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**THE EFFECT OF A POSITIVE PSYCHOLOGY
INTERVENTION ON PSYCHOSOCIAL WELL-BEING
AMONG A GROUP OF EARLY ADOLESCENTS**

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Abstract

This study aimed to evaluate the effect of a positive psychology intervention on the psychosocial well-being of a group of adolescents between the ages of 12 and 13 using a quasi-experimental quantitative approach. The positive psychology intervention was implemented over a four week period within the school setting, and consisted of one half-hour session per week. Intervention activities focused on enhancing positive emotions about the past, in the present, and toward the future through meditation, gratitude activities, a savouring exercise, a kindness intervention, identifying and developing character strengths and an optimism enhancing exercise. Complete data at baseline, one-week post-intervention, and 5-week follow-up was gathered from 95 grade seven scholars who were randomly assigned to the experimental (intervention) condition ($n = 44$) or control group ($n=51$). The control group received no intervention and no placebo. Data was gathered using the Mental Health Continuum – Short Form (MHC-SF) for adolescents to measure well-being, and the Revised Child Anxiety and Depression Scale – Short Version (RCADS-SV) as the indicator for anxiety and depression. While no significant changes were indicated in the control group in either well-being or pathology, quantitative data revealed promising results in the experimental group, suggesting that the brief intervention may have impacted on the psychosocial well-being of the adolescents indirectly by significantly decreasing symptoms of mental ill-health including anxiety and depression after follow-up analysis. Although no significant differences were found in psychosocial well-being per se, the significant decrease in anxiety and depression may increase well-being and in so doing promote flourishing adolescents. Furthermore, evidence suggests that well-being interventions have a delayed or long-term effect and as such future research ought to look at the effects of positive psychology interventions among a broader age-range and socio-economic group using longitudinal studies.

Keywords: psychosocial well-being, adolescence, positive psychology, positive psychology intervention, meditation, gratitude, savouring, kindness intervention, identifying and developing strengths, optimism enhancing intervention.

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CHAPTER 1

INTRODUCTION TO THE STUDY

1. INTRODUCTION

The developmental stage of adolescence has predominantly been viewed from a deficit perspective. Traditionally it has been perceived as a stormy phase of life, fraught with mental health problems, such as depression (Cavendish, Montague, Enders, & Dietz, 2014; Louw & Louw, 2014; Maughan, Collishaw, & Stringaris, 2013). Today, adolescents face a myriad of environmental, social, psychological and biological stressors, which can negatively affect their mental health and well-being (Waters, 2011).

Clinical depression amongst adolescents has become a global problem, with research suggesting that almost one in four adolescents worldwide will experience an episode of clinical depression by the end of high school (Heller, 2012). Within South Africa, diverse social, cultural, political and economic factors add to these stressors and play a role in the development of mental health issues including depression (Meehan, Peirson, & Fridjhon, 2007). In addition to an increase in prevalence, several studies suggest that the age of first onset of depression has shifted from adulthood to adolescence (Lewinsohn & Rohde, 1993; Weissman, 1987).

These findings emphasize the fact that the well-being and mental health issues of adolescents is a matter of increasing concern and as such, several studies have indicated a need for increased research as well as the development of new interventions and refinement of those already in existence (Hoven et al., 2008; Patel, Flisher, Hetrick, & McGorry, 2007; Reading, 2007; Remschmidt & Belfer, 2005). Moreover, Waters (2011) suggests that in order to increase well-being and avoid mental illness, it is critical to provide adolescents with skills

to build positive emotions such as resilience and hope and teach young people cognitive, social and emotional skills that will enable them to connect more meaningfully within society.

Schools provide an ideal setting for well-being initiatives. Incorporating positive psychology principles in schools could help to reduce and prevent symptoms of depression among adolescents (Seligman, Ernst, Gillham, Reivich & Linkins, 2009). Also, implementing strategies to improve well-being at school is important because a higher level of well-being is related to better learning, as well as to increased life satisfaction (Cortina et al., 2008). Studies confirm that resilience, positive emotions, engagement and meaning can be enhanced in children (Seligman et al., 2009). There is a growing scientific basis that well-being should be taught to children at school not only as an antidote to depression (Seligman, Steen, Park, & Peterson, 2005; Seligman et al., 2009; Waters, 2011), but also because well-being engenders greater levels of life satisfaction (Peterson, Park, & Seligman, 2005; Seligman et al., 2009), increased creative thinking and higher levels of academic performance (Keyes, 2006; Keyes et al., 2012; Seligman et al., 2009).

Over a period of 15 years Seligman and his team evaluated two different programmes for schools, the Penn Resiliency Program (PRP) and the Strath Haven Positive Psychology Curriculum (Seligman et al., 2009). The PRP is one of the most widely researched programmes designed to prevent depression in young people and has been used among diverse samples in several countries, such as Australia and the USA. A meta-analysis of 17 PRP studies revealed significant benefits of the PRP immediately after intervention and within 12 month follow ups. These benefits included significantly reduced hopelessness, increased optimism, reduction and/or prevention of anxiety and depression, and reduction in behavioural problems (Brunwasser, Gillham, & Kim, 2009). While these studies have been successful elsewhere (Seligman et al., 2009), preliminary studies to evaluate the effectiveness

of similar intervention programmes may prove influential in the South African context.

Research on the effect of interventions to enhance well-being among South African youth is limited. Existing studies among adolescents in high school have been promising (Guse & Vermaak, 2011; van Schalkwyk & Wissing, 2013), whereas other interventions seemed to be less effective (Kruger, 2013). Guse (2014) suggests that more research is needed on interventions that enhance well-being within the South African context in order to refine and develop the findings further. In addition, most South African studies have implemented interventions among mid-adolescents, and less is known about the effect thereof on early adolescents. Early intervention may prove beneficial as children entering adolescence are at a phase of optimal cognitive development (den Boomen, Lamme & Kemner, 2014; Froh, 2011). Furthermore, well-being among adolescents is important because it prevents future mental health issues (Norrish & Vella-Broderick, 2009), increases life satisfaction, and is also associated with increased academic performance (Keyes, 2009).

Against this backdrop the current study's broad focus was to evaluate the effect of positive psychology interventions, consisting of several positive activities, on the psychosocial well-being of a group of early adolescents.

2. AIMS OF THE STUDY

The broad aim of the study was to evaluate the effect of a positive psychology intervention on the psychosocial well-being of a group of adolescents. Four specific aims were set to achieve this broad aim:

1. To compare levels of psychosocial well-being *within* the experimental and control groups before and after the intervention, as well as at follow-up (five weeks after the intervention).

2. To compare levels of psychosocial well-being *between* the experimental and control groups before and after the intervention, as well as at follow-up.
3. To compare levels of psychosocial well-being *within* the boys' and girls' groups before and after the intervention, as well as at follow-up.
4. To compare levels of psychosocial well-being *between* the boys' and girls' groups before and after the intervention, as well as at follow-up.

These four specific aims were developed to compare the level of well-being within and between the different groups in order to determine whether the positive psychology intervention had an effect on psychosocial well-being, and if so, at which point in time this effect occurred, as well as to identify whether differences were indeed the result of the intervention or extraneous variables. Next, the principal constructs of the study will be discussed.

3. DEFINITION OF THE CONSTRUCTS

Within this complex study, three principal constructs were identified: positive psychology as a working framework, psychosocial well-being, and the developmental phase of adolescence. These constructs are discussed below.

3.1 Positive Psychology

This study takes place within the theoretical framework of the field of positive psychology. Positive psychology is principally concerned with human prospering and is focused on helping people cultivate greater levels of happiness. Seligman and Csikszentmihalyi (2000) hold the view that normal functioning cannot be understood purely

from a problem-based perspective such as that of the medical model of contemporary psychology, which focuses on pathology and dysfunction in human beings. Positive Psychology is a strengths-based approach and the 24 character strengths and virtues from the Values in Action (VIA) classification form an important part of the paradigm of positive psychology (Positive Psychology Centre, 2007, para. 1). In essence, positive psychology aims to enable individuals and communities to thrive. There are numerous definitions of positive psychology but in this study the focus is on the theories of both Seligman (2002; 2011) and Keyes (2005; 2009) within the official definition provided by the Positive Psychology Centre (Positive Psychology Centre, 2007, para. 1). Considering that positive psychology is inextricably intertwined with the construct of well-being, it will form the next topic of discussed.

3.2 Psychosocial Well-being

Psychosocial well-being is a dynamic and multifaceted concept that relates to subjective, social, and psychological dimensions of mental health (Ryff & Keyes, 1995). The field of positive psychology deviates from the widespread view of mental health by emphasizing positive aspects of human functioning instead of psychopathology (Seligman & Csikszentmihalyi, 2000). However, as proposed by Keyes (2005), well-being cannot exist in the presence of mental illness, suggesting that both aspects of mental health and mental illness should form part of any well-being study.

Furthermore, well-being is conceptualized from two different schools of thought, namely, hedonia and eudaimonia. The hedonic approach focuses on *affect* towards life (subjective) while eudaimonic well-being emphasizes *functioning* in life. Eudaimonia has demonstrated stronger relations with well-being than has hedonia (Steger, Kashdan, & Oishi, 2008) and some empirical evidence suggests that eudaimonic approaches to well-being may

be more important than hedonic approaches (McMahan & Estes, 2010). However, Seligman et al. (2005) proposed that both facets of well-being are necessary in order to thrive. Given that this study is concerned with the psychosocial well-being of a group of early adolescents, the developmental stage of adolescence will be explored next.

3.3 Adolescence

Broadly defined, adolescence is the stage between childhood and adulthood in an individual's life. It is a developmental stage in which the individual moves from dependence to independence, and from the family group to peer groups. It is a multi-dimensional, gradual progression of change where an individual metamorphosises to autonomy and maturity. During adolescence the individual is faced with many challenges including physiological, biological, psychological, and social changes. If these challenges are not met appropriately, adaptive problems may manifest psychologically, emotionally and /or behaviourally as a consequence. However, adolescents who do manage to adapt to challenges more successfully become more resilient and have superior coping skills (Geldard & Geldard, 2010).

In defining adolescence it is important to take cognisance of the fact that culture plays a role in determining the duration and intensity of this stage. For example, in some cultures children begin work much younger in order to contribute toward the family's welfare, or girls may get married at an earlier age. In such cultures adolescence may be a less challenging phase. It is also essential to understand that each individual is unique and therefore will cope with the adjustments required during this phase in their own way. In this study the focus was on young adolescents aged 12-13. This early stage of adolescence has received little attention in terms of research in South Africa and given that this is the period in which abstract thinking begins and new identities are being formed, it may be the optimal age for such positive psychology interventions (Geldard & Geldard, 2010).

4. OVERVIEW AND STRUCTURE OF THE CURRENT STUDY

This study focuses on the effect of a positive psychology intervention on well-being of a group of early adolescents. In chapter two, positive psychology intervention and psychosocial well-being among adolescents will be conceptualized within the framework of positive psychology. Chapter three will outline the research methodology and chapter four will present the results. Finally, chapter five will render a discussion of the results, as well as the limitations of the study and recommendations for future research.



CHAPTER 2

PSYCHOSOCIAL WELL-BEING IN EARLY ADOLESCENTS

1. INTRODUCTION

This chapter investigates the effectiveness of positive psychology interventions on the well-being of a group of early adolescents within the framework of positive psychology - a strengths-based approach. The constructs of well-being, adolescence, positive psychology in education and positive psychology intervention are conceptualized and empirical evidence related to the different intervention activities is provided.

2. POSITIVE PSYCHOLOGY AS A THEORETICAL FRAMEWORK

The proposed study will take place within the framework of positive psychology. Although a relatively new field, positive psychology has far-reaching roots in perspectives such as Maslow's (1968) theory of self-actualization, Rogers' (1961) interpretation of the fully functioning person, Jung's (1933) conception of individuation, and Allport's (1961) construction of maturity (Ryff, 1989). However, the field of positive psychology was first catalysed as a formal integrated body of knowledge as a result of two events, namely, Seligman's 1998 Presidential Address to the American Psychological Association (Seligman, 1999) and the Akumal I and II meetings held in 1999 and 2000 respectively, in which the Akumal manifesto, a formalized manuscript outlining the definition, goals and applications of positive psychology, was created (Sheldon, Fredrickson, Rathunde, Csikszentmihalyi, & Haidt, 2000). Seligman's determination to shift psychology's focus from a disease model toward a more positive psychology ideology (Seligman, 1999) was borne out of a realization

“that psychology had largely neglected the latter two of its three pre-World-War-II missions: curing mental illness, helping all people lead more productive and fulfilling lives, and identifying and nurturing highest talent” (Linley, Joseph, Harrington, & Wood, 2006, p. 4).

Since its inception positive psychology has derived many varying definitions (Linley et al., 2006). The development of definitions and progress in terms of conceptualizing positive psychology as a science, can be outlined by looking at some of the most influential literature presented since its inception. Seligman and Csikszentmihalyi (2000) first proposed the comprehensive view that the field of positive psychology is principally concerned with human prospering and is focused on helping people cultivate greater levels of happiness. They added that positive psychology is about valued subjective experiences that may occur in the past (well-being, contentment, and life-satisfaction), for the future (hope and optimism), and in the present (flow and happiness), at individual and group levels. Over and above that, they emphasized that normal functioning cannot be understood purely from a problem-based perspective, such as the medical model of contemporary psychology, which focuses on pathology and dysfunction in individuals (Seligman & Csikszentmihalyi, 2000).

In a similar vein, Keyes (2005) emphasized that, from the perspective of positive psychology, normal functioning cannot be understood from a pathological perspective and must include an emphasis on human prospering. Gable and Haidt (2005) asserted that positive psychology is concerned with conditions and processes, which promote flourishing or optimal functioning in individuals, groups or organizations. Linley et al. (2006, p. 5) developed the theory further, defining positive psychology as, “the scientific study of optimal human functioning”. Similarly, Deci and Ryan (2008) proposed that positive psychology refers to optimal psychological functioning and experience. While, Snyder, Lopez and Pedrotti (2010) suggested the need for a more comprehensive approach built on sound

scientific principles, in which a balanced perspective between positive psychology and the pathology model of psychology is sought, examining strengths and weaknesses, as well as stressors and available resources in the environment. It is clear that although definitions of positive psychology may vary, these definitions share core themes and differ mainly in terms of emphasis and interpretation (Linley et al., 2006).

For the purpose of this study, however, the latest definition provided by the Positive Psychology Centre, established by the front runners in the field, which defines positive psychology as “the scientific study of the strengths and virtues that enable individuals and communities to thrive” (Positive Psychology Centre, 2007, para. 1), will be used as working definition. Next, well-being, a concept central to the field of positive psychology (Linley, Maltby, Wood, Osborne & Hurling, 2009; Norrish & Vella-Brodrick, 2009, Seligman, 2011), will be conceptualized.

3. WELL-BEING

Despite the fact that several studies on the subject of well-being have been conducted in recent decades (e.g. Diener, 1984; Deci & Ryan, 2006; Keyes, 1998, 2002, 2005, 2006, 2007; Keyes & Annas, 2009; Linley et al., 2009; Ryff & Singer, 2008; Seligman, 2011; Waterman, 2008), definitions of this complex construct remain broad and vague (Dodge, Daly, Huyton, & Sanders, 2012). It was identified as far back as Ryff (1998a) that definitions of well-being have not been properly ascertained and established, emphasizing a need for theory-based formulations of the construct. The problem remains largely unresolved, with the construct of well-being still perceived as intangible, too arduous to define and difficult to measure (Dodge et al., 2012). Dodge, Daly, Huyton, and Sanders (2012) suggested a need for the concept of well-being to be defined within its multi-dimensional structure, proposing a new definition of

well-being as, "...the balance point between an individual's resource pool and the challenges faced" (p. 230). It is clear that various definitions of well-being exist, and, as a basis for gaining more clarity, a discussion of two separate, overlapping and compatible perspectives, namely hedonic well-being and eudaimonic well-being, follows (Keyes, 2006; Waterman, 2008).

3.1 Hedonic Well-being

The philosopher, Kraut (1979), defined hedonic well-being as "the belief that one is getting the important things one wants, as well as certain pleasant affects that normally go along with this belief," (p. 178). Hedonic well-being fundamentally focuses on the individual's feelings towards life (Keyes, 2006), and is associated with pleasure of feelings and activities (Keyes & Annas, 2009). It is a subjective experience of happiness or positive emotion (Keyes, 2006; Waterman, 2008). Keyes (2006) further conceptualized hedonia as positive affect, which is maximized for as long as possible while minimizing the volume and duration of any negative or unpleasant emotions. Hedonia is therefore associated with research concerning emotional well-being.

Emotional well-being consists of an individual's own subjective perception of happiness, life satisfaction, and the balance of positive and negative emotions over time. Subjective well-being, sometimes referred to as happiness, comprises both cognitive and affective self-assessment of an individual's life and experiences (Diener et al., 2010), and refers to an immediate emotional response to pleasant or unpleasant stimuli in the environment (Keyes, 2006). Whereas life satisfaction relates to an individual's long-term appraisal of life (Keyes, 2006), the hedonic approach views people as relatively empty and pliable, mainly gaining meaning from social and cultural teachings (Deci & Ryan, 2006).

The two traditions, however, are not mutually exclusive, rather, hedonism is an option

within the tradition of eudaimonism (Keyes & Annas, 2009). Evidence suggests that “eudaimonic and hedonic aspects of well-being can operate in tandem...” (Kashdan, Biswas-Diener, & King 2008, p. 228). An exploration of the concept of eudaimonic well-being will be discussed next in order to better understand this statement.

3.2 Eudaimonic Well-being

Eudaimonia can be traced as far back as Hellenic philosophy, and in particular to the work of Aristotle (translated by Irwin, 1985), and is also affiliated with some intellectual traditions of the 20th century, including humanistic psychology (Deci & Ryan, 2006). Eudaimonic well-being’s primary focus is on an individual’s functioning in life (Keyes, 2006), emphasizing human nature and the specific conditions that facilitate rather than diminish its development (Deci & Ryan, 2006). Mental health is seen through the lens of eudaimonic well-being as an individual’s potential manifested as positive functioning in life (Keyes, 2006). This approach consists of both psychological well-being (Ryff, 1989) and social well-being (Keyes, 1998), and is an indication of people’s perception of their own functioning in life (Keyes, 2006).

Psychological well-being includes six key dimensions, each representing what it means to be fully functioning and the endeavour toward recognizing talents including self-acceptance, personal growth, purpose in life, positive relations with others, autonomy, and environmental mastery (Keyes, 2006; Ryff, 1989; Ryff & Singer, 1998, 2006, 2008). Social well-being, as defined by Keyes (1998), consists of five multi-dimensional elements that measure the degree of social functioning of individuals, including social integration, social contribution, social coherence, social actualization, and social acceptance (Keyes, 2006). Broadly speaking, eudaimonic well-being refers to an individual’s quality of life as a whole (Keyes & Annas, 2009). Now that the concept of well-being has been theorized through the

views of both hedonia and eudaimonia it is possible to conceptualize a more holistic idea of what is meant by well-being.

3.3 Conceptualizing Well-being

To be happy and thrive, both hedonic and eudaimonic facets of well-being are necessary (Seligman et al., 2005). Seligman (2002) made an interesting distinction between pleasure (hedonia) and gratification (eudaimonia), which he extracted from the work of Aristotle. He proposed that gratification is attained when we focus on noble causes greater than ourselves by utilizing our unique signature strengths, which help us to transcend to levels of authentic happiness. More recently, in his book, *Flourish*, Seligman (2011) explains how he moved from his original theory of *‘authentic happiness’* to the concept of *‘well-being theory’*, and also suggests that well-being, not happiness as per his previous premise, is the central topic of positive psychology (Seligman, 2011). However, it was Keyes (2005) who first coined the term *‘flourishing’* to describe high levels of well-being. Keyes proposed a model of complete mental health represented on a continuum to include both the presence and absence of well-being. Nevertheless, the present study used both Seligman’s and Keyes’ theory on well-being as a point of departure.

3.3.1 Seligman’s (2002, 2011) theory of well-being (flourishing)

In his well-being theory Seligman proposes five criteria for flourishing, which are based on the work of Huppert and So’s (2009) definition of flourishing and his own theory of authentic happiness (2002). Huppert and So (2009) purported that flourishing includes three core elements, (a) positive emotions, (b) engagement and interests, (c) meaning and purpose, as well as at least three of the following features: self-esteem, optimism, resilience, vitality, self-determination, and positive relationships. Similarly, Seligman (2011) proposed that his

criteria for flourishing are made up of his core elements of authentic happiness, i.e. (a) positive emotion, (b) engagement, (c) meaning and purpose, and an additional two criteria, namely positive relationships and accomplishment. Seligman refers to these criteria as PERMA and points out that the inclusion of these elements, both containing attributes of subjectivity and objectivity, creates a theory or policy that is not only more objectively measurable but also more democratic because it is inclusive of individuals who do not naturally score high on measures of positive emotion, such as introverts for example. Also, each of these elements is measurable and teachable (Seligman, 2011). Finally Seligman (2011) stated that well-being theory, in positive psychology, aims to increase the amount of flourishing in both the individual's own life as well as for the broader community.

3.3.2 Keyes' (2005) theory on well-being (flourishing)

As mentioned above, Keyes proposed a model of complete mental health represented by a scale, which collectively measured and assessed both the presence and absence of well-being. Traditional views of mental health involve healing of wounds, solving problems and minimizing stress (Seligman & Csikszentmihalyi, 2000), determined by measuring only negative emotional states such as anxiety and depression. However, as highlighted by Keyes (2005), this is not a full picture of well-being. In contrast to Keyes' (2005) theory, The World Health Organization defines mental health as:

“a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community.” (World Health Organisation, 2001).

This definition suggests that mental health can exist in the presence of mental illness and vice-versa. Keyes (2005), however, stated that mental health could only be achieved if mental

illness was absent and mental health was present. This is in-line with Ryff and Singer (1996) who suggested that the path to recovery lies not only in easing symptoms of pathology but also in including positive aspects, because a deficiency of well-being leads to vulnerabilities when dealing with future adversities.

In addition, Keyes (2006) modelled his theory of complete mental health on the diagnosis of major depressive episode as per the Diagnostic and Statistical Manual IV (DSM-IV) approach. In other words, he used a system which relied upon a number of criteria that needed to be met in order for a diagnosis to be made. For example, just as a diagnosis of depression would be made on the basis of an individual meeting a number of criteria as set forth by the DSM-IV for major depression, so too, a diagnosis of mental health could be made if the individual showed a “high level on at least one symptom of hedonia and just over half of the symptoms of eudaimonia” (Keyes, 2006, p. 396). Similarly, individuals would be diagnosed as *‘languishing’* if they scored low on at least one symptom of hedonia and just over half of the symptoms of eudaimonia. The continuum of flourishing on the positive end of the scale and languishing on the negative end is balanced by a diagnosis of *‘moderately mentally healthy’* for individuals who exhibit neither of the opposing poles that assess the facets of well-being (Keyes, 2005).

Essentially, this model of mental health is considered complete because it consists of emotional well-being, which includes the hedonic scales of happiness with life, interest in life, and satisfaction with life; social well-being, comprising the eudaimonic scales of contribution to society, social integration, social growth and potential and acceptance of others; and psychological well-being which relates to eudaimonia and entails self-acceptance, environmental mastery, positive relations with others, personal growth, autonomy and purpose in life (Keyes, 2005; Ryff & Keyes, 1995). Therefore Keyes’ (2005) model includes all the elements from both the hedonic and eudaimonic perspectives. Furthermore, anything

less than flourishing results in increased disability and impairment with consequences such as depressive symptoms (Keyes, 2004a), conduct problems (Keyes, 2006), and diminished psychosocial functioning (Keyes, 2006). Huppert and So (2009) implemented Keyes' model in a well-being study, which incorporated about 43 000 adults over the age of 16 in 23 European countries. From this sample data they devised a well-being spectrum that illustrated that very few people operate on a level of flourishing.

For the purpose of the present study, well-being is seen both as positive functioning and the absence of mental illness, such as anxiety and depression. This is in line with Keyes' (2005) model of complete mental health, and both Huppert and So (2009) and Seligman's (2011) definitions of flourishing. To evaluate these constructs, both measures of well-being and depression will be included in the study, which will allow for finer distinction between the levels of well-being and changes in depressive symptoms (Seligman et al., 2005).

The current study is also concerned with how interventions, in particular, enhance psychosocial well-being. Psychosocial well-being is associated with emotional, social and psychological aspects of well-being and relates specifically to low helplessness, clear goals in life, high resilience and high intimacy (Keyes, 2007). Therefore, the intervention in this study will be structured within the theoretical frameworks of Keyes' (2005) model of complete mental health with activities being selected on the basis of Seligman's (2011) elements of well-being theory that include positive emotion, engagement, meaning, relationships and accomplishment.

Well-being is a fundamental component of mental health (Bolier, Haverman, Westerhof, Riper, Smit & Bohlmeijer, 2013). It is important because it is an expression of the quality of our lives. Well-being is associated with important issues such as physical health, survival, positive relationships, engagement, productivity and positive emotions, all of which increase and build cognitive capabilities, pro-social behaviour and coping resources. Citizens

high in well-being benefit the societies they belong to (Huppert & So, 2009). The importance of well-being and its associated benefits are emphasized by the fact that anxiety and depression among adolescents is a serious and growing worldwide mental health issue (Heller, 2012; Sin & Lyubomirsky, 2009; Waters, 2011). Evidence exists that increased levels of well-being are associated with lower levels of anxiety and depression. Further evidence suggests that adolescents with complete mental health exhibit superior functioning in social and educational arenas (Suldo & Shaffer, 2008). Furthermore, increased well-being in adolescence may prevent future mental health issues later in life and can be beneficial in other areas of life, such as academic performance (Norrish & Vella-Brodrick, 2009).

The present study is concerned particularly with interventions that build greater levels of well-being in adolescents because there is a growing demand for such studies and most research to date has concentrated primarily on adults (Keyes, 2006). Although adolescence is a normal period of development, and most adolescents achieve maturation without major maladjustment (Louw & Louw, 2014), several studies suggest that the mental health of adolescents is of increasing concern worldwide (Keren & Tyano, 2006; Patel, Flisher, Nikapota & Malhotra, 2008; Shavers, 2014). Major organizations such as The World Health Organization (WHO), The World Psychiatry Association, and the International Association for Child and Adolescent Psychiatry and Allied Professions, have indicated the pervasiveness of mental health problems among adolescents (Okasha, 2003). Statistics show that almost 10% of children have a major depressive episode before the age of 14 and as many as 20% will have had some kind of mood disorder, disruptive disorder or substance abuse disorder before the age of 10 (Keyes, 2006). Yet, few studies have focused on positive psychology intervention efficacy for increasing adolescent well-being (Suldo, Savage, & Mercer, 2014).

From a South African perspective, research on the effect of interventions to enhance well-being among youth is limited, particularly those in the early stages of adolescence (Guse

& Vermaak, 2011; van Schalkwyk & Wissing, 2013). Guse (2014) emphasized the need for further research on the efficacy of interventions that enhance well-being within the South African context in order to clarify and develop existing findings further. As such, and taking into account the fact that this study will focus on children in early adolescence, the developmental stage of adolescence will be defined and discussed next.

4. ADOLESCENCE

Adolescence is the transition period from childhood to adulthood. It starts with puberty and ends when adult norms are met. The age at which adolescence begins and ends can vary from one individual to the next depending on various factors, including socio-cultural influences and individual differences. Rather than chronological age, there are three important distinguishing characteristics that determine the beginning and end of adolescence, namely, physical and psychological development, and socio-cultural norms. Therefore depending on the individual, adolescence can start as early as 11 years old and end as late as 21 years old (Louw & Louw, 2014).

Furthermore, adolescence can be viewed as consisting of three overlapping phases, namely early, middle and late adolescence (Louw & Louw, 2014). This study is primarily concerned with the phase of early adolescence, which is characterized by rapid physical growth and the development of sexual maturation. Sexual maturation is regarded as one of the most intense periods in human development. Girls (10-13) in general begin this rapid physical growth and sexual maturation earlier than boys (12-15) in general. Boys, however, grow faster than girls and therefore they tend to be taller on average at the end of this growth spurt. Emotionally, adolescent girls tend to feel more angry and depressed than boys their age, while boys may exhibit more irritation and aggression. Moreover, their coping styles

tend to differ, with boys being more energetically cathartic, often through physical activity, compared to girls, who may be more introspective, which may account somewhat for the higher levels of depression amongst girls. These gender differences are noteworthy and may have major implications for studies focusing specifically on early adolescence (Louw & Louw, 2014).

In addition to the changes in growth rate (physical) and the development of sexual maturation (hormonal), adolescence is also a period during which other major physical, cognitive, emotional and interpersonal developmental changes take place across a range of spheres. These changes contribute significantly to the health and well-being of adolescents. For instance, physically girls may become self-conscious of their increasing weight while boys may be aware of their changing voices. These realisations may impact on adolescents' psychological well-being and development (Louw & Louw, 2014).

To add to that, as adolescents mature, their cognitive abilities for abstract reasoning increases, and they become less dependent on their parents and family, while peer relationships become more important. During adolescence, brain development is predominantly involved with refinement. The limbic system is concerned with social and emotional processing, while the prefrontal cortex, which is in a continuing state of development, is related to advanced cognitive abilities such as rejecting irrelevant information, organizing complex tasks, sequencing, planning, imagining the impossible, formulating complex hypothetical arguments and controlling impulses (Louw & Louw, 2014). Moreover, at the age of 11-13, the period characterised as early adolescence, children reach a stage of optimal cognitive development where they are capable of both logical and abstract reasoning (den Boomen et al., 2014). The ability to gather facts, oppose views, create alternatives for different situations, think abstractly, and test their knowledge against their own logic is what sets adolescents apart from younger children in the classroom (Louw &

Louw, 2014). Consequently, this stage may be the ideal time for positive intervention while, young minds are still pliable and simultaneously able to grasp more abstract concepts. Froh (2011) supported this notion by emphasizing the importance of identifying and enhancing positive strengths in the formative years.

In sum, hormonal, cognitive and environmental factors are related to major changes during adolescence. These physical, sexual, and cognitive developments all take place within a social context and may either enhance or hinder social development. Social development is shaped by parents, peers and others during adolescence (Louw & Louw, 2014). Moreover, the associated characteristics of adolescence tend to be present across cultures. Westerners, who encourage individuality and creative consciousness, are however, more severely affected than those from traditional cultures who tend to value conformity and collective consciousness (Louw & Louw, 2014). Other studies have confirmed cultural differences among adolescents within the South African context. For instance, a study among 1217 English, Afrikaans and Xhosa speaking South African school-going adolescents showed that in most domains, intercultural differences were evident (Alberts, Mbalo, & Ackermann, 2003).

Notwithstanding these cultural differences, it is during this stage of vigorous development (Keyes, 2006; Louw & Louw, 2014) that adolescents enter a critical period in the etiology of anxiety and depression (Hankin, 2006). Therefore positive interventions may help in preventing mental health disorders, promoting positive development, and increasing overall well-being before the onset of disorders associated with adolescence develops (Brunnerwasser et al., 2009; Opler, Sodhi, Zaveri, & Madhusoodanan, 2010). The following section conceptualizes positive psychology interventions as a tool to increase levels of well-being, and discusses the various interventions that will be implemented for the purposes of this study.

5. POSITIVE PSYCHOLOGY INTERVENTION

Positive psychology intervention refers to planned activities designed to promote positive feelings, cognitions and behaviours. Research suggests that positive interventions enhance well-being (Sear & Vella-Brodick, 2012). Positive psychology intervention was first aimed at depressed individuals, but in application it emerged that increases in happiness and well-being were evident in non-depressed samples, too (Suldo et al., 2014).

The increasing number of positive psychology interventions available today enables users to choose activities of their preference, which leads to more activities being followed through to completion, and therefore greater increases in levels of well-being (Schueller, 2010). Moreover, the greater range of choices in activities has led to the creation of comprehensive interventions that consist of multiple activities (Suldo et al., 2014). In addition, Lyubomirsky (2011) emphasizes that each individual will have a positive activity that is a 'best-fit' to the individual's personality, goals, source of happiness, social environment etc. To clarify further, different people will benefit from different activities determined by what they enjoy, what is meaningful to them, and what fits with their culture, values and social structure. Timing and variety of intervention are also important factors (Lyubomirsky, 2011).

Sheldon and Lyubomirsky (2006) suggested that persistent effort is required to achieve long-term emotional benefits. While other studies support the notion that identification (self-concordant motivation) with a specific model or activity results in more enduring attainment over time and more satisfaction when achieved (Sheldon & Elliot, 1999; Sheldon & Lyubomirsky, 2006). Also, research suggests that positive psychology interventions resulted in greater improvements in well-being if (a) the positive strategies were practiced regularly, and even more so if they were incorporated into daily life; and (b)

multiple positive psychology intervention activities were used (Sin & Lyubomirsky, 2009). For this reason the current study will include several intervention activities which were administered in half-hour sessions over a four week period.

Seligman (2002) suggested that happiness levels could be increased considerably through intentional activities that provide a buffer against psychopathology and a multidimensional view of increasing happiness. Furthermore, building strengths, such as learned optimism through intervention, effectively prevents depression and anxiety (Seligman, 2002). Similarly, Seligman (2002) suggested that adopting positive psychology activities as a general stance toward prevention could help thwart other mental health issues e.g. future directedness exercises and activities that enhance flow could prevent drug abuse in teenagers, or, enhancing intrapersonal skills and the strength of persistence in adversity in children with a genetic disposition toward schizophrenia in an attempt to prevent rather than cure. Seligman's (2002) original theory on positive emotion was categorized into past (satisfaction, contentment, serenity, pride and fulfilment), present (joy, ecstasy, calm, zest, pleasure and flow), and future (optimism, hope, faith and trust).

In the present study gratitude activities were implemented to foster positive emotion about the past, while kindness, savouring, optimism and signature strength activities were added to foster positive emotion in the present, and an optimistic thinking exercise was used to create positive emotions about the future. For the present, Seligman (2002) further distinguished between pleasures (immediate sensations) and gratifications (using personal strengths in meaningful ways), and postulated that identifying character or signature strengths and using them in new, unique ways could help to foster greater levels of happiness. Research findings have since supported this claim (Seligman, 2005). Finally, Seligman (2002) proposed that increasing learned optimism in individuals could increase their happiness levels. The activities in the present study also qualify to meet all the elements

included in Seligman's (2011) well-being theory, which aims to foster flourishing, and includes positive emotion, engagement, relationships, meaning, and accomplishment (PERMA).

Lyubomirsky, Sheldon and Schkade (2005) provided a theoretical framework for research on experimental interventions, referred to as the sustainable happiness model. According to the sustainable happiness model, there are three factors which contribute toward an individual's long-lasting happiness, specifically (a) the set point, (b) life circumstances, and (c) intentional activities. They also suggested that activities such as acts of kindness, expressing gratitude, conveying optimism, and savouring positive experiences and life events create the most promising route to maintaining improved happiness.

In South Africa, research has yielded inconsistent results regarding positive intervention. Existing positive intervention studies among adolescents in high school have been promising (Guse & Vermaak, 2011; van Schalkwyk & Wissing, 2013), but other interventions seemed to be less effective (Kruger, 2013). Further research is needed to ascertain whether positive intervention is associated with well-being across time. However, evidence from empirical studies suggests that adolescents may benefit from positive intervention in terms of increased well-being and building resilience to mental illness (Suldo et al., 2014), engendering greater levels of life satisfaction (Peterson et al., 2005; Seligman et al., 2009) and increasing academic performance (Keyes, 2006; Keyes et al., 2012).

5.1 Positive Psychology in Schools (Positive Education)

Seligman (2011) proposed good reasons for including well-being as part of education in schools, noting that (a) rates of depression amongst young people have risen considerably, and (b) there has been a minimal increase in well-being and happiness over the last two generations despite the major increase in living standards and prosperity. In addition he

postulated a third motivation, which is that increased well-being enhances learning, since positive emotion increases attention and creative thinking, and produces more holistic reasoning.

Positive psychology intervention (PPI) studies including youth as the intervention group have only begun to appear in literature in the past 5-6 years. These studies have shown promising results in gratitude and character strengths interventions provided to children at their schools by either psychologists or school teachers (Suldo et al., 2014). One such positive psychology intervention facilitated by psychologists included a 5-week group programme that aimed to determining the effect of increasing hopeful thinking and goal-directed behaviour in early adolescents. They found that benefits of a hope intervention in schools had lasting effects in enhancing hope, life satisfaction and self-worth in youth, although they did not find significant changes in mental-health or academic accomplishment (Marques, Lopez, & Pais-Ribeiro, 2009). Dawood's (2013) evidence-based study to determine whether school based positive intervention would show greater improvements in children and adolescents' well-being compared to more traditional methods of treating the deficit, produced mixed results. He suggested that, although the existing data does show evidence for promoting and utilising positive psychology interventions, the evidence base is not large enough to begin such interventions in the near future. Furthermore, Dawood (2013) challenged the theory that constructs such as hope are in fact facets of any therapeutic action, and that concepts such as gratitude are less effective for those who already experience high levels of positive emotions, adding that females often benefit more from these interventions than males. Moreover, Dawood's (2013) concerns extend to the successful application of such programmes because positive psychology interventions in schools require extensive training of facilitating staff, to the extent that a new force of practitioners may be needed. However, he also claims that providing positive psychology to children in schools may have the benefit of eliminating

psychological stigma, as all children will be provided with psychological services and this may reduce pathological prevalence through prevention. Finally he added that such intervention programmes may be beneficial for those lost in the system between the different levels of primary and tertiary institutions (Dawood, 2013). These mixed findings suggest a need for more critical research. Huebner and Hills (2011) agreed, maintaining that although much research needs to be done, findings suggest that enough evidence exists to provide a reasonable scientific basis for increasing professional practice and knowledge, such as that provided by positive psychology, with children and adolescents.

Positive psychology is a young field and as with any new domain of knowledge there is a systematic process involved in the flow from research to practical application (Huebner & Hills, 2011). This process begins with collecting available, valid knowledge, and then transmitting this through training, intervention programmes or distribution while maintaining the given environment in which they occur (Riley-Tillman, Chafouleas, Eckert & Kelleher, 2005). The need to build a solid research base is currently being addressed in the field of positive psychology (Huebner & Hills, 2011) and within the context of South Africa, where more and more research is being conducted and transmitted into appropriate practice, contexts and innovations complementing the domain of traditional psychology (Guse, 2014; Kruger, 2013; Van Schalkwyk, & Wissing, 2013).

In conclusion, the time to incorporate positive psychology concepts and practices in the school setting is ripe (Huebner & Hills, 2011). Thus increased efforts towards positive psychology practices may alter traditional psychology by providing the opportunity to move from a focus on solving problems to a broader focus of enhancing optimal living and promoting flourishing in children and adolescents (Huebner & Hills, 2011). To explore this further, the following section reviews empirical research related to the different positive psychology interventions in adolescence.

6. EMPIRICAL RESEARCH RELATED TO POSITIVE PSYCHOLOGY INTERVENTIONS AND WELL-BEING AMONG ADOLESCENTS

Several studies have identified positive psychology components that enhance well-being among adults, including factors such as flourishing (Seligman, 2011), positive emotions (Fredrickson, 2004), gratitude (Froh, Kashdan, Ozimkowski & Miller, 2009; Emmons & McCullough, 2003), character strengths (Peterson & Seligman, 2004), mindfulness (Salzberg, 2011), optimism (Seligman, 2002), kindness (Sin & Lyubomirsky, 2009), savouring (Bryant, 1989, 2003), and increasing optimistic thinking through visualization methods (King, 2001). Several of these studies have made use of a group of positive psychology intervention (PPI) packages to enhance well-being. Such studies support the framework of Seligman's (2002, 2011) theory for increasing happiness and flourishing.

The intervention in the present study was designed to increase well-being amongst early adolescents using the framework of Seligman (2002; 2011) for increasing happiness. This framework looks at increasing positive emotion in the past, present and future, as well as fostering engagement, relationships, meaning, and accomplishment (Seligman, 2002; 2011). Thus, taking into consideration the fact that, according to Keyes (2005), the absence of mental illness does not equate to the presence of optimal mental well-being, the present study is interested in the enhancement of mental health as well as the prevention and treatment of mental illnesses such as anxiety and depression in young people. And finally, empirical evidence in support of PPI's provided by similar studies conducted around the world have been included (Seligman et al., 2009; Suldo et al., 2014; Richards & Hupperts, 2011; Norrish & Vella-Brodrick, 2009).

A meta-analysis of positive psychology interventions conducted among adults by Sin and Lyubomirsky (2009) concluded from 49 studies that positive psychology interventions significantly increased levels of well-being, while 25 combined studies revealed that positive

psychology interventions were also effective in treating symptoms of depression.

Another such study was Suldo et al.'s. (2014) 10-week well-being intervention programme, which was administered to a group of both males and females in early adolescence who showed room for improvement on a life satisfaction self-report scale. The programme included 55 individuals randomly assigned to either the intervention group or the control group. The activities in Suldo et al.'s (2014) intervention programme was similar to those of the current study and included gratitude interventions, acts of kindness, assessment and use of signature strengths, optimistic thinking and hope interventions. Results indicated that the programme was associated with increases in global life satisfaction among those who participated, as well as student enjoyment. In addition, the participants in the intervention group showed greater increases in life satisfaction by the middle of the year in comparison with students in the control group. This study provided empirical evidence for the use of PPI's in school education. Furthermore, Suldo et al. (2014) developed a detailed manual implementing and facilitating their intervention.

Critics of PPI's in schools have emphasized that such programmes would require too much manpower as they need to be facilitated by trained psychologists (Dawood, 2013). However, the development of a detailed manual as in the case of Suldo et al. (2014) makes possible the integration of such a programme by professionals such as teachers or mental health care providers within the school system and within the normal school schedule.

Another study providing empirical evidence in support of PPI's in schools was Richards and Hupperts' (2011) longitudinal analysis of adolescents documenting their well-being trends to the age of 53. This study indicated that adolescent well-being predicts positive adult well-being and not merely the absence of mental health issues, implying that early intervention may have life-long benefits (Richards & Huppert, 2011). Several other studies have shown strong support for positive intervention early in adolescence, providing evidence

for increased life satisfaction, positive mental health functioning, and well-being (Norrish & Vella-Brodrick, 2009; Seligman et al., 2009; Suldo et al., 2014).

Rashid and Anjum (2008) utilized a positive psychotherapy model with the foci of developing positive emotional resources as well as character strengths and meaning in life, with the aim of counterbalancing depressive symptoms. The multi-target intervention aimed at middle school students included both traditional psychotherapeutic techniques as well as positive psychology interventions such as gratitude, character strengths, and savouring activities over an eight-week period which was facilitated by psychologists. Results of the intervention group compared with the control group showed significant increases in well-being as well as improvements in their behaviour as reported by their teachers, although evidence of improvements on depression or global life satisfaction were lacking.

Another study that provided evidence for the effectiveness of PPI's for enhancing well-being and alleviating symptoms of depression, tested several variations of interventions described by Seligman et al. (2005) including gratitude visits, three good things, signature strengths, and counting acts of kindness (Gander, Proyer, Ruch & Wyss, 2013). The results supported Seligman et al.'s (2005) postulation that positive emotion, engagement and meaning are important in fighting depression and engendering more life satisfaction. These conditions can be cultivated through interventions such as increasing positive emotion through meditation practices, nurturing social relationships and fostering gratitude. Although not a focus of this study, it is notable that other advantages for early adolescence exist in the effort to increase levels of well-being. For example, Suldo and Shaffer (2008) suggested that increased well-being among scholars leads to better academic performance as well as desirable social and physical health outcomes. Several other studies support the notion that happier adolescents perform better academically (Howell, 2009), and show greater levels of resilience (Norrish & Vella-Brodrick, 2009).

In summary, a variety of positive psychology interventions have been found to be effective including interventions that focus on signature strengths, cognitive and emotional skills (Sin & Lyubomirsky, 2009). Correspondingly, gratitude, optimism, signature strengths, kindness and meaning in life, have all been associated with increased well-being (Blackwell et al., 2013; Froh et al., 2009; Howell, Passmore, & Buro, 2013; Layous, Nelson, Oberle, Schonert-Reichl, & Lyubomirsky, 2012; Park & Peterson, 2008).

Following is an examination of the activities employed in this study that provide empirical evidence supporting the effectiveness of their implementation among early adolescents within the context of the school environment. These interventions encompass positive psychology constructs as proposed by Keyes (2005), which include well-being, optimism, flow and happiness, and provide evidence of increasing well-being and decreasing depressive symptoms. Moreover, these interventions include increasing gratitude, increasing positive emotions in the present, increasing optimism and identifying and developing signature strengths, all of which were included in the present study. Next, increasing positive emotion in the present through the act of meditation will be discussed.

6.1 Loving Kindness Meditation As Mindfulness Intervention

Mindfulness entails higher levels of awareness of emotion and experience in the present. It is devoid of greed, emotions related to aversion such as anger or fear, and free of delusion, which is characterized by uncertainty, confusion, and anxiety. Mindfulness therefore refers to living with awareness of our emotional states and experiences, but without attachment, providing the opportunity for continued growth and insight (Salzberg, 2011). Correspondingly, mindfulness exercises are associated with increased positive emotions, which enhance well-being, and as such, are likely to benefit depressed individuals (Guse, 2014; Sin & Lyubomirsky, 2009).

In adolescence, learning to regulate emotion is an important social skill. It has the potential benefit of promoting better academic performance and enhancing interpersonal relationships (Louw & Louw, 2014). One way of fostering increased positive emotions is through loving-kindness meditations (LKM). LKM is a type of mindfulness-based meditation technique that can be done while walking, sitting or lying down (Hoffman, Grossman, & Hinton, 2011; Salzberg, 2011). Loving-kindness is an acknowledgement that “everyone shares the same wish to be happy, ... the same vulnerability to change and suffering, ... and often a similar confusion as to how to achieve that happiness, ... which elicits a sense of caring”, (Salzberg, 2011, p. 178). In short, LKM focuses on loving, kind concern and wishes toward oneself, for a specific individual, toward specific others, and toward all beings everywhere (Hoffman et al., 2011).

Mindfulness is associated with empathy, which opens our hearts to others and cultivates connection rather than solidarity (Hoffman et al., 2011). LKM, in particular, emphasizes compassion and connection. Compassion and connection relate to non-judgment and non-attachment to the present moment, thereby establishing deeper levels of attention, presence, acceptance and self-regulation. Therefore, LKM is helpful in forming healthy connections with the self and with others (Leppma, 2012).

Human beings have an innate desire to connect with others. Loving-kindness meditation provides that sense of social connectedness (Hutcherson, Seppala, & Gross, 2008). Social connectedness increases psychological well-being and health (Brown, Nesse, Vinokur, & Smith, 2003), builds rapport between people, begets trust and co-operation as well as increases self-esteem, and decreases the prevalence of anxiety (Lee, & Robbins, 1998), depression and physical ailments (Hawkey, Masi, Berry, & Cacioppo, 2006). Equally connectedness to others is related to empathetic responding. However, in a world of ever-increasing technological development, and economic and social changes, the characteristics

associated with connectedness are being eroded, resulting in increased social isolation and mistrust of those outside one's known social circles, leading to a downward slope in social connectedness (Hutcherson et al., 2008). In their study Hutcherson et al. (2008) found significant explicit and implicit positive feelings towards neutral strangers, explicitly toward the targeted person, and positive implicit changes toward self as a result of LKM.

One of the major effects of loving kindness meditations is self-compassion. Self-compassion is the ability to recognize when we are struggling and to make a commitment to improve things (Welford, 2013). Self-compassion is associated with increased flourishing and reduced psychopathology, as well as enhanced motivation (Germer & Neff, 2013).

In conclusion, mindfulness includes benefits associated with higher levels of positive emotion and awareness in the present (Salzberg, 2011), such as self-compassion (Germer & Neff, 2013), attention, acceptance, and self-regulation (Leppma, 2012), empathy (Hoffman et al., 2011), motivation and greater well-being. This long list of benefits validates Ward's (2006) suggestion of meditation as a treatment and antidote for the stressors of both teaching and learning, thereby aiding both the teacher and student within the context of the present study. Furthermore, these benefits seem to be robust. Cohn and Fredrickson (2010) found that participants in their study maintained positive gains at a 15-month follow up whether or not their meditation practice had continued.

LKM was included in this study in order to promote positive emotion in the present as per Seligman's (2002, 2011) theory of well-being, as well as to stimulate a decrease in the prevalence of anxiety and depression. A five minute LKM recording was developed in which the listener was guided to silently repeat a set of loving kindness well-wishes toward themselves first, then the toward someone they find easy to love, then a neutral person, then someone with whom they are experiencing difficulty or conflict, and finally to all beings everywhere. The well-wishes included the following four statements:

“May I / you / all beings everywhere / be safe and protected from all harm
May I / you / all beings everywhere / be happy and experience joy
May I / you / all beings everywhere / live with ease and find peace in my / your heart
May my / your / life be filled and surrounded with love”

Next, gratitude interventions, which are also linked to positive emotion in the present, will be discussed.

6.2 Gratitude Interventions

Gratitude refers to appreciating the positive aspects of life, and is robustly related to overall well-being (Wood, Froh, & Geraghty, 2010). Gratitude is provoked when a recipient of a bestowed benefit perceives himself as the intended beneficiary (McCullough, Emmons, & Tsang, 2002).

In early adolescence gratitude is related to social, emotional and physical benefits, including resilience, generosity, compassion, empathy and quality of relationships, as well as broadening problem-solving strategies and ameliorating negative emotions (Froh et al., 2009). Moreover, gratitude interventions demonstrate the greatest effectiveness of all well-being enhancing positive psychology interventions, and since neural plasticity is greatest during the early developmental stages, it seems critical to establish these interventions in early adolescence (Froh et al., 2009). Few gratitude-enhancing intervention studies have been aimed at early adolescents, but overall results of gratitude interventions seem to yield inconsistent findings across different studies (Froh et al., 2009). Froh et al. (2009) suggested that gratitude interventions are more impactful among individuals with a lower baseline of positive emotion or with risk factors such as elevated psychopathology or family discord. In essence an ‘emotional ceiling’ exists for individuals already high in positive affect (Froh et

al., 2009). Guse (2014) suggested another reason for such inconsistencies in gratitude-related research may be the timing of the intervention. Despite these mixed findings, Guse (2014) maintains that gratitude remains an important contributor to well-being.

Two of the most widely used gratitude interventions include writing a gratitude letter and making a list of things to be grateful for either by starting a gratitude journal or by employing a counting blessings strategy (Guse, 2014). Writing a gratitude letter entails thanking someone who has not been properly thanked before in writing and reflecting on the process afterwards. Research suggests that the act of writing a gratitude letter contributes to greater levels of life satisfaction as well as increasing happiness and decreasing depressive symptoms among adolescents (Froh et al., 2009).

Counting blessings involves listing the things for which one feels gratitude for at a specific time. An experimental study of gratitude and subjective well-being among early adolescents indicated that counting blessings was related to optimism, increased school satisfaction, and decreased negative affect (Froh, Sefick, & Emmons, 2008). Therefore it would seem that both writing a letter of gratitude and counting blessing may be effective interventions for enhancing well-being among early adolescents.

Moreover, several studies indicate that beginning an intervention with gratitude activities may act as a trigger leading to escalating positive emotions (Fredrickson & Joiner, 2002; Lyubomirsky & Layous, 2013). Therefore the present study began with the gratitude intervention which consisted of both the counting blessings activity, which was practiced weekly for the duration of the intervention period, and writing a gratitude letter.

Another point of inconsistency in gratitude studies is the effect of frequency of an activity. Emmons and McCullough (2003) suggested that exercises performed with greater frequency lead to higher levels of happiness. However, Lyubomirsky and Layous (2013) claimed that activities performed once a week as opposed to daily were optimally effective.

The present study followed the instruction of Lyubomirsky and Layous (2013) for two reasons: First, their study was more recent and relevant to the present study, and second, the age of the participants in the present study as well their school homework load were motivating factors in performing the ‘three good things’ exercise weekly instead of daily.

Gratitude is especially important in terms of healthy development in adolescents because it encourages them to recognise that they are supported and nurtured by others, which should reinforce feelings of security and their sense of being valued (Froh, Emmons, Card, Bono, & Wilson, 2011). A major problem that negatively influences well-being amongst adolescents is the phenomenon of materialism, which is on the increase (Chaplin, & John, 2007). Materialism refers to a lifestyle of collecting goods beyond what is necessary and includes the belief that attaining financial success, high status, the right image and many possessions is important (Goldberg, Gorn, Peracchio, & Bamossy, 2003). Froh et al. (2011) reinforced the notion that gratitude is a tonic for materialism as the two constructs are inversely related to one another.

In their examination of the influence of gratitude vs. materialism on social, emotional, and academic performance amongst youths, Froh et al. (2011) found that adolescents who scored higher in gratitude enjoyed greater social integration, reported higher levels of life satisfaction, attained higher academic results, and felt less envious and depressed than their peers with less gratitude. These findings support other studies which suggested that materialism decreases well-being (Froh, Yurkewicz, & Kashdan, 2009; Goldberg et al., 2003; Kasser, Ryan, Couchman, & Sheldon, 2004). Froh et al. (2011) further suggested that materialistic adolescents seemed to be languishing while their less materialistic counterparts tended to flourish more, and that the negative effects of materialism can be remedied by teaching these children to be grateful for what they have using gratitude interventions.

Furthermore, gratitude encourages meaningful encounters amongst people, creating

solid social bonds (Algoe, Haidt, & Gable, 2008; Algoe, 2012) and strengthening supportive relationships (Froh et al., 2009). Fredrickson (1998, 2001) grouped gratitude with the strength of hope in her broaden-and-build theory of positive emotions, including forgiveness as the broadening element complementing gratitude. In addition she suggested that gratitude may broaden adolescents' view of their life circumstances and in turn may be a crucial component for flourishing as well as enhancing overall well-being and physical health (Froh et al., 2009).

Some evidence exists that gratitude interventions may increase well-being while not necessarily alleviating mental illness (Froh et al., 2009). For example, Froh et al. (2009) found that counting blessings did not increase positive affect, although it did decrease negative affect. This evidence is supported by Keyes' (2007) theory, which distinguished between pathology and flourishing as separate constructs. Therefore, to ensure optimal outcomes in gratitude interventions, it is essential to identify significant differences in the different variables, which effect improvements in positive experiences (Froh et al., 2009).

Another factor, which may influence gratitude studies, is the role of gender differences. While girls show a tendency toward being more dispositionally grateful, boys exhibited stronger associations between gratitude and family support (Froh et al., 2009). Results show that women seem to be more grateful than men and in so doing, reap the benefits. Several reasons have been suggested to account for these findings. First, women are more emotionally expressive than men, a trait that is positively related to gratitude and results in greater psychological benefits. Second, women tend to share the experiences for which they feel grateful which causes the recipient to feel acknowledged, validated and important and results in the initiation, maintenance and strengthening of relationships. Third, expressed positive emotions produce warmth and closeness between people leading to a desire to spend more time together. Conversely, men's inclination toward avoiding feelings may rob them of

the opportunity to create and strengthen such relationships. Women are also more likely to act altruistically as a result of gratitude than men, deepening social ties and increasing their prospects of well-being. Because women report experiencing more gratitude than men they are more likely to benefit pro-socially from benefactors, be it in the form of more nurturing relationships or material possessions, and these resources will add up over time creating a store to tap into when needed (Kashdan, Mishra, Breen, & Froh, 2009). Although findings amongst adolescents are as yet still largely unsupported and therefore still considered exploratory, findings in adult studies, which may differ, should be reserved for hypothetical notation in the hope of gaining a deeper understanding into the role of gratitude in early adolescence (Froh et al., 2009; Kashdan et al., 2009).

Gratitude enables people to appreciate the gifts of the present, releases them from past remorse or disappointment and frees them from future angst. Gratitude also helps people realize that it is connectedness with others that creates happiness, not material possessions. In fact, materialism has been blamed for the breakdown of relationships and is seen as an impediment in the road to flourishing for youth (Froh et al., 2011).

Gratitude and kindness are closely linked: “Gratitude results when people receive kindness from other people, kindness entails enacting kind behaviour toward other people” (Otake, Shimai, Tanaka-Matsumi, Otsui & Fredrickson, 2006, p. 362). In the present study gratitude was fostered in two ways: firstly, participants were required to keep a gratitude diary in which they would list three things they were particularly grateful for once each week. They were given the opportunity to share these during sessions each week. Second, participants were asked to write a gratitude letter to someone whom they felt grateful towards and had perhaps never thanked. The letters were then personally delivered and the process reflected on. The next section will examine the strength of kindness as an invention strategy.

6.3 Kindness Intervention

Acts of kindness refer to doing good things for others (Layous et al., 2012). It is a behaviour that benefits or makes others happy at the cost of the giver's time or effort (Lyubomirsky et al., 2005; Sheldon & Lyubomirsky, 2006). Moreover, the strength of kindness consists of three elements: (a) the drive to show kindness towards others, (b) recognizing kindness in others, and (c) performing acts of kindness in one's daily life (Otake et al., 2006). Studies show that doing good things for others benefits not only the recipient but also the giver in terms of well-being and popularity (Layous et al., 2012). Moreover, acts of kindness enhance meaning in life, which is associated with increased levels of well-being (Howell et al., 2013).

A randomized controlled intervention performed at the laboratories of Boehm and Lyubomirsky in 2008 involved a ten-week kindness intentional behavioural activity where participants were asked to perform random acts of kindness on a regular basis. Their results showed that the frequency of random acts of kindness did not have a significant impact on well-being, but the *variety* of different acts of kindness resulted in an upward trajectory for happiness even following a one month post-test. Also, the control group showed no changes in their levels of happiness throughout the study, and those not practicing *variety* of kind acts became less happy by the middle of the intervention period followed by a rebound to their baseline level of happiness.

In a second study it was found that participants who performed all their kind acts in a single day showed more significant increases in well-being compared with those who performed their kind acts over a longer period (e.g. a week), suggesting that, contrary to the results of the first test, intensified frequency of acts of kindness does in fact play a significant role in increasing well-being, provided the frequency is condensed over time. Therefore both variety of acts as well as consideration for timing and frequency should be carefully thought

out when planning a kindness intervention (Boehm & Lyubomirsky, 2009).

Although South African specific research on acts of kindness is lacking (Guse, 2014) other research does suggest that the effectiveness of kindness interventions holds true across cultures (Otake et al., 2006). Otake et al. (2006) conducted two kindness studies, the first on Japanese undergraduate students and the second on American undergraduate female students. Their results suggested a reciprocal relationship between kindness and happiness. In other words “happy people are more kind in the first place and that they can become even happier, kinder and more grateful following a simple intervention,” (Otake et al., 2006, p. 370). These findings are in line with those of Emmons and McCullough (2003).

In other respects, kindness can be considered as an adaptive factor because of the role it plays in fostering good social relationships (Otake et al., 2006). Adaptive factors are coping strategies, which assist people in reframing stressful or negative situations in a more positive way and inspire the strengthening of social relationships, while increasing coping resources (Lyubomirsky et al., 2005). One of the benefits of kindness interventions is enhanced pro-social behaviour where the emphasis is on nurturing social relationships. Research suggests that happiness and pro-social behaviour are reciprocal. For instance happy adolescents are more likely to involve themselves in pro-social activities and have fulfilling friendships. These adolescents most often present as emotionally well-adjusted, supportive and cooperative (Layous et al., 2012). In addition, acts of kindness may cause people to perceive themselves as altruistic, fostering feelings of confidence and optimism in their ability to be helpful, promoting efficaciousness, and cultivating a sense of being in control. Moreover, kindness generates relatedness among individuals inspiring appreciation and gratitude and satisfying an innate human need for kinship (Lyubomirsky et al., 2005).

In accordance with the gratitude intervention, it is believed that women, more than men, are more attuned to kindness because they show more positive responses to observing

acts of kindness (Otake et al., 2006). A study exploring the character strengths of 759 American college undergraduates supported this finding, reporting differences in 11 of the Value in Action (VIA) character strengths among the different genders, one of these being kindness, in which women scored significantly higher (Karris & Craighead, 2012). The VIA character strengths comprise 24 strengths, which were formulated by positive psychologists, Peterson and Seligman (2004), and are discussed in greater detail in 6.6 below.

In conclusion, kindness, like gratitude, can be considered as an important signature strength in the quest for greater levels of well-being (Otake et al., 2006). Kindness is a strength that encourages relatedness between people, fosters greater levels of self-confidence, develops altruistic traits, inspires gratitude and appreciation of others and in so doing significantly increases well-being.

In the present study, participants were asked to pay attention to foster an awareness regarding acts of kindness in their daily lives to actively perform one act of kindness toward someone else each day of the week to follow. Next, the savouring intervention will be discussed.

6.4 Savouring Intervention

Savouring is the tendency to concentrate on and relish past, present and prospective positive events (Bryant, 1989). Bryant (2003) further elaborated on this definition to include the notion that each individual varies in the trait of savouring and as such exhibits differing degrees of control over the extent to which they choose to generate, intensify or prolong enjoyment. Savouring is one of the methods we can use to increase positive emotion in the present, thereby creating an upward spiralling of positivity and a resultant move toward levels of increased flourishing (Guse, 2014). Bryant (2003) identified three possible elements of savouring, namely savouring through anticipation (i.e. looking forward to an event thereby

creating positive affect in the present), savouring the moment (i.e. using specific thoughts and behaviours to prolong positive feelings), and savouring through reminiscing (i.e. recalling a past positive event in an attempt to rekindle and prolong the positive feeling associated with the event).

Research on how to cope with negative experiences and mental illness are abundant, while empirical studies related to enhancing positive experiences, such as the role of savouring, which facilitates healthy mental states, is limited (Jose, Lim, & Bryant, 2012). However, several studies provide evidence to suggest that savouring interventions increase well-being (Carl, Fairholme, Gallagher, Thompson-Hollands, & Barlow, 2014; Hurley & Kwon, 2012, 2013; Jose et al., 2012; Quoidbach, Berry, Hansenne, & Mikolajczak, 2010). In their research to determine whether the process of savouring increases happiness, Jose et al. (2012) differentiated savouring as a trait and savouring as a response, and made a distinction between savouring responses that intensify (amplify) positive emotions and those that dampen them. Their findings suggest that savouring the positive in daily life does boost positive affect. In terms of trait savouring Jose et al. (2012) confirmed that trait amplifying savouring resulted in higher levels of positive mood and both amplifying and dampening traits acted as moderators at a daily level. Furthermore, they found that people who habitually savour events are more likely, than those who do not, to maintain positive emotion even when distinct positive life events are absent. This finding reinforces Fredrickson's (2004) 'broaden and build' theory because it suggests that savouring serves to broaden and build positive emotion and develop personal and interpersonal resources.

In addition, individuals with a high capacity to savour or maintain their positive emotions displayed more adaptivity in terms of positive emotion regulation than those individuals with symptoms of anxiety and depression (Carl et al., 2014). Carl et al. (2014) recorded the emotional responses of 164 nonclinical undergraduate students who completed

14 daily assignments after measuring their baseline anxiety and depression levels. Results showed that higher baseline severity of anxiety and depression were associated with higher down-regulation of positive emotions while higher baseline measures of savouring beliefs were associated with greater levels of positive emotion or up-regulatory processes and were inversely associated with down-regulatory effectiveness. Therefore greater attentions to and awareness of positive emotion reactivity and regulatory processes, such as encouraging higher savouring beliefs, could improve recovery in therapy and enhance resilience (Carl et al., 2014).

Hurley and Kwon's (2012) preliminary study exploring the positive outcomes of savouring as an intervention among a sample of nonclinical undergraduates found that their intervention resulted in significant decreases in self-reported symptoms of depression and negative emotions, however, there was no change in levels of positive affect. These results are encouraging especially considering that the results may yield greater implication among a clinically depressed sample, although such inquiry deserves further replication and extension, particularly within the South African context.

However, not all savouring methods are created equal in the world of well-being. Different savouring methods were found to affect positive outcomes uniquely (Quoidbach et al., 2010.) Quoidbach et al. (2010) found that sharing stories of positive events was correlated with higher levels of life satisfaction, while savouring in the moment and through rumination resulted in higher levels of positive affect. This is in line with Lyubomirsky et al.'s (2005) theory on happiness-enhancing activities. Quoidbach et al. (2010) suggested using multiple savouring approaches in order to achieve lasting happiness.

The current study made use of savouring in the moment by mindfully contemplating certain positive experiences, and therefore according to empirical evidence, an increase in positive emotion in the present may be anticipated. Since well-being includes cultivating

positive emotion not only of the past or in the present, but also for the future, optimism interventions were included and are discussed next.

6.5 Optimism Intervention

Learned optimism is a cognitive-behavioural method used to change pessimistic thought patterns by disputing and restructuring negative modes of thought (Seligman, 1990). Seligman (2002) stated that by learning optimism, both children and adults can halve their incidence of depression and anxiety over a period of two years. Explanatory styles for interpreting the world are developed by the age of seven. People with an optimistic explanatory style view negative events as temporary, external and situation specific. In contrast, individuals with a pessimistic explanatory style attach permanence to negative events, viewing them as pervasive and caused by internal factors. Fostering optimistic explanatory styles increases positive emotion and increases resiliency in trauma (Seligman, 1990). Moreover, optimism has been linked not only to overall well-being but also to mental and physical health (Blackwell et al., 2013). Also, optimism activities are in line with hope theory, which utilizes methods that are associated with goal attainment such as imagining future goals with confidence that are within reach (Snyder, Rand, & Sigmon, 2005).

Optimistic thinking enhances positive emotion and may be practiced by implementing activities such as imagining a *best possible self* (Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011). Creating an image of a best possible future self has been said to be fundamental in motivation and self-regulation because it allows for the opportunity of gaining better clarity and insight into ones emotions, motives, priorities and values (Emmons, 1986). The notion of possible selves has been described as a unique, concrete depiction of goals that comprise the most cherished possible futures that a person could wish for (Markus & Nuriious, 1986; Allport 1961).

Several studies confirm that the exercise of imagining a *best possible self* increases positive emotions that are long-lasting (King, 2001; Layous, Nelson & Lyubomirsky, 2012; Peters, Flink, Boersma, & Linton, 2010; Peters, Meevissen, & Hanssen, 2013). Blackwell et al. (2013) proposed that being able to create vivid mental images of positive future events could promote optimistic thinking. King (2001), in particular, compared the act of writing about an imagined *best possible self* and writing about other topics, and reported that the former produced more positive affect than the latter while decreasing negative affect. In addition, participants were asked to write these narrative descriptions every day for four consecutive days for 20 minutes each time. The results showed significant increases in well-being at three week post-test and a decrease in illness at a five month follow up (Sheldon & Lyubomirsky, 2006). Other research has consistently confirmed the benefits of disclosive writing in terms of well-being, health and emotional adjustment (Frattaroli, 2006; Shim, Cappella, & Han, 2011).

In studies comparing gratitude interventions with *best possible self* interventions, the latter has been shown to be more effective in both life satisfaction as well as optimism (Sheldon & Lyubomirsky, 2006; Peters et al., 2013). In addition, participants indicated higher levels of identification and interest with the *best possible self* activity compared to the gratitude and control exercises, and this in itself was an indicator for whether or not participants were diligent in carrying out their exercises over the set weeks. Further, it was concluded in these studies that those who continued to perform the activities over the weeks showed stronger positive results in affect in the follow-up assessments (Sheldon & Lyubomirsky, 2006). Suldo et al. (2014) suggested, after their positive psychology intervention studies with a group of youths, that due to the cognitive complexity of some learned optimism interventions, the sample age and cognitive ability should be carefully considered. It follows that imagining a successful future can improve performance (Pham &

Taylor, 1999), better psychosocial adjustment and increase sustained positive affect (King, 2001). In the present study participants listened to a *best possible self* visualization and immediately after were asked to write down what they had visualized in as much detail as possible. Participants were asked to read their visualization every day during the week that followed and were encouraged to add any new information if needed. Optimism is one of the 24 strengths within positive psychology's VIA Classification of Strengths, which will be discussed next as part of the signature strengths intervention implemented in this present study.

6.6 Signature Strengths Intervention

Traditionally, it has been more widely accepted that weaknesses should be overcome than that strengths should be built upon (Linley & Harrington, 2006). This is true in a variety of contexts such as organizations, as illustrated by performance appraisals and pay rewards, which focus on correcting weaknesses to increase performance. Similarly in educational settings school reports and assessments serve to acknowledge areas of good performance but emphasize areas in need of improvement, thereby focusing on weaknesses (Linley & Harrington, 2006).

Historically, strengths were excluded from the personality vernacular on the basis that it was considered a value-laden construct and therefore fell within the scope of philosophers and ethicists rather than psychologists (Linley & Harrington, 2006). It was not until the advent of positive psychology (Seligman & Csikszentmihalyi, 2000) that a need for a greater theoretical understanding of strengths was identified (Linley & Harrington, 2006). This led to the development of the VIA Classification of Strengths which was formulated through research and the use of extensive literature studies in psychology, psychiatry, moral studies, religious works, youth development studies, philosophy, as well as vigorous brainstorming

(Peterson, & Seligman, 2004). Such strengths are referred to as *signature strengths* and differentiate between six virtues, containing 24 strengths in total: where virtues refer to core characteristics within an individual (Peterson, & Seligman, 2004), that are commonly valued by moral philosophers and bear evolutionary importance (Van Eeden & Wissing, 2008; Logan, Kilmer, & Marlatt, 2010), and strengths serve as methods for achieving these virtues and are less abstract psychological qualities (Van Eeden & Wissing, 2008).

The difference between strengths research prior to the influence of positive psychology and the VIA and research conducted following that influence, is that strengths are now being seen as more than just a construct and are understood as part of a much larger integrated picture of positive functioning in people (Linley & Harrington, 2006). Seligman (2002) suggested that by nurturing our strengths, we can reach unparalleled levels of happiness.

“I do not believe that you should devote overly-much effort to correcting weaknesses. Rather, I believe that the highest success in living and the deepest emotional satisfaction comes from building and using your signature strengths,”

(Seligman, 2002, p. 13).

Signature strengths are natural positive qualities replicated in thoughts, feelings, and behaviours that target valued outcomes and allow for optimal performance and functioning. Examples include the strengths of kindness and love that fall within the virtue of humanity; or gratitude, humour and hope that fall within the virtue of transcendence. Well-being is associated with signature strengths (Park & Peterson, 2008). Identifying strengths helps individuals direct their natural talents and abilities toward meaningful endeavours (Peterson & Seligman, 2004). Identifying and utilizing signature strengths is associated with greater autonomy, competence and confidence (Linley & Harrington, 2011), as well as enhanced levels of engagement and hope (Madden, Green, & Grant, 2011), elucidating Park and

Peterson (2008) suggestion that working on adolescents' signature strengths is in fact a necessity for their overall well-being and flourishing. Correspondingly, a study evaluating strengths-based programmes in primary school settings found that signature strengths could be considered a potential mental health and well-being prevention and promotion intervention (Madden et al., 2011). Several studies that encourage individuals to recognise and build on their strengths, learn new strengths, and recognise strengths in other people suggest that such interventions increase life satisfaction and levels of well-being among both adolescents and adults (Proctor, Tsukayama, Wood, Maltby, Eades & Linley, 2011; Seligman et al., 2005, 2009; Sin & Lyubomirsky, 2009).

In their school-based programme Proctor et al. (2011) found significantly higher levels of life satisfaction from baseline to post-test in experimental and control conditions among a group of adolescents aged between 12 and 14. Also, in the same study, results suggested that adolescents who received the intervention would experience higher levels of positive affect and self-esteem and lower levels of negative affect compared to the control group participants who did not participate in the intervention (Proctor et al., 2011). In addition, Proctor et al. (2011), suggest that implementing such a school-based programme as part of the school curriculum over an extended period of time may further determine any effect on well-being. As highlighted in the strengths of gratitude and kindness discussions above, gender differences influence signature strengths (Froh et al., 2009; Kashdan et al., 2009; Karris & Craighead, 2012; Otake et al., 2006). Karris and Craighead (2012) reported differences in 11 of the VIA signature strengths between the genders, with women scoring significantly higher in kindness, love, gratitude, forgiveness, appreciation of beauty and excellence, prudence, fairness, and leadership, while males were dominant in the strengths of creativity, bravery and self-regulation. One possible explanation for gender differences in signature strengths is the fact that a person's character develops throughout life, and as these

characters are nurtured in childhood they become more salient by young adulthood (Karris & Craighead, 2012). Park and Peterson's (2006) findings that signature strengths may increase with age support this hypothesis. In their study, significant gender differences were found among early adolescents where the girls scored higher on appreciation of beauty and excellence, kindness, fairness, and perspective (Park & Peterson, 2006). Therefore it would seem that age, maturation, and gender socialization may provide possible reasons for significant differences (Karris & Craighead, 2012; Park & Peterson, 2006).

The aspect of gender difference will be taken into consideration in the present study to determine whether gender plays a role in well-being scores. Although not explicitly part of this study, it needs to be considered in order to take into account its potential to serve as an extraneous variable. In the present study a summary sheet of the 24 VIA strengths was developed and from that each participant was asked to choose five strengths that they thought best suited them. They were then asked to choose one each day for the week to follow and actively practice that specific strength more vigorously.

6.7 Summary of Findings on Positive Psychology Interventions

Empirical findings indicate that increasing positive emotions in the present through meditation as well as employing gratitude, kindness, savouring, optimism, and signature strength interventions can significantly increase levels of well-being among early adolescence. Evidence also suggests that schools provide the ideal setting for such well-being initiatives in an attempt to not only increase well-being among adolescents but also to prevent and reduce symptoms of mental illness such as anxiety and depression (Seligman et al., 2009). Consistent with Seligman's (2002) theory on positive emotion, the present study incorporated activities to enhance positive emotions in the past through a gratitude intervention, in the present using a loving-kindness and a savouring intervention, as well as

for the future through identifying and practicing signature strengths and utilising an optimism intervention. Additionally, the present study was activity rich and some of the activities, such as increasing optimism, use complex skills that may necessitate lengthier time-periods than were allocated in this intervention (Suldo et al., 2014). As a preliminary study, the effect of these interventions on well-being will indeed be propitious to explore.

7. CONCLUDING SUMMARY

This chapter provided an overview on existing literature regarding different intervention activities within the field of positive psychology. The constructs of well-being, adolescence and in particular early adolescence, and positive education were conceptualised and discussed and empirical evidence was provided. In conclusion, a group of interventions in schools as discussed above, has the potential to provide an ideal platform for both increasing positive psychology's youth research base in South Africa, as well as for enhancing gratitude, positive emotions, optimism, signature strengths, and social connectedness, which are thought to increase well-being among early adolescents, while also alleviating pathologies such as anxiety and depression (Cortina et al., 2008; Huebner & Hills, 2011; Norrish & Vella-Brodrick, 2009). As such, the proposed activities constitute an appropriate set of tools to explore the effectiveness of this specific positive psychology intervention on psychosocial well-being among a group of adolescents in South Africa.

CHAPTER 3

RESEARCH METHODOLOGY AND DESIGN

1. INTRODUCTION

This chapter describes the method implemented in the present study to measure the effect of a positive psychology intervention on a group of adolescents. It includes a description of the research design, participants, aims, and psychometric properties of the measuring instruments used in the study. In addition the research question and description of the data analyses employed is presented.

2. RESEARCH DESIGN

A quantitative research methodology using a quasi-experimental design which included pre-test, post-test and follow-up measures was employed in the present study (Wilson & MacLean, 2011).

3. RESEARCH AIMS AND HYPOTHESIS

The main aim of this study was to determine the effect of a positive psychology intervention on the well-being of a group of early adolescents. The secondary aim of the study was to determine gender differences in well-being in relation to the intervention. The following four specific aims were set:

1. To compare levels of psychosocial well-being *within* the experimental and control groups before and after the intervention, as well as at follow-up (five weeks after the intervention).
2. To compare levels of psychosocial well-being *between* the experimental and control groups before and after the intervention, as well as at follow-up.
3. To compare levels of psychosocial well-being *within* the boys' and girls' groups before and after the intervention, as well as at follow-up.
4. To compare levels of psychosocial well-being *between* the boys' and girls' groups before and after the intervention, as well as at follow-up.

In essence, these four specific aims were developed in order to compare the level of well-being *within* and *between* the different groups to determine whether the positive psychology intervention had an effect on psychosocial well-being. In addition, *within* group comparisons help identify the point in time at which the effect occurred. *Within* group differences also indicate whether any significant effect was indeed the result of the intervention or extraneous variables by comparing the experimental and control groups at various points in time.

4. PARTICIPANTS

A systematic random sample was drawn for the experimental and control groups from a list of Grade 7 pupils from a boys' school and a girls' school, whose parents had consented to their being part of the study. The number of participants for this study was determined by comparing sample sizes in similar studies, for example, Suldo et al. (2014). In total 169 parental consent forms were distributed, and 97 replies were received with only two indicating that they did not want to participate in the study. The total sampling pool was 95

participants, made up of 46 boys and 49 girls, of whom 44 formed part of the experimental group while the remaining 51 formed part of the control group. No participants dropped out of the study, although there were instances of absenteeism from school during the course of the programme resulting in only 77 participants completing the post-test and 84 completing the follow-up test. Also, each of the total 95 participants in the sample was required to complete a demographic questionnaire. This information was recorded, a summary of which can be seen in Table 1 below. The purpose of making demographic distinction is to determine to what extent the sample population is representative of the general population. The present study was intended as a preliminary study to determine the effect of positive psychology interventions among early adolescents. Table 3.1 presents a summary of the demographics of the participants taking part in this study.

Table 3.1

Demographic Information of Participants (N = 95)

Variable	Experimental (n = 44)		Control (n = 51)	
	N	%	N	%
Age				
12	17	38.64	20	39.22
13	27	61.36	31	60.78
Gender				
Male	20	45.45	26	51.00
Female	24	54.55	25	49.00
Ethnicity				
Black	4	9.09	9	17.65
White	37	84.09	39	76.47
Indian	3	6.82	3	5.88
Home Language				
English	40	90.91	41	80.39
Afrikaans	2	4.55	3	5.88
Xhosa	1	2.27	3	5.88
Sesotho	0	0.00	2	3.93
Shona	0	0.00	1	1.96
Bengali / Punjabi	1	2.27	1	1.96

5. PROCEDURES

Quasi-experimental studies were used to evaluate whether the specific intervention had the intended effect on the participants of the study (Wilson & MacLean, 2011). This study included a pre-post design with a one month follow-up test. While the pre-post-follow up test design measures potential effects of the intervention by evaluating differences in the results at each test period, it does not prove that this difference would have occurred in the absence of the intervention. As such, it was necessary to employ both an experimental group and a control group to measure the true effects of the intervention.

The experimental group received the intervention and the control group received no intervention and also received no placebo. In this way it was possible to control for factors not related to the intervention which may have had an effect on the results e.g. the individual's maturation or change in circumstances over the intervention period, or the particular curricular period (e.g. prior to exams) within which the intervention was administered. Also, matching by gender was implemented, in order to compensate for possible differences in the experimental and control groups that may have been present at the outset due to the lack of randomised sampling.

Furthermore, the level of scholars' education (Grade 7) as well as the fact that the schools in the sample were English medium schools suggests that all participants were able to read and speak English. In addition, detailed instructions including examples were given to ensure that participants were able to respond to the questionnaire items independently.

5.1 Participant Recruitment Process

First, the University of Johannesburg's Faculty of Humanities Academic Ethics Committee was requested to provide ethical clearance and endorse the proposed research to be conducted with minors. Parents of Grade 7 scholars at the two participating schools

received a letter describing the research process with the option to return a signed letter of written consent. Scholars whose parents had awarded their consent were then informed of the research process and asked to sign a letter of assent if they wished to be part of the research programme. The 95 scholars with both consent and assent were then asked to complete a set of questionnaires.

5.2 Participant Allocation and Retention

The participants from each school were randomly assigned to either an intervention group or a control group. Therefore, four groups were formed, an intervention and control group from the girls' school and an intervention and control group from the boys' school. The intervention was replicated across both schools over four consecutive weeks. Each session was half-an-hour long in accordance with one school period. The intervention programme took the place of their normal Life Orientation lessons. The control group received no interventions during the course of the programme, but they were offered an opportunity to receive the intervention on completion of the final follow-up assessments.

5.3 Employment of the Intervention

Four half-hour weekly sessions were scheduled, each including a five minute loving kindness meditation as well as the intervention for that specific week, as explained below.

5.3.1 Weekly: Increasing positive emotion in the present

A five minute pre-recorded loving kindness meditation was practiced weekly during the session. In addition, five minutes was spent discussing, sharing and reflecting on the previous week's homework during session 2-4.

5.3.2 Week 1: Gratitude enhancing activities

Following a discussion about what gratitude means and its benefits, scholars wrote a gratitude letter during the session with instructions to hand deliver (if possible) the letter within the course of the week. Scholars were also instructed to record three-good-things that they felt grateful for once a week for the duration of the intervention. Studies by Lyubomirsky and Layous (2013) show that gratitude activities performed once a week as opposed to daily are optimally effective.

5.3.3 Week 2: Creating positive emotion in the present via savouring and kindness activities

Participants were guided into a visualization taking them back into their toddler years. A plate containing various items including a strawberry, a slice of lemon, a block of chocolate, a flower, a crystal gemstone and a slice of cucumber was placed in front of each participant during the visualization when their eyes were closed. On opening their eyes scholars were guided into an exploration of each item, savouring its taste, texture, patterns and colours as if experiencing these items for the first time. A discussion on savouring followed. Then the strength of kindness was also discussed. For homework participants were asked to purposefully savour as much as possible during the week that followed. In addition, participants were asked to deliberately initiate one act of kindness each day during the following week.

5.3.4 Week 3: Signature strengths intervention

The twenty-four signature strengths of the Values In Action (VIA) (Peterson & Seligman, 2004) were introduced. Participants were instructed to select five which they

thought best described them. As homework, they were required to select one of the five strengths to practice with consciousness and awareness each day of the week to follow.

5.3.5 Week 4: Optimism intervention

Following a discussion about the meaning and benefits of optimism, participants were taken through a pre-recorded *best possible self* visualization. They were then instructed to write down and / or draw as much detail of the *best possible self* they had envisioned. For homework they were instructed to read through their *best possible self* page each night and were encouraged to create a vision board at home to increase the effect of the activity.

5.4 Post-Intervention and Follow-up Assessments

One week after the final intervention activity, participants from both the experimental and control groups were asked to complete the well-being measures, and the anxiety and depression measures again. This process was repeated once more at a one-month follow-up.

6. MEASURING INSTRUMENTS

6.1 The Mental Health Continuum Short-Form (MHC-SF - Adolescent) (Keyes, 2009)

The Mental Health Continuum Short-Form (MHC-SF) is derived from the Long-form (MHC-LF) but differentiated by fewer items. Fourteen of the most prototypical items were selected from the 40 MHC-LF's item scales to represent each facet of well-being's construct definitions, namely emotional, psychological and social well-being. The measure of emotional well-being (positive feelings) is constituted by three items measuring happiness, interest in life and satisfaction. In addition, six items measure psychological well-being

(positive functioning) according to Ryff's (1989) six dimensional model, and a further five items were selected from the original 40 to measure social well-being (community life) according to Keyes' (1998) model. These three core components of the MCH-SF allow for hedonic and eudaimonic well-being to be measured separately.

6.1.1 Nature and administration

The MHC-SF consists of 14 items divided into three clusters representing the hedonic and eudaimonic components of well-being. Cluster one consists of items 1-3 representing emotional well-being, which is related to hedonia. Cluster two consists of items 4-8 and represents social well-being, while cluster 3 (items 9-14) represent psychological well-being. Both social well-being and psychological well-being are related to eudaimonia. The measure uses a six-point Likert-scale where zero indicates *never* and 5 indicates *everyday* (Keyes, 2009). The scale was designed to measure the frequency of positive mental health symptoms in respondents, providing clear assessment standards comparable with that used in the DSM for the assessment and diagnosis of major depressive episode. A positive mental health diagnosis of *flourishing* can be made if an individual scores high ('every day' or 'almost every day') on at least one hedonic item in cluster one and six eudaimonic items (cluster 2 and 3) during the past month. Low scores ('never' or 'once or twice') on at least one hedonic measure and six eudaimonic measures indicates a diagnosis of *languishing* mental health. Responses that do not fall within either the flourishing or languishing category are diagnosed as *moderate* mental health.

6.1.2 Reliability and consistency

The MHC-SF's three factor structure represents both adults and adolescents between

the ages of 12 and 18 in South Africa (Keyes, Wissing, Potgieter, Temane, Kruger, & van Rooy, 2008). In addition, the MHC-SF has shown acceptable internal consistency ($>.80$) and discriminant validity in South Africa, and recent studies have shown moderate test-retest reliability as well as convergent validity demonstrated by the high correlation of the subscales with related aspects of well-being and functioning (Lamers, Westerhof, Bohlmeijer, ten Klooster, & Keyes, 2011). Finally, a Cronbach's alpha of 0.94 was found for total well-being in this study therefore showing good internal consistency.

6.2 Revised Children's Anxiety and Depression Scale (RCADS) – Short Version (Ebusutai et al., 2012)

The Revised Children's Anxiety and Depression Scale (RCADS) short version is derived from the longer version. The 47-item RCADS measure is a self-report questionnaire used to assess anxiety and depression in youth. The five subscales correspond with the DSM-IV's symptoms of separation disorder (SAD), social phobia (SP), generalized anxiety disorder (GAD), panic disorder (PD), obsessive-compulsive disorder (OCD), and major depressive disorder (MDD), and sum up to yield scores of total anxiety and total depression.

The RCADS was first reduced to 25-items by Muris, Meesters, and Schouten (2002), using standard factor analysis in order to remove conceptually inconsistent items (known as the RCADS-25). Later, in an attempt to remove redundant items and in keeping with the aim of increasing efficiency by reducing client burden, administration time, and transportability, Ebusutai et al. (2012) comprised a new shortened measure using the Schmid-Leiman exploratory bi-factor analytic method and a cross-sample validation strategy as an indicator of which items to include for greater generalizability (known as the RCADS short version). The decision to make use of the RCADS short version (RCADS-SV) in this study was based on the intended purpose to determine general anxiety and depression. If the purpose was to

obtain information pertaining to the specific anxiety subscales, then the original version or the RCADS-25 would have been more suitable. Time and increased efficiency were also considered factors.

6.2.1 Nature and administration

The RCADS-25 (Muris et al., 2002) differs from the RCADS-SV (Ebusutai et al., 2012) in that the latter retained the 10-items from the total depression scale and reduced the original 37 total anxiety items to 15-items covering all the anxiety subscales of the original measure. These include SAD, SP, GAD, PD, OCD, MDD. In keeping the original 10-items from the Total Depression Scale, findings suggested that the scale's alpha reliability fell within acceptable estimates (Ebusutai et al., 2012). Therefore the study supported the notion that too few items per scale can reduce reliability to unacceptable levels (Ebesutani et al., 2012), as was evidenced in the Muris et al. (2002) RCADS-25.

This measure requires youth to indicate how often items, which are rated on a 4-point Likert-scale from 0 (never) to 3 (always), apply to them. Scoring can be done manually or using an automated scoring procedure. Items are assigned numerical values from 0 – 3, where 0 = never, 1= sometimes, 2 = often, and 3 = always. Numerical values for each item are assigned to the corresponding anxiety or depression scale and raw scores are then converted to T-scores which are standardized according to grade level and gender. T-scores of 65 or higher indicate borderline clinical threshold, while T-scores of 70 or higher demonstrate anxiety and depression levels above the clinical threshold. Finally, the RCADS is available in English (US), Spanish (US), Chinese, Dutch and Danish, however, norms and scoring are based on the English version only (Weiss & Chorpita, 2011; Ebusutai et al., 2012).

6.2.2 *Reliability and consistency*

The RCADS-SV retained the 10 items from the Depression Total scale of the original version. These were associated with scores of acceptable reliability ($\alpha = .80$ and $.79$ respectively) in Ebusutai et al.'s (2012) school based samples. This result contrasted sharply with that of Muris et al.'s (2002) shortened version where the Depression Total scale evidenced unacceptable reliability scores ($\alpha = .63$). In addition the 15-item Anxiety Total scale, where items were evenly extracted from the five anxiety subscales in the original RCADS, showed significant equivalence with DSM-oriented anxiety diagnostic subscales. Thus the RCADS-SV has demonstrated efficiency, scope and reliability in terms of scale scores, rendering it a potentially suitable measure for wide-scale screenings for the assessment of overall levels of anxiety and depression in individuals (Ebusutai et al., 2012). In the current study a Cronbach's alpha of 0.88 was found indicating good internal consistency.

7. DATA ANALYSIS

Descriptive statistics were used to summarize sample data. Inferential statistics were used to draw conclusions about the effect of the positive psychological interventions (Wilson & MacLean, 2011). Tests for parametric or non-parametric statistics were conducted, including normality reports, and are described in chapter four.

Mann-Whitney-U Tests were used to compare differences in the measured variables of the intervention between the control and experimental groups. Additionally, Mann-Whitney U tests were further used to explore the efficacy of the positive psychology intervention as measured by changes in well-being scores as well as differences in well-being

between the boy participants and the girl participants, in order to determine gender differences in well-being scores. Finally, Friedman Tests were used to explore differences in levels of well-being from pre- to post- and follow-up measurements. Where relevant, Wilcoxon Signed Rank Tests were conducted as post hoc tests to determine where differences occurred. The Statistical Packages for the Social Sciences (SPSS, version 22) were used to analyse the data (Wilson & MacLean, 2011).

8. ETHICS

Permission to conduct the study was sought from the Faculty of Humanities Ethics Committee. Schools were approached to request their participation. Permission and informed consent and assent were obtained from the parents and the participants respectively. The control groups were offered intervention following final assessment. Confidentiality was upheld throughout the study. The research did not harm or deceive the participants in any manner, and participants were free to withdraw from the study without prejudice, recrimination or consequence (Aronson, Wilson, & Akert, 2005; Neuman, 2003). The school will receive feedback regarding the overall results, while participant anonymity will be maintained. Finally, all instruments were administered in accordance with the guidelines for administration as set out by the Health Professions Council of South Africa (HPSCA).

9. SUMMARY

This chapter discussed the research design and documented the aims of the study. The participants and the research procedure were described and the measuring instruments were discussed. The following chapter will present the results of the data analysed.

CHAPTER 4

RESULTS

1. INTRODUCTION

The main aim of the study was to explore the effect of a positive psychology intervention on a group of adolescents. In addition, a secondary aim of the study was to determine gender differences in well-being between the male and female participants after the intervention in order to determine whether there were gender differences in well-being scores. The results of this study will be presented in this chapter.

2 DESCRIPTIVE STATISTICS

Descriptive statistics describes the main attributes of a sample, tendencies of the variables and their underlying assumptions, and addresses specific research questions (Pallant, 2010). Table 4.1 summarizes the descriptive statistics for the variables of total well-being as well as total anxiety and depression measures at pre, post and follow-up assessment times. The skewness and kurtosis values of the RCADS-SV fitted within an appropriate range (i.e., below the absolute value of 2), indicating the normal distribution of scores across all variables related to the RCADS-SV. The scores of the MHC-SF, however, showed values indicating negative skewness (-0.63 to -1.75) and mesokurtic kurtosis in the experimental group (+2.34 to +3.24) and platykurtic kurtosis in the control group (-0.07 to -0.51). These values represent curves that are relatively peaked (platykurtic) and have too many extreme cases (platykurtic), violating the assumptions of normality regarding a normal distribution curve. Therefore non-parametric statistics have been implemented in this study.

Table 4.1

Means, Standard Deviations, Skewness, Kurtosis, and Normality Distribution of All Measures for the Experimental (n = 44) and Control (n = 51) Groups

Scale	Group	M	SD	Skewness	Kurtosis	Shapiro-Wilk
						<i>p</i>
MHC-SF	Pre-Exp.	51.27	11.26	-1.62	3.16	0.00
	Pre-Cont.	46.29	14.66	-0.63	-0.51	0.01
	Post-Exp.	50.67	14.41	-1.75	3.24	0.00
	Post-Cont.	43.93	19.33	-0.94	0.05	0.00
	F-Up-Exp.	50.19	14.25	-1.42	2.39	0.00
	F-Up-Cont.	44.23	17.94	-0.89	-0.07	0.00
RCADS-SV	Pre-Exp.	50.80	9.16	0.58	0.04	0.23
	Pre-Cont.	52.80	11.33	0.97	0.34	0.00
	Post-Exp.	47.47	10.61	1.00	0.82	0.02
	Post-Cont.	49.41	12.81	0.76	0.15	0.04
	F-Up-Exp.	47.35	10.73	0.87	0.45	0.02
	F-Up-Cont.	51.46	11.44	0.66	0.54	0.11

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version; Pre-Exp. = Pre-Experimental Group; Post-Exp. = Post-Experimental Group; F-Up-Exp. = Follow-Up-Experimental Group; Pre-Cont. = Pre-Control Group; Post-Cont. = Post-Control Group; F-Up-Cont. = Follow-Up-Control Group

2.1 Reliability Indices of the Measuring Instruments

Reliability refers to the overall consistency of a measure (Moerdyk, 2009). One of the principal aspects of a scale's reliability is its internal consistency. Internal consistency refers to the degree to which the items on a scale measure the same underlying construct. Cronbach's alpha coefficient is one of the most commonly used indicators of internal

consistency. An alpha score above 0.7 is considered acceptable (Pallant, 2010). Consistent with research on adolescents and adults in the US, Netherlands and South Africa that showed excellent internal consistency ($>.80$) (Keyes, 2005b, 2006; Keyes et al., 2008; Lamers et al., 2011; Westerhof & Keyes, 2009), the current study's Cronbach alpha for the MHC-SF (adolescent) was 0.94. In addition, the Cronbach alpha value for the RCADS-SV was also good (0.88). This is in line with other studies, for example one that measured negative thoughts among a group of non-clinical children, (Broeren, Muris, Bouwmeester, van der Heijden, & Abee, 2011) where RCADS-SV scores showed acceptable to good internal consistency (Cronbach alphas of between 0.71 and 0.83). Reliability for the MHC-SF (Adolescent) and the RCADS-SC scales are shown in Table 4.2 below, and both reflect good internal consistency.



Table 4.2

Cronbach's Alpha Reliability Coefficients

Scale	Number of items	Cronbach alpha
MHC-SF	14	0.94
RCADS-SV	25	0.88

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS = Revised Child Anxiety and Depression Scale – Short Version

3. INFERENCE STATISTICS

Non-parametric statistics were used because the data did not meet the stringent assumptions of parametric techniques. The Friedman Test, which is similar to the parametric repeated measures ANOVA, was used to measure differences within the same groups at three different time intervals by comparing the mean ranks of the three sets of scores in a test. Where significant differences were found, post hoc test were conducted using the Wilcoxon Signed

Rank Test (using a Bonferroni adjusted alpha value) to determine where the change occurred and to control for Type 1 error (Pallant, 2010). In the present study the Friedman Test was used to measure the differences in well-being (MHC-SF (adolescent)), and anxiety and depression (RCADS-SV) within the same sample of participants (i.e., experimental/control and boys/girls) at three different points in time (pre-intervention, post-intervention and follow-up). The Mann-Whitney U Test analysed differences between two independent groups where the mean rank and median values described the direction of the difference (Pallant, 2010). There were two sets of independent groups (i.e., the experimental and the control groups, and the girls and boys groups). The results below are categorized into two sections according to the independent groups, viz. experimental vs. control groups and boys' vs. girls' groups, and comprise the four main aims of the study, which include:

1. To compare levels of psychosocial well-being *within* the experimental and control groups before and after the intervention, as well as at follow-up (five weeks after the intervention).
2. To compare levels of psychosocial well-being *between* the experimental and control groups before and after the intervention, as well as at follow-up.
3. To compare levels of psychosocial well-being *within* the boys' and girls' groups before and after the intervention, as well as at follow-up.
4. To compare levels of psychosocial well-being *between* the boys' and girls' groups before and after the intervention, as well as at follow-up.

Figure 4.1 below serves as a map for navigation through these complex analyses.



Figure 4.1

Overview of Analysis of Results

The examination of data pertaining to the experimental and control groups follows.

3.1 Comparison of Pre-Test Scores Between the Experimental and Control Groups

In order to determine whether the two groups could accurately be compared with one another it was necessary to determine whether or not there were any significant differences between the experimental and control groups before the intervention occurred.

3.1.1 Significance of differences in well-being between the experimental and control groups before the intervention

There was no statistically significant difference in well-being between the experimental group and control group before the intervention as indicated by the p values ($p = 0.11$ and $p = 0.52$ respectively) in Table 4.3.

Table 4.3

Significance of Differences in Well-being Between the Experimental Group and the Control Group Before Intervention

Scale	Experimental Group			Control Group			Z	p
	n	Median	Mean	n	Median	Mean		
			Rank			Rank		
MHC-SF	44	54.00	52.91	51	50.00	43.76	-1.61	0.11
RCADS-SV	95	49.50	46.05	95	50.00	49.69	-0.64	0.52

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version.

3.2 Significance of Differences in Well-being Within the Experimental Group and Control Group

Within-group differences were determined using the Friedman Test for non-parametric statistics. The results of the Friedman Test within each group are reflected in Table 4.4 and Table 4.5 below. Significant results were further explored within their relevant aims in the sections, which follow below.

3.2.1 Significance of differences in well-being within the experimental group at pre, post and follow-up (Friedman Test)

The results of the Friedman Test indicated that there were no statistically significant differences in the MHC-SF scores within the experimental group, however, there was a statistically significant difference in the RCADS-SV scores across the three time points (pre-intervention, post-intervention, and one-month follow-up) $\chi^2 (2, n = 35) = 6.67, p < 0.05$. Inspection of the median values showed at which points in time a decrease in anxiety and depression was indicated. From table 4.4 below it can be determined that there was a decrease in anxiety and depression levels at both post-test and follow-up test (pre-test: $Md =$

49; post-test: $Md = 46$; and a further decrease at follow-up: $Md = 44$). Table 4.4 below shows the Friedman Test results. Post hoc test (Wilcoxon Signed Rank Test with Bonferroni adjustments) results are shown in Tables 4.6 and Table 4.8 in the sections below.

Table 4.4

Significance of Differences in Well-being Within the Experimental Group From Pre-Intervention, to Post and Follow-up (Friedman Test)

Scale	<i>n</i>	Pre-Test		Post-Test		Follow-up-Test		<i>p</i>
		Median	Mean Rank	Median	Mean Rank	Median	Mean Rank	
MHC-SF	35	54.00	1.99	55.00	1.93	53.00	2.09	0.79
RCADS-SV	35	49.00	2.33	46.00	1.91	44.00	1.76	0.04

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version.

3.2.2 Significance of differences in well-being within the control group at pre, post and follow-up (Friedman Test)

The results of the Friedman Test indicated that there was no statistically significant difference in well-being scores across the three time points (pre-intervention, post-intervention, follow-up) within the control group in either the MHC-SF or RCADS-SV, as shown in Table 4.5. Therefore no post hoc tests were necessary.

Table 4.5

Significance of Differences in Well-being Within the Control Group From Pre-Intervention to Post and Follow-up (Friedman Test)

Scale	<i>n</i>	Pre-Test		Post-Test		Follow-Up Test		<i>p</i>
		Median	Mean Rank	Median	Mean Rank	Median	Mean Rank	
MHC-SF	39	50.00	1.99	49.00	2.09	50.00	1.92	0.75
RCADS-SV	35	50.00	2.29	48.00	1.79	49.00	1.93	0.07

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version

3.3 Significance of Differences in Well-being One Week After the Intervention

A post-test was conducted one week after the completion of the intervention in both the experimental and control groups. The results of these post-tests analysis using the Friedman Test showed statistically significant results in the experiment group. Post hoc tests were necessary to adjust for multiple comparisons and Type 1 error as shown in table 4.4. The post hoc results are discussed below in section 3.3.1 and 3.4.1 and shown in Table 4.6 and Table 4.8 respectively.

3.3.1 Significance of differences in well-being within the experimental group one week after the intervention

The results of The Wilcoxon Signed Rank post hoc test (with Bonferroni adjusted alpha) on the statistically significant RCADS-SV result determined by the Friedman Test as reported in table 4.4 of section 3.2.1 above are shown below. The RCADS-SV score indicated a decrease in anxiety and depression within the experimental group one week after the intervention as indicated by the significant *p* values ($p = 0.04^a$) and a decrease in the median value from $md = 49.50$ in pre-test to $md = 45.50$ in post-test. These post hoc results are shown in Table 4.6 below.

Table 4.6

Significance of Differences in Well-being Within the Experimental Group Before and After the Intervention (Wilcoxon Signed Rank Test)

Scale	Pre-Test			Post-Test			<i>p</i>
	<i>n</i>	Median	Mean Rank	<i>n</i>	Median	Mean Rank	
MHC-SF	36	54.00	13.71	36	55.00	19.67	0.72
RCADS-SV	36	49.50	12.46	36	45.50	19.60	0.04 ^a

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version. . *a* = Adjustment for multiple comparisons: Bonferroni

3.3.2 Significance of differences in well-being within the control group one week after the intervention

The results of the Friedman Test indicated that there was no statistically significant difference in well-being scores across the three time points (pre-intervention, post-intervention, three-month follow-up) within the control group. Therefore, no post hoc tests were necessary. (Refer to Table 4.5 above.)

3.3.3 Significance of differences in well-being between the experimental and control groups one week after the intervention

The Mann-Whitney-U test used to analyse differences between the experimental group and the control group demonstrated no statistically significant difference in well-being between the experimental group and control group one week after the intervention as indicated by the *p* values (*p* = 0.16 and *p* = 0.61 respectively) in Table 4.7.

Table 4.7

Significance of Differences in Well-being Between the Experimental and Control Groups One Week After the Intervention

Scale	Experimental Group			Control Group			Z	p
	n	Median	Mean Rank	n	Median	Mean Rank		
MHC-SF	36	55.00	44.50	44	48.00	37.23	-1.394	0.16
RCADS-SV	36	45.50	37.60	41	45.00	40.23	-0.516	0.61

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version.

3.3.4 Summary of results one week after the intervention

The pre-test analysis indicated that there were no statistically significant difference between the experimental group and the control group before the intervention began. This was favourable for comparing the two groups accurately. A Friedman Test indicated that there were statistically significant differences within the experimental group at the three time periods (pre-intervention, post-intervention, follow-up), however, no differences were found within the control group. Post hoc tests (Wilcoxon Signed Rank Test) on post-test data showed a decrease in anxiety and depression scores.

Interestingly, these differences were noted in the pathology scores (RCADS-SV) but not in the well-being (MHC-SF) measures. Furthermore, the significant differences were noted within each independent group at the different time periods but no differences were noted between the experimental group and the control group, indicating that the two groups did not differ in terms of their well-being. These results indicate that the intervention was effective in terms of decreasing pathology, but that psychosocial well-being remained unchanged.

3.4 Significance of Differences in Well-being Five Weeks After the Intervention

A follow-up test was conducted one month after the completion of the intervention in both the experimental and control groups. The results including follow-up test data are discussed below.

3.4.1 Significance of differences in well-being within the experimental group five weeks after the intervention

The Friedman Test (Table 4.4) showed no statistically significant difference in well-being measures as scored by the MHC-SF within the experimental group five weeks after the intervention ($p = 1.00$), however, there was a significant difference in the pathology measures of the RCADS-SV scores compared with the pre-test as indicated by the post hoc test p value ($p = 0.01^a$) in Table 4.8 below.

Table 4.8

Significance of Differences in Well-being Within the Experimental Group at Five-Week Follow-Up (Wilcoxon Signed Rank Test)

Scale	Pre-Test			Follow-up-Test			p
	n	Median	Mean Rank	n	Median	Mean Rank	
MHC-SF	43	54.00	18.63	43	53.00	22.38	0.56
RCADS-SV	43	49.50	19.15	43	46.00	20.29	0.01 ^a

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version; a = Adjustment for multiple comparisons: Bonferroni.

3.4.2 Significance of differences in well-being within the control group five weeks after the intervention

The Friedman Test in section 3.2.2 above indicated that there was no statistically significant difference in well-being within the control group at the three time periods (pre-intervention, post-intervention and follow-up) five weeks after the intervention, therefore no post hoc tests were necessary.

3.4.3 Significance of differences in well-being between the experimental and control groups five weeks after the intervention

A Mann-Whitney U Test indicated a decrease in anxiety and depression for the experimental group (almost significantly, $p = 0.056$) in comparison to the control group five weeks after the intervention ($Mdn = 46.00$), $U = 668.0$, $p = 0.56$, $r = 0.21$. However, no statistically significant difference was indicated in well-being ($p = 0.17$), shown in Table 4.9.

Table 4.9
Significance of Differences in Well-being Between the Experimental and Control Groups Five Weeks After the Intervention

Scale	Experimental Group			Control Group			Z	p
	n	Median	Mean Rank	n	Median	Mean Rank		
MHC-SF	43	53.00	47.17	43	50.00	39.83	-1.365	0.17
RCADS-SV	43	46.00	37.53	41	49.00	47.71	-1.913	0.06

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version.

3.4.4 Summary of results five week after the intervention

Within group comparisons indicated a decrease in pathology measures from pre-test ($md = 49.50$) to follow-up ($md = 46.00$) after conducting Wilcoxon Signed Rank post hoc tests on the Friedman results. Interestingly, there was a slight increase in pathology from post-test ($md = 45.50$) to follow-up ($md = 46.00$), however, the overall decrease in pathology measures from pre-test to follow-up remained significant.

The Mann-Whitney-U test indicated an almost significant difference between the experimental group and the control group in terms of pathology five weeks after the intervention. Consistent with the results after the post-test (section 3.4.3), these results indicate that the intervention was effective in terms of decreasing pathology, however, psychosocial well-being remained unchanged.

3.5 Comparison of Pre-Test Scores Between Boys and Girls in the Experimental Groups

As with the experimental and control group analysis discussed above, it was necessary to determine whether there were any significant differences between the boys and girls groups at the start of the intervention in order to ensure that they could be accurately compared.

3.5.1 Significance of differences in well-being between boys and girls before the intervention

A Mann-Whitney-U test indicated that there were no statistically significant differences in well-being between the boys' group and girls' group before the intervention as signified by the p values ($p = 0.28$ and $p = 0.52$ respectively) in Table 4.10.

Table 4.10*Significance of Differences in Well-being Between Boys and Girls Before the Intervention*

Scale	Girls Group			Boys Group			Z	p
	n	Median	Mean Rank	n	Median	Mean Rank		
MHC-SF	24	51.00	20.60	20	53.00	24.78	-1.074	0.28
RCADS-SV	24	50.00	21.35	20	49.50	23.88	-0.649	0.52

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version.

3.6 Significance of Differences in Well-being Within the Boys' and the Girls' Groups

Within group differences were measured using the Friedman Test. No significant differences were found within the boys' or girls' groups, therefore no post hoc tests were necessary. The results of the Friedman Test within each group are shown in Table 4.11 and Table 4.12 below.

3.6.1 Significance of differences in well-being within the boys' group at pre, post and follow-up tests (Friedman Test)

The results of the Friedman Test indicated that there was no statistically significant difference in well-being among the boys' group across the three time points (pre-test, post-test, and follow-up) (MHC-SF: $\chi^2(2, n = 12) = 4.22, p > 0.05$; RCADS-SV: $\chi^2(2, n = 12) = 2.24, p > 0.05$). Table 4.11 below shows the Friedman Test results.

Table 4.11

Significance of Differences in Well-being Within the Boys' Group at Pre, Post and Follow-up Tests

Scale	Pre-Test			Post Test		Follow-up Test		<i>p</i>
	<i>n</i>	Median	Mean	Median	Mean	Median	Mean	
			Rank		Rank		Rank	
MHC-SF	12	59.00	1.88	55.00	1.67	58.20	2.46	0.12
RCADS-SV	12	51.50	2.33	45.50	2.04	42.50	1.63	0.20

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version.

3.6.2 Significance of differences in well-being within the girls' group at pre, post and follow-up tests (Friedman Test)

The results of the Friedman Test indicated that there was no statistically significant difference in well-being scores across the three time points (pre-intervention, post-intervention, three-month follow-up) (MHC-SF: $\chi^2 (2, n = 23) = 0.43, p > 0.05$; RCADS-SV: $\chi^2 (2, n = 23) = 4.07, p > 0.05$) within the girls' group as shown in Table 5.12. Therefore no post hoc tests were necessary.

Table 4.12

Significance of Differences in Well-being Within the Girls' Group at Pre, Post and Follow-up Test

Scale	Pre-Test			Post-Test		Follow-up-Test		<i>p</i>
	<i>n</i>	Median	Mean	Median	Mean	Median	Mean	
			Rank		Rank		Rank	
MHC-SF	39	50.00	2.04	54.00	2.07	49.00	1.89	0.81
RCADS-SV	35	49.00	2.33	46.00	1.85	46.00	1.83	0.13

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version.

3.7 Significance of Gender Differences in Well-being One Week After the Intervention

A post-test was conducted one week after the completion of the intervention in both the boys' and girls' groups. Data was analysed to determine whether there was a difference in scores between boys and girls at this point. The results follow.

3.7.1 Significance of differences in well-being within the boys' group one week after the intervention

There was no statistically significant difference in well-being within the boys' group one week after the intervention as indicated by Friedman Test in section 3.6.1 above.

3.7.2 Significance of differences in well-being within the girls' group one week after the intervention

There was no statistically significant difference in well-being within the girls' group one week after the intervention as indicated by Friedman Test in section 3.6.2 above.

3.7.3 Significance of gender differences in well-being between the boys' and girls' groups one week after the intervention

There was no statistically significant difference in well-being between the boys' group and the girls' group one week after the intervention as indicated by the p values ($p = 0.24$ and $p = 0.88$ respectively) in Table 4.13.

Table 4.13

Significance of Differences in Well-being Between the Boys and Girls One Week After the Intervention

Scale	Girls Group			Boys Group			Z	p
	n	Median	Mean Rank	n	Median	Mean Rank		
MHC-SF	24	50.50	17.04	12	54.00	21.42	-1.179	0.24
RCADS-SV	24	47.00	18.31	12	45.00	18.88	-0.151	0.88

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version.

3.7.4 Summary of gender differences one week after the intervention

There were no statistical differences between or within the boys' and the girls' groups one week after the intervention.

3.8 Significance of Gender Differences in Well-being Between Boys and Girls Five Weeks After the Intervention

The follow-up-test compared differences in scores between boys and girls five weeks after the intervention. The results are discussed below.

3.8.1 Significance of differences in well-being within the boys' group five weeks after the intervention

There was no statistically significant difference in well-being within the boys' group five weeks after the intervention as indicated by Friedman Test in section 3.6.1 above.

3.8.2 Significance of differences in well-being within the girls' group five weeks after the intervention

There was no statistically significant difference in well-being within the girls' group five weeks after the intervention as indicated by Friedman Test in section 3.6.2 above.

3.8.3 Significance of gender differences in well-being between the boys' and girls' groups five weeks after the intervention

There was no statistically significant difference in well-being between the boys' and girls' groups ($p = 0.17$ and $p = 0.99$ respectively) five weeks after the intervention as indicated in Table 4.14.

Table 4.14

Significance of Differences in Well-being Between the Boys and Girls Five Weeks After the Intervention

Scale	Girls Group			Boys Group			Z	p
	n	Median	Mean Rank	n	Median	Mean Rank		
MHC-SF	23	49.50	19.54	20	53.50	24.83	-1.38	0.17
RCADS-SV	23	49.00	21.98	20	46.00	22.03	-0.01	0.99

Note. MHC-SF = Mental Health Continuum – Short Form (Adolescent); RCADS-SV = Revised Child Anxiety and Depression Scale – Short Version.

3.8.4 Summary of gender differences five weeks after the intervention

There were no statistical differences within or between boys' and girls' groups five weeks after the intervention.

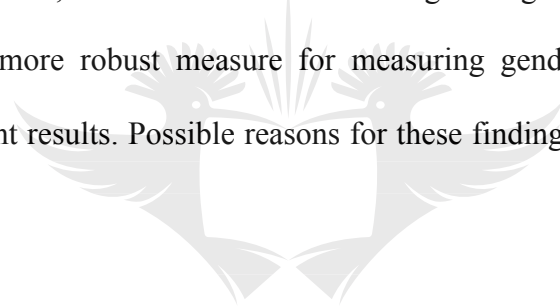
4. SUMMARY OF THE RESULTS

This chapter explored the results related to the main aims of the study, including the effect of a positive psychology intervention on a group of adolescent scholars, as well as the differences in well-being scores between girls and boys. This was achieved by analysing data at the pre-test, post-test and follow-up levels. Furthermore, Friedman tests were used to compare independent groups within the three time periods. Where significance of difference was found post hoc tests were conducted, specifically using the Wilcoxon Signed Rank Test (using adjusted Bonferroni alpha). The Mann-Whitney-U Test analysed differences between the groups (experimental vs. control, and boys vs. girls).

The results indicated that despite the fact that the positive psychology intervention was short (half an hour per week over four weeks), statistically significant differences in the levels of anxiety and depression were found in the experimental group one week after the intervention (post-test) and five weeks after the intervention (follow-up test) when compared to the pre-test levels. At the post-test evaluation the Friedman Test indicated a significant difference in well-being within the experimental group. A post hoc test was conducted using the Wilcoxon Signed Rank Test to regulate for multiple comparisons and to adjust for Type 1 error. A significant Bonferroni adjusted alpha value of $p = 0.04$ was obtained. In addition, comparing median scores of the Friedman Test at pre, post and follow-up tests indicated a steady decrease from $md = 49$ (pre-test); $md = 46$ (post-test); and $md = 44$ (follow-up). This decrease indicates a decline in the presence of anxiety and depression from pre-test to follow-up test. Comparing the mean ranks within the Friedman Test for the experimental group also suggested a decrease in anxiety and depression at each of the three time points ($Mrpre = 2.33$, $Mrpost = 1.91$, $MRFollow = 1.76$). However, by implementing the post hoc tests, results indicated a decline in anxiety and depression from the pre-test to the post-test ($md = 49.5 -$

$md = 45.5$ respectively) but then a slight increase from post-test to follow-up test again ($md = 45.5 - md = 46$ respectively). Nevertheless, the overall result suggests a statistically significant ($p = 0.01$) decrease in anxiety and depression from pre-test ($md = 49.5$) to follow-up-test ($md = 46.00$).

Interestingly, there was no change in well-being measured by the MHC-SF (adolescent). Possible reasons for this will be explored in the discussion chapter. Furthermore, no differences in well-being were found through analysis of gender data, suggesting that boys and girls did not differ in terms of their well-being scores in this study. It is noteworthy, however, that significant differences in this study were only demonstrated on the RCADS-SV measure, which is standardised for age and gender when converting raw scores to T-scores. A more robust measure for measuring gender differences may have revealed more significant results. Possible reasons for these findings will be examined in the following chapter.



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CHAPTER 5

DISCUSSION AND CONCLUSION

1. INTRODUCTION

The main aim of the study was to measure the effect of a positive psychology intervention on the psychosocial well-being of a group of South African adolescents. A secondary aim was to determine whether there were gender differences in well-being scores. Quantitative findings showed that the intervention had a positive effect on the adolescents' levels of psychopathology, in particular anxiety and depression, but that well-being scores remained unchanged. Furthermore, there were no differences in well-being scores between boys and girls. In addition the measures indicated that the two independent groups, namely the experimental group and control group as well as the boys' group and the girls' group, were comparable during pre-testing. Although no significant differences were found between either of the independent groups, within-group measures of pathology indicated a positive effect over time in the case of the experimental group. This chapter discusses the implications of these findings, which were presented in Chapter 4. First, possible explanations for these findings and how they may connect with previous literature will be examined. Thereafter, hypothetical and research implications of the study will be explored. Finally, limitations of the study will be considered and suggestions for future research will be made.

2. DISCUSSION OF RESULTS

The results discussed below have been categorized according to how they relate to the aims of the study and how they relate to previous theory and research.

2.1 Results in Relation to the Aims

The non-parametric equivalent model of independent t-tests and ANOVA's (analysis of variance) explained differences between and within both the experimental and control groups, and the boys' and girls' groups. These included the Mann-Whitney-U Test and the Friedman Test respectively. Where significant differences were found in the Friedman Test, a Wilcoxon Signed Rank Test was used to adjust for multiple comparisons and Type 1 error using Bonferonni.

Findings revealed that early adolescents who participated in the half-hourly once per week intervention sessions for four-weeks experienced significant decreases in levels of pathology, specifically anxiety and depression. However, no changes in levels of well-being were found. These results are discussed in more detail in relation to their specific aims below.

2.1.1 Comparison of differences in well-being within the experimental and control groups before and after the intervention, as well as at follow up

Within group comparisons indicated significant decreases in pathology, specifically anxiety and depression, in the experimental group one week after the intervention. The same comparison in the control group revealed no significant changes in the RCADS-SV scores indicating that the decrease in pathology in the experimental group was not due to extraneous variables. However, MHC-SF scores were not significant in either the experimental group or the control group indicating that psychosocial well-being levels remained unchanged one week after the intervention.

Moreover, a decrease in pathology scores (RCADS-SV) within the experimental group remained prevalent five weeks after the intervention at follow-up, while well-being scores remained unchanged. Although the level of pathology increased slightly from post-

test to follow-up test, overall levels of pathology decreased significantly from pre-test to follow-up.

2.1.2 Comparison of differences in well-being between the experimental and control groups before and after the intervention, as well as at follow-up

No significant differences were found *between* the experimental and control groups one week after the intervention indicating that although the decrease in pathology was significant within the experiment group after the intervention and not in the control group, the decrease was not great enough to show a significant difference between the two groups one week after the intervention. Furthermore, comparisons between the experimental and the control group five weeks after the intervention revealed almost significant differences ($p = 0.56$) between the groups in terms of pathology. This is not consistent with the between group results one week after the intervention and is therefore particularly promising because it indicates that the intervention may have had enduring and / or long-term effect on pathology.

2.1.3 Comparison of differences in well-being within the boys' and girls' groups before and after the intervention, as well as at follow-up

The secondary aim of the study was to determine whether there were gender differences in variable scores (MHC-SF and RCADS-SV) used in the comparative analyses of the well-being coefficient. No significant differences were found when comparing gender data within the boys' and girls' groups before or after the intervention, or at follow-up.

2.1.4 Comparison of differences in well-being between the boys' and girls' groups before and after the intervention, as well as at follow-up

No significant differences were found when comparing between the boys' and girls' groups before or after the intervention, or at follow-up. However, taking into consideration that only the pathology measure (RCADS-SV) demonstrated any significant differences in the results of the experimental / control group analysis, it is notable, in terms of the gender aim, that the pathology measure (RCADS-SV) adjusts raw scores to accommodate proven differences in age and gender. Analysis of differences in gender have reliably demonstrated that girls score higher than boys on all RCADS subscales, suggesting that their levels of anxiety and depression are higher (Chorpita, Moffitt, & Gray, 2005; De Ross, Gullone & Chorpita, 2002; Van Oort, Greaves-Lord, Verhulst, Ormel, & Huizink, 2009). This adjustment for gender differences in the RCADS-SV measure may therefore have been a contributor to the fact that no significant differences were found in well-being scores within or between the boys' and girls' group in this study.

2.2 Results in Relation to Previous Theory and Research

The results of the study provide support for the significant role that positive psychology interventions can play in decreasing pathology and in so doing create an upward spiral in overall well-being among young adolescents. Sin and Lyubomirsky's (2009) meta-analysis support the results of this study, with their findings that indicated that PPI's not only work but work well in effectively boosting well-being. However, Lyubomirsky and Layous (2013) add that several conditions exist for optimal effectiveness of positive activities. These include determining the dosage and variety of specific activities, both of which were taken into account in the present study. They also purport that older adults may find positive activities where they reflect more on their legacies beneficial, while adolescents may benefit more from visualizing a positive future. Moreover, they suggest that positive change can only

take place if participants engage in the process, are motivated to become happier and believe that their effort will produce results. The promising results of the present study support the notion of these conditions.

Although the main focus of the current study was the effect on well-being, the presence of psychopathology was also evaluated in order to detect any secondary effects related to the outcomes. In addition, it was necessary to measure psychopathology in keeping with the conceptualization of well-being within this study, which is based on Keyes' (2005) definition of complete mental health consisting not only of the presence of well-being (flourishing) but also including the absence of mental illness. In accordance with previous research, Keyes' (2005) theory that pathology and well-being are separate constructs is supported by the results of this study, in particular its finding of change in one but not the other, suggesting that they are not related.

However, unlike the majority of PPI intervention studies that include measures of well-being and pathology, the current study showed no significant improvement in well-being while revealing a significant improvement in anxiety and depression levels. This result is unusual but not unique as indicated in Sin and Lyubomirsky's (2009) findings in which 25 combined studies showed that PPI's were effective for treating the symptoms of depression. Conversely, their study debunked the myth that depressed individuals are less likely to benefit from PPI's as a result of the cognitive, affective and behavioural deficits associated with depression. Instead they found that depressed individuals benefitted more from the interventions relative to individuals who were not depressed. This relates to the ceiling effect which suggests that more depressed people have greater room to improve. Considering that the sample in this study was non-clinical, the ceiling effect may serve as an explanation for the lack of significant improvements in well-being, and simultaneously emphasizes the impetus of the results obtained in terms of anxiety and depression.

In addition, several studies suggested that longer interventions are more likely to produce greater and more enduring gains in well-being (Seligman et al., 2005; Sin & Lyubomirsky, 2009; Van Schalkwyk & Wissing, 2013). The lack of change in well-being in the current study may have been due to the fact that the intervention duration was short. Sin and Lyubomirsky (2009) suggest that this longer duration may allow for greater opportunity for intervention strategies to become ingrained as new habits. Sheldon and Lyubomirsky's (2004) support this notion through their sustainable happiness model which suggests that lasting positive emotional benefits require continual effort to achieve. Similarly, Van Schalkwyk and Wissing (2013) suggested that the effectiveness of an intervention may depend upon the length of the intervention programme, and that the manifestation of well-being is accomplished over time. This is consistent with suggestions by Seligman et al. (2005) that well-being strategies may have a delayed or long-term effect. Shoshani and Steinmetz (2014) confirm this theory in their long-term study where they found significant increases in well-being and decreases in general distress, anxiety and depression in a two-year longitudinal evaluation of 537 ninth-grade students in Israel in a positive psychology intervention.

Other long-term studies abroad that have included both well-being and pathology measures have shown promising results. For example, the Penn Resiliency Programme (PRP) designed as a curriculum-based school intervention programme to increase resilience through positive psychology methods in schools in Australia, USA, UK, China and Portugal, among students aged 8 – 15 (Waters, 2011). In an appraisal of 17 studies comparing over 2000 scholars who went through the PRP programme, Seligman et al. (2009) reported a significant reduction of symptoms of depression, hopelessness and anxiety among the participants as well as long-lasting improvements in well-being evident at a two-year and two-and-a-half year follow-up.

Within the South African context, Van Schalkwyk and Wissing (2013) conducted a similar positive psychology intervention on a group of adolescents between the ages of 15 – 17 years. Similarly, they used the MHC-SF to measure well-being but instead of the RCADS-SV they used *The Patient Health Questionnaire: Depression Symptoms* to account for depression. In addition they included a number of other measures to account for stress, coping ability and general health amongst others. Similar to the current study, Van Schalkwyk and Wissing (2013) showed few significant results in the between-group measures, however, the within-group analysis revealed significant results in increased social, emotional and psychological well-being and revealed a decrease in depression and anxiety. They noted that the effectiveness of their intervention might have been dependent on the length and intensity of their programme, which spanned over ten 50-minute sessions in comparison to the current study that concluded results after four half-hour sessions. Supporting this notion, Seligman et al. (2005) claimed that the experienced benefits of well-being may not begin immediately and are mostly accomplished over time (i.e. long-term effect).

The results of the current study do, however, suggest that in order to avoid any iatrogenic effect on well-being, studies within the framework of positive psychology need to keep a view of the less positive elements of the well-being spectrum in order to gain a whole picture of a research study i.e. pathology measures must be included in PPI research. Since the inception of positive psychology there has increasingly been a shift away from including mental illness as a benchmark for well-being research, which, as illustrated in this study, may result in valuable research being discarded. Furthermore, Ryff and Keyes (1995) illustrated clearly that mental illness (depression) negatively correlates with measures of well-being. Therefore, a decrease in pathology is an important factor in increasing well-being because

total well-being or flourishing cannot exist in the presence of pathology (Keyes, 2002; Ryff & Keyes, 1995).

Some PPI studies that have included both well-being and pathology measures have, however, shown results contrary to the ones in the current study, where changes were detected in well-being but no changes were found in pathology indicators (Froh et al., 2008; Rashid and Anjum 2008; Suldo et al., 2014). Of the studies above that found changes in well-being, none used the MHC-SF, which brings into question whether the measuring instrument in the current study may offer a second rationale for the lack of well-being results in the presence of significant results related to pathology.

In addition, well-being is important in fighting mental illnesses such as anxiety and depression (Seligman et al., 2005), and in accordance with previous research, interventions such as strengths-building not only decrease the likelihood of undesirable outcomes, such as anxiety, depression, suicidal ideation, and substance abuse, but also offer important indicators for flourishing (Park & Peterson, 2009). However, Sin and Lyubomirsky (2009) advocate that PPI's are not an option for treating pathologies such as anxiety disorders, but they are useful for dealing with symptoms that characterize these disorders, such as lack of positive affect, engagement, and meaning in life. Therefore individuals with symptoms of anxiety and depression are likely to benefit from such interventions, as seen from the results in this study. The decrease in pathology as indicated in this study support the growing scientific basis that well-being should be taught to children at school not only as an antidote to depression (Seligman et al., 2005; Seligman et al., 2009; Waters, 2011), but also because well-being engenders greater levels of life satisfaction (Peterson et al., 2005; Seligman et al., 2009), increases creative thinking and promotes higher levels of academic performance (Keyes, 2006; Keyes et al., 2012; Seligman et al., 2009).

In conclusion, the significant results of this study suggest that the scholars who received the intervention experienced a decrease in anxiety and depression from pre-intervention to follow-up, and provide preliminary support for the efficacy of a comprehensive positive psychology intervention for adolescents across a wider spectrum of socio-economic groups in South Africa. Correspondingly, these results reinforce other studies (Seligman et al., 2005; Seligman et al., 2009; Shoshani & Steinmetz, 2014; Waters, 2011) that have demonstrated the potential benefits of positive psychology interventions for enhancing adolescents' mental health and well-being. Moreover, while positive psychology interventions are often regarded as being a quick fix solution, the present study underscores an important point, which is that positive psychology interventions take time and persistent effort, like most other change in the field of psychology. In other words, while positive psychology interventions help address specific psychological issues such as anxiety and depression with relative immediacy, long-lasting change towards flourishing requires time to develop. These findings provide substantial motivation for integrating positive education for enhancing well-being into the school curriculum.

3. LIMITATIONS OF THE STUDY

The key limitations within the present study reinforce the importance of further research into the promising results. These limitations relate specifically to the degree to which the results of the study are generalizable across the South African population. As the primary aim of the study was to evaluate the effect of a positive psychology intervention on adolescent well-being, the sampling, instrumental, procedural, and methodological emphasis was on practical implementation as well as theoretical development. The limitations are discussed within the aforementioned categories below.

3.1 Sampling Limitations

Although scholars were randomly allocated into control versus experimental groups, which lends greater validity to the results, pure random assignment was not possible due to specific student groups in a particular grade level being targeted for the intervention. This made for small sample sizes. The small sample size implies limited power to identify significant effects, evident particularly within the well-being measures in the present study. However, it is notable that the sample size in this study was adequate to detect significant effects in pathology measures.

In addition, the groups in the present study were not representative of the South African population in terms of ethnicity and socio-economic status according to the South African Census (2011), with the majority of participants being White (80.7%). This relates to ecological validity, which implies that the conclusions of this intervention are only generalizable to a group condition specifically in a school setting. Also, the roles of race, ethnicity, social class, and other important variables were not examined in this study, although they may play a central part in the ways in which strengths and well-being are related. Lyubomirsky and Layous (2013), reported that demographic variables effect well-being, for example, positive activities seem to be more effective among Westerners and older people. The impetus for further research is magnified by these limitations and in understanding well-being in the context of a broader range of variables specifically relevant to the diverse South African population.

3.2 Instrument Limitations

Self-report questionnaires, by their very nature, may compromise how truthfully a participant responds. Non-random deviation from true answers may occur when respondents guess what the test is about and answer questions in order to impress the facilitator or to be

seen in a more positive light (socially desirable responding). These are known as a response set (Moerdyk, 2009). Furthermore, additional instruments may have been valuable in supporting the data.

3.3 Limitation in Terms of Validity and Reliability

We should be careful when drawing conclusions about a construct measured with a single scale. The MHC-SF has been validated in a South African context (Keyes et al., 2008), but it is a possible limitation to assume that the self-report instruments measure what they claim to. In addition, few studies have utilised the RCADS-SV measure which is relatively new (2012) and no studies validating the RCADS-SV in the South African context could be found.

3.4 Methodological Limitations

It is important to consider any confounding variables that may have been present, however, in the current study, data analysis did not indicate any significant results relating to the presence of confounding variables. A possible confounding variable to consider is that each school's experimental group received the intervention separately at different times during their academic year and different degrees of stressors and pressures could therefore be expected between the groups.

A greater consequence to the results of the study was possibly the short duration of the intervention programme, which could not be avoided due to constraints within the school curriculum. Most similar intervention programmes have a much longer duration including longer sessions, which may have had a negative impact on the present study in terms of potency. Finally, due to this study taking place within school time, absenteeism was not within the control of the researcher and in particular a large number of boys from the

experimental group were absent due to an overseas tour at the time of their post-test assessment.

4. RECOMMENDATIONS FOR FUTURE RESEARCH

The promising results of this study provide impetus for further future research examining the effects of positive psychology intervention among South African adolescents. One suggestion would be to broaden the scope of the study in terms of duration, number of sessions and sample size. Now that it has been established that such an intervention can have a significant positive effect on adolescents whose base-line affect is high, it would be useful to extend the programme to a more demographically and socio-economically representative South African youth sample, whose base-line affect may not be as high. In addition, Suldo et al.'s (2014), study provides support for the utility of screening instruments such as a brief measure of life satisfaction to ensure intervention for those individuals who indicate room for improvement in well-being.

Another suggestion would be the implementation of a school-wide approach, such as the Penn Resiliency Programme, which has been tested in several other countries including Australia and the USA (Waters, 2011). Such a programme can give a good indication of the potency and effect of positive psychology interventions among South African youth within schools. Assuming that well-being develops over time as hypothesized by Seligman et al. (2005), the roll-out of a year-long programme would then allow specifically for well-being effects to emerge.

Other specific questions could address issues such as how effective each of the different intervention activities are. For example, does gratitude hold more weight than strength identification and building, and also, do these activities differ in efficaciousness

when comparing gender, race and age? Thus, exploration into whether the intervention is effective in individual therapy would clarify the aforementioned possible limitation relating to ecological validity.

In terms of data analysis, it may be beneficial to include additional measuring instruments that cover a wider range of pathologies and provide a greater depth of well-being exploration, considering that the well-being measure in the current study showed no significant differences between the groups over time in contrast to the pathology measuring instrument. Additional measuring instruments would cover a wider range of pathologies, provide a greater depth of well-being exploration, and may be useful for gathering richer data. For instance Suldo et al. (2014) used life satisfaction scales and affect scales to measure the frequency of emotional distress and youth self-report questionnaires for child behaviour, while Van Schalkwyk and Wissing (2013) made use of scales to assess coping, self-regulation and stress management abilities as well a general health questionnaire. In this manner, parent and teacher responses could be evaluated in addition to the scholars' self-report questionnaires, as was done by Seligman et al. (2009).

Finally, a longitudinal study that tracks students from a school-wide approach would be very useful in exploring whether adolescents' mental health is a precursor for adult mental health in the South African context and how positive psychology intervention impacted their mental health in the long-term. Also, for an even more dense analysis of data, a descriptive qualitative inquiry could be implemented to examine individual subjective experiences of the well-being intervention. Further studies aimed at the South African adolescent population can greatly contribute to knowledge on how these positive psychological interventions impact the overall well-being and flourishing among youth, and provide solid grounding for effective intervention strategy planning and implementation.

5. CONCLUSION

This study evaluated the effect of a positive psychology intervention on a group of adolescents in grade seven within the school setting as part of their curriculum for a period of four consecutive weeks. Seligman (2002; 2011) and Keyes' (2005) theories on well-being (flourishing) were used as a frame of reference. An experimental group and a control group were selected randomly at a boys' school and a girls' school, delivered separately at each school and replicated as accurately as possible across the two settings. The experimental group at each school received the intervention while the control group received no intervention and no placebo.

Scholars in the experimental group were introduced to a new positive psychology activity each week during their half-hour session. They were asked to keep a gratitude diary in which they would record three good things for which they felt grateful each week for the duration of the intervention period. In addition, each session began with a five-minute loving kindness meditation, and simple homework tasks relevant to the specific activity presented each week were given after each session. Other positive psychology interventions used included a gratitude letter exercise to promote positive emotions in the past, a savouring activity coupled with the meditation practice to create awareness and to increase positive emotions in the present, and signature (character) strengths and optimism activities to develop positive emotions for the future.

Despite the intervention in this study being brief, the results provide encouraging empirical support for utilising positive psychology intervention within the school curriculum to increase adolescent well-being and decrease pathologies such as anxiety and depression. The results also indicate the importance of including mental illness as a gauge to measure mental health and well-being in intervention studies. Interventions that span a longer time-

frame seem to be more effective (Lyubomirsky & Layous, 2013; van Schalkwyk & Wissing, 2013), but as illustrated by the present study, even short interventions can be effective.

The results provide valuable information for further study in terms of samples, methodology and intervention duration. In addition, it provides support for implementing a positive psychology intervention as a school-based mental health service. Flourishing adolescents perform better in social, academic and physical health domains (Suldo & Shaffer, 2008), therefore this study also highlights the importance of delivering effective intervention services aimed at youth with psychopathology to ensure their optimal academic and social functioning (Suldo et al., 2011).

In sum, within the South African context, the participants in this study formed part of a socio-economic group associated with high base-line levels of well-being. The fact that they were a non-clinical sample reinforces their higher base-line level. Based on the results of the present study and considering the ceiling effect, which suggests that individuals functioning at a lower base-line level of well-being may experience greater benefit from positive intervention (Froh et al., 2009), it would be expected that South African adolescents, the majority of whom form part of a more representative portion of the population, could benefit from having a positive psychology intervention included in the school curriculum. Thus, the promising results of this study coupled with evidence verified by several other international studies (Seligman et al., 2005; Seligman et al., 2009; Shoshani & Steinmetz, 2014; Waters, 2011) suggest that evidence-based positive psychology interventions should be integrated into the school curriculum if the global increase in adolescent pathologies, including anxiety and depression, is to be addressed effectively, and by so doing may increase well-being with the objective of promoting flourishing adolescents.

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