1	14	19.6	19.3	18.4	18.5	19.9	7.1	7.1	6.3	6.8	14.5	12.3

Figure 7: Number of participants in the surfing and soccer sample on frequency.



A difference on the psychological well-being scale was observed in regards to the frequency per week that the participants were involved in surfing. There were 14 participants in the surfing sample that were involved in their sport 4 time or fewer per week and 16 participants with a frequency above 5 times per week

(figure 7). The frequency of 4 or fewer times a week revealed a higher trend on all dimensions of psychological well-being (table 6). Significance was on personal growth (pg) (t=2.8 p=0.040**) and positive relations with others (pr) (t=2.4 p=0.004**). A higher trend in mean scores was indicated on physical self-perception in favour of 4 or fewer times per week however no significance was recorded. No significance was recorded on the perceived social support profiles.

On the psychological well-being scale (table 6), the means scores from the soccer participants indicated no significance in the frequency of involvement in soccer per week. A higher profile was recorded on all the dimensions of physical self-perception, in favour of the higher frequency of 5 or more times per week. Significance was shown on strength (st) (t=2.2 p=0.038*). Perceived social support from friends (pss-fr) recorded significance (t=1.2 p=0.002**) in favour of the higher frequency.

Table 7: Mean duration scores of surfers and soccer players on dimensions of psychological well-being, physical-self perception, perceived importance and perceived social support.

Duration	a	pg	em	pl	pr	sa	sp	co	bo	st	psw	spi	coi	boi	sti	pss-fr	pss-fa
Surfing																	
-106 (N=21)	13.4	15.8	13.5	15.1	14.2	15.1	17.8	18.8	17.7	17.3	18.2	6.9	6.6	6	6.1	15	16
+107 (N=9)	14.3	16	13.2	13.7	14	14	17.6	18.4	17.8	17	17.4	6.1	6	5.6	5.3	14.8	14
Soccer																	
-106 (N=7)	14.1	16.7	13	14.6	12	13.7	17.6	18.1	15.1	15	16.6	6	6.3	6.4	6.4	11	13.3
+107(N=23)	13.3	15.9	14.2	14.3	15.1	14.9	17.6	17.4	16.3	17.2	17.9	6.4	6.7	5.7	5.8	13.9	14

Figure 8: Number of participants in the surfing and soccer sample on duration.

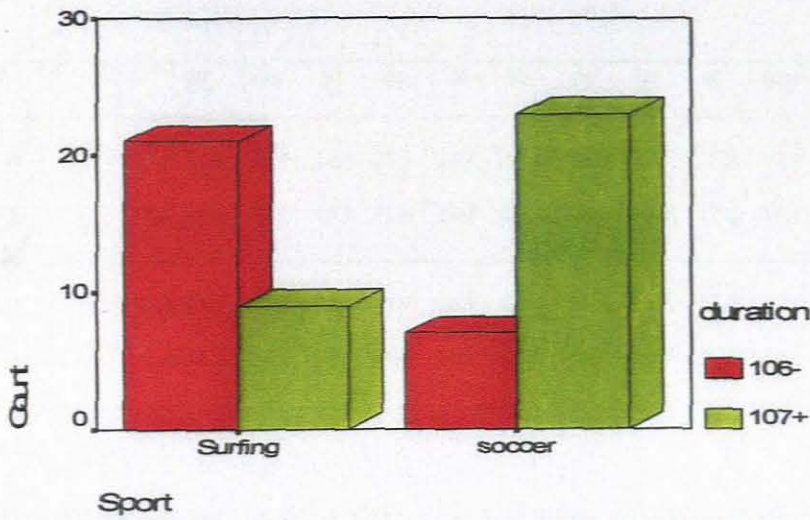


Figure 8, 21 participants from the surfing sample indicated durations of 106 minutes or less and 9 participants had durations of 107 minutes or more. 7 participants from the soccer sample indicated durations of 106 minutes or less and 23 participants had durations of 107 minutes or more. A higher profile was noticed on the lower duration on the physical self-perception and perceived social support scales, however the duration of the surfing session revealed no significant differences on the categories of psychological, physical and social well-being (table 7). The lower duration of the soccer session, 106 minutes or less, revealed significance on personal growth (pg) ($t=0.8$ $p=0.017^{**}$). The higher duration recorded significance on strength (st) ($t=1.4$ $p=0.014^*$).

Table 8: Mean intensity scores of surfers and soccer players on dimensions of psychological well-being, physical self-perception perceived importance and perceived social support.

Intensity	a	pg	em	pl	pr	sa	sp	co	bo	st	psw	spi	coi	boi	sti	pss-fr	pss-fa
Surfing -7 (N=19)	13.3	15.6	13.1	14.7	13.3	14.4	17.4	18.5	17.7	17.3	17.9	6.5	6.6	5.9	6.2	15.2	14.4
+8 (N=11)	14.4	16.2	13.9	14.6	15.5	15.5	18.2	19.1	17.8	17.2	18.1	6.9	6.2	5.7	5.4	14.5	17
Soccer -7 (N=16)	13.8	15.1	14.3	14.3	13.9	14.9	17.3	16.9	15.2	15.9	17.6	6.1	6.6	5.8	5.6	12.6	13.6
+8(N=14)	13.4	17.1	13.6	14.4	14.9	14.3	17.9	18.4	16.9	17.6	17.6	6.6	6.7	6	6.4	13.9	14.1

Figure 9: Number of participants in the surfing and soccer sample on intensity.

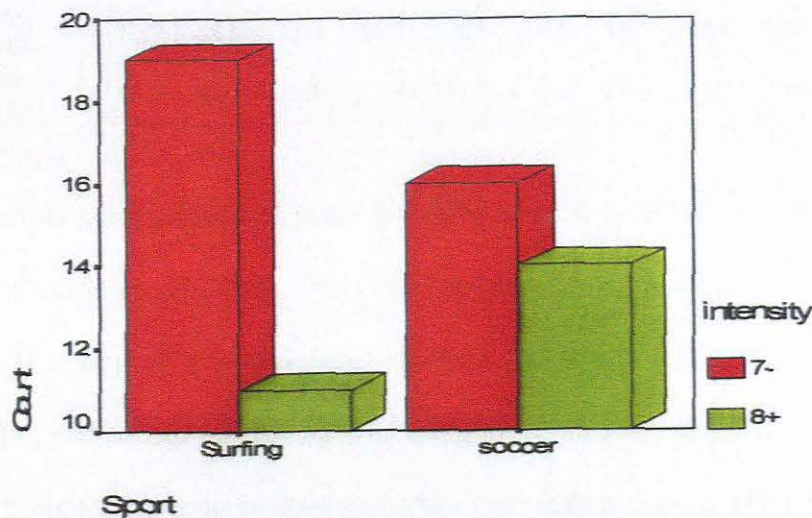


Figure 9, 19 participants from the surfing sample recorded an intensity of 7 or less and 11 participants indicated intensity of 8 and above. 16 participants from the soccer sample recorded an intensity of 7 or less and 14 participants indicated intensity of 8 and above. The intensity of 8 and above of the surfing session revealed a higher trend on psychological well-being and physical self-perception. Significance was indicated on positive relations with others (**pr**) ($t=2.4$ $p=0.044^*$), self acceptance (**sa**) ($t=1.2$ $p=0.048^*$) and perceived social support from family (**pss-fa**) ($t=1.5$ $p=0.009^{**}$). The higher intensity of the soccer session revealed significance on personal growth (**pg**) ($t=2.6$ $p=0.001^{**}$). Physical self-perception showed a higher trend for

the higher intensity, however only importance of body attractiveness (**boi**) ($t=3.1$ $p=0.03^*$) was significant.

No significance was found on the perceived social support scales.

Table 9: Mean scores of regular exercisers (health club members, hockey players and runners) on dimensions of psychological well-being, physical self-perception and perceived importance.

	a	pg	em	pl	pr	sa	sp	co	bo	st	Psw	spi	coi	boi	sti
Exercisers (N=169)	13.7	15.5	13.3	14.1	13.7	14.6	16.4	16.8	15.4	15.3	16.2	5.9	6.2	6.0	5.8
Health (N=69)	13.9	15.6	13.6	13.9	12.5	14.3	15.2	16.3	15.9	15.1	16.1	5.4	6.1	6.2	6.0
Hockey (N=60)	13.5	15.5	12.4	14.5	14.6	15.0	18.3	17.8	15.0	15.6	16.5	6.2	6.2	5.7	5.3
Runners (N=40)	13.9	15.3	13.9	13.9	14.3	14.6	15.6	16.2	15.1	15.2	15.6	6.2	6.3	6.1	6.2
Control (N=183)	12.5	13.6	12.0	9.6	9.9	12.2	13.3	14.4	15.1	15.5	17	5.2	5.2	5.0	5.6
Surfing (N=30)	13.7	15.8	13.4	14.7	14.1	14.8	17.7	18.7	17.7	17.2	18.0	6.6	6.4	5.8	5.9
Soccer (N=30)	13.6	16	13.9	14.4	14.4	14.6	17.6	17.6	16.0	16.7	17.6	6.3	6.6	5.9	6.0

A further comparison was made between the surfing and soccer participants with recent research conducted by Edwards *et al* (2005). This research investigated health club members, hockey players, runners and a control group of non-exercising students on psychological well-being and physical self-perception. The surfing and soccer players showed a higher mean score than the hockey players on environmental mastery (**em**), higher mean score than the health club members on positive relations with others (**pr**), a higher mean score than the health club members and the runners on sport competence (**sp**). The surfers showed a higher mean score than the soccer, health club members, hockey players and the runners on conditioning (**co**) and body attractiveness (**bo**). Both the surfers and soccer players showed a higher mean score than the health club members, hockey players and the runners on strength (**st**) and physical self worth (**psw**). The surfing and soccer players recorded higher mean scores than the control group on all categories except on physical self worth (**psw**) (table 9).

Table 10: Correlation matrix of psychological well-being scale, physical self-perception profile and the perceived social support from friends and family.

	a	pg	em	pl	pr	sa	sp	co	bo	st	psw	spi	coi	boi	sti	pss-fr	pss-fa
a																	
pg	.112																
em	.030	.243															
pl	-.90	.293*	.366**														
pr	.082	.266*	.425**	.204													
sa	.209	.102	.380**	.263*	.350**												
sp	.104	.286*	.232	.348**	.357**	.036											
co	.228	.261*	.184	.140	.231	.251	.555**										
bo	.124	.271*	-.480	.147	.159	.031	.375**	.570**									
st	.001	.251	.157	.060	.271*	.012	.436**	.483**	.458**								
psw	.132	.333*	.248	.256*	.228	.168	.595**	.653**	.716**	.677**							
spi	-.048	.123	-.054	.154	.110	.043	.227	.416**	.312*	.131	.242						
coi	.250	.094	-.088	-.104	.171	.087	.318*	.517**	.398**	.253	.339*	.352**					
boi	.006	.266*	-.055	.119	.093	.140	.302*	.467**	.436**	.123	.402**	.360**	.424**				
sti	.097	.275	-.087	.029	-.045	.051	.228	.530**	.456**	.299**	.453**	.395**	.553**	.538**			
pss-fr	.107	.345**	.242	.218	.540**	.238	.429**	.251	.367**	.282*	.317*	.082	.151	.355**	.247		
pss-fa	.016	.220	.179	.329*	.398**	.197	.230	.111	.222	.072	.134	.254	.093	.284*	.021	.451**	

From **table 10**, there are a total of 136 possible correlations amongst the subscales of the four measures. There were 127 positive correlations and 9 negative correlations. The negative correlations were between autonomy and purpose in life (-.90) and importance of sport competence (-.048), environmental mastery and body attractiveness (-.48), importance of sport competence (-.054), importance of conditioning (-.088), importance of body attractiveness (-.055) and importance of strength (-.087), purpose in life and importance of conditioning (-.104), positive relations with others and importance of strength (-.045). Fifty eight correlations reached significance, 40 correlations at the 0.01 level (**) and 18 correlations at the 0.05 level of significance (*).

Table 10 revealed the following significant correlations across the 3 scales:

Personal growth correlated significantly with purpose in life (.293*), positive relations with others (.266*), sport competence (.286*), conditioning (.261*), body attractiveness (.271*), physical self worth (.333*), importance of body attractiveness (.266*), importance of strength (.275*) and perceived social support from friends (.345**).

Environmental mastery correlated significantly with purpose in life (.366**), positive relations with others (.425**) and self acceptance (.380**).

Purpose in life correlated significantly with self acceptance (.263*), sport competence (.348**), physical self worth (.256*) and perceived social support from family (.329*).

Positive relations with others correlated significantly with self acceptance (.350**), sport competence (.357**), strength (.271*), perceived social support from friends (.540**) and family (.398**).

Sport competence correlated significantly with conditioning (.555*), body attractiveness (.375**), strength (.436**), physical self worth (.595**), importance of conditioning (.318*), importance of body attractiveness (.302*) and perceived social support from friends (.429**).

Conditioning correlated significantly with body attractiveness (.570**), strength (.483**), physical self worth (.653**), importance of sport competence (.416**), importance of body attractiveness (.517**), importance of conditioning (.467**) and importance of strength (.530**).

Body attractiveness correlated significantly with strength (.458**), physical self worth (.716**), importance of sport competence (.312*), importance of conditioning (.398**), importance of body attractiveness (.436**), importance of strength (.456**) and perceived social support from friends (.367**).

Strength correlated significantly with physical self worth (.677**), importance of strength (.299**) and perceived social support from friends (.282*).

Physical self worth correlated significantly with importance of conditioning (.339**), importance of body attractiveness (.402**), importance of strength (.453**) and perceived social support from friends (.317*).

Importance of sport competence correlated with importance of conditioning (.352**), importance of body attractiveness (.360**) and importance of strength (.395**).

Importance of conditioning correlated with importance of body attractiveness (.424**) and importance of strength (.553**).

Importance of body attractiveness correlated with importance of strength (.538**), perceived social support from friends (.355**) and family (.284*).

Perceived social support from friends correlated significantly with perceived social support from family (.451**).

4.3.1 Summary of Quantitative Results

Results indicated that no significant differences were achieved between the mean scores of the surfing and soccer sample on dimensions of psychological well-being. A higher difference in mean scores for the surfing sample was found on purpose in life and self acceptance. The soccer sample recorded a higher difference in mean scores on personal growth, environmental mastery and positive relations with others. Differences were indicated on physical self-perception mean scores between the two sports. Surfing revealed a higher trend than the soccer players on physical self-perception, particularly on conditioning, body attractiveness, strength and physical self worth. The surfing sample perceived themselves as having a higher level of physical condition, stamina and fitness, perceived strength and overall general feelings of happiness than the soccer sample. There was a significant relationship between the surfing sample and body attractiveness which suggests that the surfing sample perceived themselves to be more physically attractive, to be able to maintain an attractive body and to be more confident in appearance than the soccer sample. There were no significant differences in scores between the two samples on the perceived importance profile, however, perceived importance of sport competence was more elevated for the surfing sample than for the soccer sample. Perceived importance of conditioning was higher for the soccer sample than the surfing sample. No significant differences were indicated between the two samples on the perceived social support scales although the surfing sample scored a higher trend in mean scores than the soccer sample on perceived social support from friends and family.

4.4 QUALITATIVE RESULTS

4.4.1. Surfing Results

Surfing participant #A: male, 29 yrs old.

Question 1:

What does surfing mean to you?

I surf for two reasons, for social interaction (1) and for the pure enjoyment of it (2). There is no better feeling than meeting up with your close friends (3) and going for a paddle (4), regardless of the condition of the surf. It's a form of bonding where we can express ourselves freely (5). There is nothing better than paddling out on a hot summer's day with all my friends (6) and catching good waves. The experience of being apart of the ocean (7) and riding the swells that come your way is truly something special and in my opinion, separates surfing from many other sports. In a sense, it's a spiritual experience (8). It may be a cliché, but "only a surfer knows the feeling" (9).

Question 2:

What is the relationship between surfing and physical, psychological and social well-being?

Surfing definitely contributes to my overall well-being and thus encompasses physical, psychological and social well-being (10). Surfing provides the opportunity for me to interact with nature (11) and my friends (12), while at the same time, being extremely active (13), paddling up and down the water. I feel mentally revitalized after a session of surfing (14). Surfing provides the time to leave behind all concerns that may be on my thoughts (15). After a good session, the mood amongst my peers is quite high (16). Surfing provides me with the opportunity to meet up with my friends (17) and enjoy the sport we are passionate about (18).

Surfing participant #B: male, 27 yrs old.

Question 1:

What does surfing mean to you?

Surfing means a lot to me (1). I think about surfing all the time (2) and often plan my weekends around it (3). It's a more than just a sport, it's a lifestyle (4). If I miss out on good surf, I get quite frustrated (5). When I hear that the surf conditions are good, I tend to get quite overexcited (6). Surfing makes me feel free (7) and it a great distraction from problems that may be on my mind (8).

Question 2:

What is the relationship between surfing and physical, psychological and social well-being?

I think there is a strong, positive relationship between surfing and physical, psychological and social well-being (9). You get fit (10) and well toned (11) from paddling. I personally think that psychological and social well-being go hand in hand with sport (12) because doing any form of exercise makes me feel healthy (13) and clears my head (14). Surfing is also very social (15). Sitting out in the ocean with your friends, laughing and talking, clears each others worries (16).

Surfing participant #C: male, 31 yrs old.

Question 1:

What does surfing mean to you?

For me it's more of getting in tune with the whole lifestyle and culture of the sport (1) and not just the physical act that attracts me to the sport (2). I feel I can relate to that specific culture of surfing. With regards to the actual physical aspect of the sport, it keeps me in shape (3) and gives me an intense feeling of satisfaction (4) and excitement (5) that I don't get from any other sport or activity. It makes me feel alive (6)

and relaxed the same time (7). My relationship with the sea started when I was 5 years old and will continue into my later years.

Question 2:

What is the relationship between surfing and physical, psychological and social well-being?

Surfing keeps me in shape (8). I feel physically revitalized after a good surf session (9). Psychologically, surfing is a great mind cleanser (10). It's one of the few activities that I do where I don't think about anything for about 2 hours (11). My thoughts are only about surfing and the next wave. When the waves are perfect, you get a new appreciation for how beautiful the ocean is (12). On the social front, surfing has helped me meet an abundance of new people from all walks of life (13). Surfing attracts a wide spectrum of people, male and female. Surfers in general are a very social group of people (14) and there's always a hive of activity on the beach, in and out of the water (15).

4.4.2. Soccer Results

Soccer participant #A: male, 29 yrs old.

Question 1:

What does soccer mean to you?

Soccer is a good way to keep fit and healthy (1), in a physical and psychological capacity, by exercising and playing on a regular basis. It also involves doing something that you really enjoy (2) in an environment that is both relaxing (3) and competitive (4). Soccer always brings a smile to my face (5) and is something that I always look forward to and really enjoy doing (6).

Question 2:**What is the relationship between soccer and physical, psychological and social well-being?**

Soccer definitely keeps me fit (7) and at times pushes me to the limits in order to get as fit as possible thus proving my worth to the team (8). Being fit is essential as the fitter I am, the easier the game is to play. Psychological well-being is essential. At times you may feel dejected if you are not selected to play (9) and the pressure to perform is always on your mind (10). For that reason you have to be psychologically strong to cope with whatever situation may arise. Getting fit also pushes you to the extreme, both physically and psychologically. Your limits are constantly being tested. At the end of the day, competitiveness and drive (11) counts for nothing if you are not having fun and enjoying yourself with friends (12). Whatever differences you might have on the field needs to be put aside for the benefit of the team (13). Meeting with mates (14) after training and matches helps you unwind (15) from the sometimes seriousness of the sport. To me, soccer is a great team sport which encourages both competitiveness (16) and friendship in a positive manner (17).

Soccer participant #B: male, 26 yrs old.**Question 1:****What does soccer mean to you?**

I play soccer for the love of the game (1). I have no greater satisfaction than kicking a ball around on a football field (2). I enjoy the competitiveness of the sport (3) and the excitement of putting the ball into the oppositions net (4). I can't say that I play soccer to keep fit as this is not the case (5). If I wanted to keep fit, I would start road running (6). Soccer is a sport that I have been playing since the age of five and it's in my blood (7).

Question 2:

What is the relationship between soccer and physical, psychological and social well-being?

In soccer there are many different moves which occur during a game ranging from jumping, diving, short sprints, running with the ball at your feet to long distance running (8). In order to do these moves it requires fitness and strong legs (9). A good player knows that he is strong physically and psychologically. Soccer is not only about being fit and strong (10) but it requires quick thinking and intelligence on and off the ball (11). If a player knows that he is a good player, this will give him the psychological and physical competitive edge (12). Feeling good both psychologically and physically will contribute to feeling confident socially (13).

Soccer participant #C: male, 30 yrs old.

Question 1:

What does soccer mean to you?

I play soccer because I really enjoy the sport (1). Sometimes after a long day all I want to do is to stretch my legs and run around kicking the ball (2). It helps in releasing the stress of the day (3). There is also always a good vibe there, especially as most of your team mates are good friends (4). Essentially I really enjoy the sport and have a big passion for it on and off the pitch (5).

Question 2:

What is the relationship between soccer and physical, psychological and social well-being?

I think from a physical point it keeps me fit and in shape (6). This in turn helps with self-esteem and the way people look at you (7). From a psychological point of view, it has many different effects. If you win a game, it is a really good feeling to have all the guys on a high (8), but when you lose it's the opposite (9). Soccer

keeps your mind active (10), always thinking and focusing (11) on the game. You have to think fast and always be on your toes (12). Socially, it's a great opportunity to all get together and chat about the game (13), both the pros and the cons.

4.5 Summary of Qualitative Results

4.5.1 Summary of the surfing experience

The meaning that surfing had for the participants was that it was more than just a sport, but a lifestyle and a culture (B4, C1). It was described by one participant to be a spiritual experience (A8), whereby being apart of the ocean and its surroundings was a source of much gratification. Feelings of being free while in the water were expressed (B7) as well as the enjoyment of sharing this experience with friends (A1, 3, 5-6). All the participants reported positive feelings associated with surfing (A2, 7-9, 18, B6, C4-5). One participant reported feeling frustrated when the conditions of the surf were not conducive to surfing (B5).

All participants expressed a positive relationship between surfing and physical, psychological and social well-being. Being active, keeping fit and feeling physically revitalised were the responses conveyed (A4, 13, B10-11, 13, C3, 8-9). Psychologically, surfing provided a distraction from concerns and worries and revitalised their minds (A14-16, B7-8, 14, C6-7, 10-11). Surfing was also reported to offer the opportunity to meet up with friends as well as to meet new people (A1, 3, 5-6, 12,17, B15-16, C13-15) with the same common interest, surfing.

4.5.2. Summary of the soccer experience

All participants reported the enjoyment of being involved in soccer (A2-3, 5-6, 12, B1-2, 4, 7, C1-2, 5). Soccer was essentially experienced as an opportunity to get fit, keep in shape and ultimately a means to achieve good health (A1, 7, B8-10, C6). All the participants reported the enjoyment of being competitive in the sporting context (A4, 11, 16, B3, 12, C8). The distraction that the sport provided from stress (A15, C3) was also reported.

All participants reported a positive relationship between soccer and physical, psychological and social well-being. Fitness, strength and co-ordination were reported by the participants to be physical benefits of the sport (A1, 7, B8-10, C6). The opportunity for mental stimulation and focusing were also mentioned (B11, C10-12). Much emphasis was placed on the enjoyment of being competitive (A4, 11, 16, B3, 12, C8) with one participant reporting on the down side of competition (C9), loosing a game. Increase in self-esteem was reported to be associated with physical and psychological well-being (B12-13, C 7). All participants reported on the enjoyment of being a part of a team and the social interactions with team mates (A14, 17, B13, C4, 13). The greatest emphasis was placed on the competitiveness of the sport and the social interactions with team mates.

4.6 DISCUSSION

Hypothesis 1: Participants from the soccer and surfing sample will have different psychological, physical and social well-being profiles.

The results confirmed the research hypothesis that the surfing and soccer sample will have different well being profiles. The surfing sample scored higher on purpose in life (**pl**) and self acceptance (**sa**) than the soccer sample. The surfers perceived themselves to be having more goals, sense of directedness and beliefs that give life purpose and more of a positive attitude towards the self. The soccer sample scored higher on personal growth (**pg**), environmental mastery (**em**) and positive relations with others (**pr**) than the surfing sample. The soccer sample perceived themselves as being more open to new experiences, as having more of a sense of continued development, a sense of mastery and competence in managing the environment, being able to control a complex array of external activities and as having more warm, satisfying, trusting relationships with others.

The only significant relationship was between the surfing sample and body attractiveness (**bo**). Surfers perceived themselves as being more physically attractive and more confident in appearance. More importance was placed on sport competence (**spi**) for the surfers whereas more importance was placed on conditioning (**coi**) for the soccer players. These findings were supported by the qualitative results. Surfers experience their sport as a way of life, a culture. The lifestyle of the beach, sun and surf is very much part of this sport. Enjoyment is gained from being a part of the ocean, feeling free and being able to experience this through surfing. The higher importance of sport competence (**spi**) recorded by the surfers suggests that being able to master and ride the surf is important. Soccer players on the other hand, placed more importance on

conditioning (coi). This finding was also indicated by the qualitative results. Soccer is experienced as a more competitive sport than surfing, and subsequently, more emphasis is placed on physical condition, stamina, fitness and confidence in ability. There was no significant relationship between perceived social support and surfing and soccer.

Hypothesis 2: The team sport is hypothesized to show a higher perceived social support profile than the individual sport.

The hypothesis of the team sport showing a higher perceived social support profile than the individual sport was refuted. There was no significant relationship between perceived social support and either of the two sports. The team sport scored a lower mean score than the individual sport on this profile. The surfing sample thus perceived themselves as having more social support from both friends and family than the soccer sample. An explanation for this lower score may be the higher number of participants above 26 years of age in the surfing sample. Results indicated that the participants above the average age of 26 years had a higher recorded perceived social support profile than the participants below 25 years of age. The qualitative results also suggested that although surfing is considered an individual sport, it seems to be enjoyed in a collective or group. The participants reported the enjoyment of sharing their sporting experience with friends and the opportunity it provides in meeting new friends with a similar interest and lifestyle.

Hypothesis 3: The male participants from both sports are expected to show higher physical self-perception scores than the female participants.

The hypothesis that gender would reveal a higher physical self perception profile was confirmed in the surfing sample. Male surfers were found to have higher mean scores than female surfers on sport competence (**sp**), body attractiveness (**bo**) and physical self worth (**psw**). There was a significant relationship between the male surfers and sport competence (**sp**). Female surfers recorded a higher mean score of importance on sport competence (**spi**) however the recorded mean scores on perceived sport competence (**sp**) were low. The female surfers placed more importance on sport competency than the male surfers, however their perceived sport competency was lower than the male surfers. The importance-competence discrepancy between **spi** and **sp** may thus have contributed to the lower physical self-worth (**psw**) mean score being reflected by the female surfers. The female surfers scored lower on perceived body attractiveness (**bo**) and on physical self-worth (**psw**). These findings are supported by Silva, Borrego and Matros (2001), who found that females have a higher fat perception and body dissatisfaction than boys thus impacting on their physical self worth.

Findings from the soccer sample indicated a different profile to the surfing sample. The female soccer players scored a higher profile than male mean scores on physical self-perception, particularly on conditioning (**co**), body attractiveness (**bo**), strength (**st**) and physical self worth (**psw**). There was no significance recorded on these dimensions, however the male players did record a significant relationship with sport competence (**sp**). The Perceived Importance Profile (PIP) of the male soccer players may suggest a possible explanation for the male players recording lower scores on physical self-perception (see literature review, pg 21). Importance-competence discrepancies were observed between body attractiveness (**bo**) and

strength (**st**) and importance of body attractiveness (**boi**) and importance of strength (**sti**) respectively. The higher importance attached to body attractiveness (**boi**) and strength (**sti**) and the lower mean scores of (**bo**) and (**st**) may explain the lower physical self-worth (**psw**) mean score obtained by the male soccer players.

Hypothesis 4: The older age group of both the surfing and soccer participants are expected to show higher levels of psychological well-being.

The hypothesis that the older age group will show higher levels of psychological well-being was confirmed. Participants from the surfing sample above the age of 26 revealed a higher profile than the younger age group on all the psychological well-being dimensions. The older participants perceived themselves as having higher levels of psychological well-being than the younger participants. Significance was reached on positive relations with others (**pr**). Participants from the soccer sample above the age of 26 recorded higher means scores on purpose in life (**pl**), environmental mastery (**em**) and personal growth (**pg**). Positive relations with others (**pr**) reached significance. Autonomy (**a**) and self acceptance (**sa**) mean scores were slightly higher for the younger age group, however this was not significant. The findings are consistent with Keyes, Shmotkin and Ryff (2002) that psychological well-being increases with age.

Hypothesis 5: Increased levels of overall well-being are expected to be associated with higher frequency, duration and intensity exercise scores.

The research hypothesis that a higher frequency would be associated with an increase level of well-being was refuted by the surfing sample. The frequency of four or fewer times a week revealed a higher trend on all dimensions of psychological well-being. Significance was achieved on personal growth (**pg**) and positive

relations with others (**pr**). A higher trend in mean scores was indicated on physical self-perception and perceived social support in favour of four or fewer times per week however no significance was recorded. No significant relationship was found on the importance profile. These findings suggest that an increase involvement of surfing amongst the participants did not impact significantly on their well-being scores.

Finding from the soccer sample confirmed the hypothesis, however only on physical self-perception. No significance in the frequency of involvement in soccer was recorded on psychological well-being. A higher profile was recorded on all the dimensions of physical self-perception, in favour of the higher frequency of five or more times per week. Significance was shown on strength (**st**). On the perceived importance profile, a significant relationship was found between importance of strength (**sti**) and the frequency of five or more times per week. Significance was reached between perceived social support from friends (**pss-fr**) and the higher frequency. The findings revealed by the soccer players suggest that there is a significant relationship between the higher frequency of involvement in the team sport and the individuals' perception of strength (**st**), importance of strength (**sti**) and their perceptions of social support from friends (**pss-fr**). The causal relationship however is unclear, whether increased involvement in the team sport contributes to increased perceptions of strength, importance of strength and perceived social support from friends or the perception of strength, importance of strength and perceived social support from friends contributes to increasing involvement in the sporting context.

The hypothesis that the higher duration would yield increased well-being scores was refuted. An elevated profile was found on the physical self-perception profile and perceived social support scales in the lower surfing duration. No significance was achieved on any of the dimensions of psychological, physical and social well-being. The higher duration of the soccer session, 107 minutes or more, revealed significance on

strength (**st**). Personal growth (**pg**) revealed significance in the lower duration. No significance was recorded on the other profiles. The significant strength score reached by the soccer participants suggests that the perception of strength may be associated with an increase in both duration and frequency of the soccer sessions.

The hypothesis that increased levels of intensity would be associated with increased well-being was confirmed in both samples. These results were supported by Taylor (2000) where higher levels of physical activity were found to be associated with higher subjective well-being, mood and emotions, life satisfaction and quality of life (cited in Biddle, Fox & Boutcher, 2000). A higher profile on all the well-being profiles was confirmed in relation to the intensity of the surfing sessions. The intensity of 8 and above, on a scale of 10, revealed these scores. Significance was recorded on positive relations with others (**pr**), self-acceptance (**sa**) and perceived social support from family (**pss-fa**). The higher intensity of the soccer session revealed a higher profile on the physical self-perception profile, perceived importance profile and perceived social support. Personal growth (**pg**) and importance of body attractiveness (**boi**) was significant.

4.7 Limitations of the research

This study was based on the assumption that the convenient samples would represent an individual and a team sport and that sufficient sample size would cancel out any confounding of variables through selecting individuals who represent either sport. A limitation of this study is the homogeneity of the research sample. Participants were not exclusively involved in the sports under which they were being investigated. A number of participants were involved in other sports or engaged in further physical activity in addition to either the surfing or soccer sample to which they had been assigned. The extraneous variables thus require a degree of caution to be imposed when interpreting the results.

The basis for the selection of surfing as being an individual sport was associated with the definition of an individual sport which refers to individually oriented physical exercise which may or may not involve others and/or be competitive in nature (Fox, Boutcher, Faulkner & Biddle, 2000). Analysis of the qualitative results revealed that although surfing is in agreement with this definition and that its participation is enjoyed in the collective, the emphasis placed on involvement with others in the surfing context may have contributed to the relationship with the team sport not revealing much significance on the dimensions of well-being that were investigated. Caution must also be taken when generalizing the qualitative results. The views expressed are only those of 3 surfers and 3 soccer players and do not represent all surfers and soccer players.

A convenience/non-random, volunteer sample was used in the research. Babbie and Wagenaar (1992) draw attention to concerns that response bias may have with a convenience sample. This type of sampling does not allow for a statistical evaluation of sampling error and therefore interpretations of results need to be made with caution as the significant relationships may be associated with unknown extraneous variables (Diamantopoulos & Schlegelmilch, 1997).

A further limitation of this study is the cross-sectional design that was used in the comparison of the two sports under investigation. The absence of a longitudinal design renders it difficult to determine cause and effect relationships, essentially are the findings from the two samples a result of their participation in their sport or as a result of other extraneous variables present in their lives.

The nature of the psychometric instruments used in the study allow for a degree of social desirability to plague the measurements. The tendency of participants to bias their responses towards more socially desirable norms is a factor that needs to be taken into consideration when interpreting the findings.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

The present study was conducted in the context of the public health paradigm in which emphasis is placed on health promotion and illness prevention. In accordance with the WHO (1943), mental health was conceptualised as encompassing psychological, physical and social well-being. This research aimed to investigate mental health in an individual and team sport, namely surfing and soccer. A comparative analysis of the two sports on dimensions of psychological, physical and social well-being was conducted. The study included a qualitative analysis which provided a more holistic and deeper understanding of surfing and soccer. Psychological well-being was measured using Ryff's (1989) Psychological Well-Being Scale, physical well-being was assessed using Fox's (1990) Physical Self-Perception Profile and social well-being was assessed with Procidano and Heller's (1983) Perceived Social Support Scales. No previous research has used these three psychometric instruments concurrently or has conducted a comparative investigation between surfing and soccer.

Data analysis revealed no significant relationships between the surfing and soccer sample on the psychological well-being dimensions. The surfing sample recorded higher scores than the soccer sample on purpose in life and self acceptance. The surfers perceived themselves as having more goals and beliefs that give life purpose. The soccer sample scored higher on personal growth, environmental mastery and positive relations with others than the surfing sample. The soccer sample perceived themselves as being more open to new experiences and having a sense of mastery and competence in managing the environment. They perceived themselves as being more able to control a complex array of external activities and as having warmer, more satisfying and trusting relationships with others. Differences were indicated on physical self-perception between the two sports. Surfing revealed a higher trend than the soccer players on physical self-

perception, particularly on conditioning, body attractiveness, strength and physical self worth. Body attractiveness reached significance in favour of surfing. Surfers perceived themselves as being more physically attractive and more confident in appearance. There was no significance in scores between the surfing and soccer samples on the perceived importance profile. The surfing sample did however record a higher score than the soccer sample on perceived importance of sport competence. The higher importance of sport competence recorded by the surfers suggests that being able to master and ride the surf is important. More importance was placed on conditioning for the soccer players. The soccer experience was reported as being a more competitive sport than surfing, and subsequently, more emphasis is placed on physical condition, stamina, fitness and confidence in ability. No significance was found in the relationship between surfing and soccer on the perceived social support scales, although the surfing sample scored a higher trend in mean scores than the soccer sample on perceived social support from friends and family.

The present study has provided a platform for further research into surfing and soccer. A longitudinal research design, in which a cause and effect relationship may be established, may yield further understanding of the impact that these two sports may have on mental health. Further recommendations are directed to sampling procedures which ensure a larger sample and a more homogeneous population which would contribute to an increase in the validity of the study. It is hoped that future studies of mental health in sport can use the suggestions outlined in the present study in order to address the limitation mentioned and expand the understanding of sport in mental health.

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